DIGESTIVE DISEASE DAYS

2019

PROGRAMMA

3 en 4 oktober

Congrescentrum NH Koningshof
Veldhoven

NVGE
NEDERLANDSE VERENIGING
VOOR GASTRO-ENTEROLOGIE

DIGESTIVE DISEASE DAYS - DDD

NVGE
NEDERLANDSE VERENIGING
VOOR GASTRO-ENTEROLOGIE

DIGESTIVE DISEASE DAYS - DDD

Het programma werd samengesteld met inbreng van de volgende verenigingen en secties:
Nederlandse Vereniging voor Gastroenterologie
Nederlandse Vereniging voor Gastrointestinale Chirurgie
Nederlandse Vereniging voor Hepatologie
Nederlandse Vereniging van Maag-Darm-Leverartsen

Secties:
Netherlands Society of Parenteral and Enteral Nutrition
Sectie Gastrointestinale Endoscopie
Sectie Neurogastroenterologie en Motiliteit
Sectie Gastrointestinale Oncologie
Sectie Inflammatoire Darmziekten IBD
Sectie Kinder-MDL
Verpleegkundigen & Verzorgenden Nederland – MDL

INHOUDSOPGAVE **pag.**

Tijdstippen diverse ledenvergaderingen donderdag:

Nederlandse Vereniging voor Hepatologie	3 oktober 09.00 uur – Baroniezaal
Nederlandse Vereniging voor Gastroenterologie	3 oktober 11.30 uur – Baroniezaal
NVMDL i.o.	3 oktober 12.00 uur – Zaal 63
Nederlandse Vereniging voor Gastrointestinale Chirurgie	3 oktober 14.30 uur – Brabantzaal
Sectie Inflammatoire Darmziekten	3 oktober 09.45 uur – Zaal 81
Sectie Gastrointestinale Oncologie	3 oktober 11.00 uur – Parkzaal

INHOUDSOPGAVE **pag.**

Tijdstippen diverse ledenvergadering vrijdag:
Nederlandse Vereniging van Maag-Darm-Leverartsen 4 oktober 08.00 uur – Zaal 82-83

Belangrijke mededeling
over de aanwezigheid van farmaceutische industrieën

NVGE
NEDERLANDSE VERENIGING
VOOR GASTRO-ENTEROLOGIE

Aan alle deelnemers tijdens de Digestive Disease Days op 3 en 4 oktober 2019

De Nederlandse Vereniging voor Gastroenterologie kent een jarenlange samenwerking met de farmaceutische industrie. De vereniging stelt de farmaceutische industrie in de gelegenheid aanwezig te zijn bij de wetenschappelijke vergaderingen met een stand. Mede hierdoor kan de vereniging haar wetenschappelijke bijeenkomsten organiseren.

De Geneesmiddelenwet zegt dat - onder strikte voorwaarden - de farmaceutische industrie alleen reclame mag maken voor receptgeneesmiddelen voor personen die bevoegd zijn om dergelijke geneesmiddelen voor te schrijven. Alle andere personen (inclusief bijvoorbeeld verpleegkundigen, endoscopie-assistenten en biochemici) worden beschouwd als "publiek". De farmaceutische industrie mag geen reclame maken voor receptgeneesmiddelen voor publiek.

De Nederlandse Vereniging voor Gastroenterologie is een wetenschappelijke vereniging voor personen die beroepsmatig betrokken zijn bij zorg, onderwijs en onderzoek ten behoeve van patiënten met maag-, darm- en leveraandoeningen. Dat betekent dat ook personen die geen arts zijn, lid van de NVGE zijn.
De aanwezigheid van artsen, niet-artsen en farmaceutische industrieën tijdens het congres kan de NVGE ongewild in aanraking brengen met de inspectie voor de gezondheidszorg, sectie reclametoezicht, en daarmee in diskrediet worden gebracht. Dat willen wij uiteraard voorkomen.

In verband met de Gedragscode Geneesmiddelenreclame van de CGR en de aan het NVGE-congres verbonden expositie van farmaceutische producten, medische instrumenten en voedingsmiddelen, zal bij uw congresregistratie via de NVGE-website worden gevraagd naar uw bevoegdheid om medicijnen voor te schrijven.

Alle congresdeelnemers dragen verplicht een congresbadge waarop behalve de naam ook beroep/ functie staat aangegeven. Farmaceutische standhouders benaderen uitsluitend congresdeelnemers die de bevoegdheid hebben om receptgeneesmiddelen voor te schrijven of ter hand te stellen. Om dit extra te verduidelijken zal wederom worden gekozen voor verschillende kleuren congresbadges.

Uit het bovenstaande volgt dat aanwezige reclame-uitingen en merkproductinformatie van farmaceutische industrieën alleen gericht zijn op personen die bevoegd zijn om de betreffende geneesmiddelen voor te schrijven. Wij maken u erop attent dat het voor niet-artsen dan ook niet is toegestaan de stands van de aanwezige farmaceutische industrieën te bezoeken.

De NVGE en farmaceutische industrie (sponsoren) vertrouwen erop u met bovenstaande voldoende te hebben geïnformeerd.

Het bestuur van de NVGE

Cursorisch onderwijs in maag-darm-leverziekten — Brabantzaal

Cursuscommissie:
Prof. dr. B. Oldenburg, MDL-arts, UMCU, Utrecht, voorzitter
Prof. dr. A.J. Bredenoord, MDL-arts, Amsterdam UMC, AMC
Dr. E.J.M. van Geenen, Radboudumc, Nijmegen
Dr. I.L. Holster, aios MDL, Erasmus MC, Rotterdam
Dr. M.A.J.M. Jacobs, MDL-arts, Amsterdam UMC, VU
Dr. Y. Keulemans, MDL-arts, Zuyderland, Heerlen
Dr. J.F.M. Lange, chirurg, UMCG
Dr. A.M.J. Langers, MDL-arts, LUMC, Leiden
Dr. B.J. Veldt, MDL-arts, Reinier de Graaf Gasthuis, Delft
Dr. J. Buijs, aios MDL, Erasmus MC
Drs. M. Radersma, aios MDL, OLVG, Amsterdam

13.30-13.40 uur — Opening door prof. dr. B. Oldenburg, MLD-arts, UMC Utrecht
Pre-test vragen met behulp van online response system.

Onderwerp: Neurogastro-enterologie en Motiliteit

Voorzitters: *Prof. dr. A.J. Bredenoord samen met J. Buijs, aios MDL*

13.40 – 14.00 — Oesophagus motiliteitsstoornissen
Dr. A. Bogte, MDL-arts, UMCU, Utrecht

14.00 – 14.20 — Reflux oesophagitits: voorbij de PPI
Dr. W.E. Hueting, chirurg, Alrijne Ziekenhuis, Leiden

14.20 – 14.40 — Eosinofiele oesophagitis
Prof. dr. A.J. Bredenoord, MDL-arts, Amsterdam UMC, AMC, Amsterdam

14.40 – 15.00 — Maagontledingsstoornissen
Prof. dr. A.A.M. Masclee, MDL-arts, MUMC, Maastricht

15.00 – 15.20 — Postoperatieve ileus
Dr. K. Peeters, chirurg, LUMC, Leiden

15.20 – 15.50 — Pauze

Cursorisch onderwijs in maag-darm-leverziekten **Brabantzaal**

Voorzitters:	*Dr. A. Bogte samen met J. Honing, aios MDL*
15.50 – 16.10	Chronische obstipatie: voorbij het laxeren *Dr. D. Keszthelyi, MDL-arts, MUMC, Maastricht*
16.10 – 16.30	IBS *Dr. L.A. van der Waaij, MDL-arts, Martini Ziekenhuis Groningen*
16.30 – 16.50	Bekkenbodem problematiek *Dr. R.J.F. Felt-Bersma, MDL-arts, Amsterdam UMC, loc. VUmc*
16.50 – 17.10	Hemorroïden, prolapse, fissuren *Dr. S.O. Breukink, chirurg, Maastricht UMC*
17.10 – 17.30	Behandeling van incontinentie *Dr. F. Hoogenboom, chirurg, UMCG, Groningen*
17.30 – 18.00	Eind-test vragen met behulp van online response system.
18.00 – 20.30	Einde cursus met aansluitend diner/buffet

Op het cursorisch onderwijs zijn conform de eisen van het Centraal Register Kort Beroepsonderwijs leveringsvoorwaarden van toepassing.
Zie www.nvge.nl en www.mdl.nl

De cursuscommissie verwacht van de MDL-artsen i.o. dat ze de Cursus Klinische Hepatologie (NVH) éénmaal bezoeken in het tweede deel van de MDL-opleiding (jaar vier tot zes).

Symposium – Nederlandse Vereniging voor Gastrointestinale Chirurgie I — Brabantzaal

***Voorzitters** : M. Besselink en L. Kager*

Nieuwe ontwikkelingen op het gebied van acute en chronische pancreatitis

09.30 De niet-chirurgische pijnbehandeling van chronische pancreatitis
E.J.M. van Geenen, MDL-arts, Radboudumc, Nijmegen

Battle 1:

09.55 "Bij wie hoort de patiënt met acute pancreatitis thuis: MDL of Chirurgie?"
R. Quispel, MDL-arts, RDGG, Delft
Dr. M.W.J. Stommel, chirurg, Radboudumc, Nijmegen

10.20 Vochtbeleid en andere interventies in de vroege fase van acute pancreatitis
Dr. S.A.W. Bouwense, chirurg i.o. (?), MUMC, Maastricht

10.45 APEC: het hoofdstuk ERCP bij acute pancreatitis nu definitief gesloten?
N.J. Schepers, aios MDL, Albert Schweitzer Ziekenhuis, Dordrecht

Battle 2:

11.10 "ESCAPE: niet alleen vaker maar ook eerder opereren bij chronische pancreatitis?
Prof. dr. M.A. Boermeester, chirurg, Amsterdam UMC (loc. AMC)
Prof. dr. M.J. Bruno, MDL-arts, Erasmus MC, Rotterdam

11.30 Ledenvergadering Nederlandse Vereniging voor Gastroenterologie in Baroniezaal

12.00 Lunch expositiehal

Symposium – Nederlandse Vereniging voor Gastrointestinale Chirurgie II — Brabantzaal

***Voorzitters** : G.A. Patijn en S.L.M. Liem*

Levermetastasen biologie

13.00 Biology of liver metastasis.
A. Siriwardena MD FRCS, Professor of Hepatobiliary Surgery, University of Manchester
Consultant Hepatobiliary Surgeon, Manchester Royal Infirmary

13.30 'Immunostatus van de lever bij colorectale levermetastasen'
Dr. K.P. de Jong, chirurg, UMCG, Groningen

14.00 'Histopathologisch groeipatroon als biomarker bij colorectale levermetastasen'
Dr. D.J. Grünhagen, chirurg Erasmus MC, Rotterdam

14.30 Algemene ledenvergadering NVGIC

14.45 Algemene ledenvergadering Werkgroep leverchirurgie

15.00 Theepauze

Symposium – Nederlandse Vereniging voor Gastrointestinale Chirurgie III **Brabantzaal**

Voorzitters *: P. van Duijvendijk en J. Straatman*

Recente ontwikkelingen in de Upper GI chirurgie

15.30 Gebruik van mesh of primaire hechtingen bij herstel van HD
J. Oors, coördinator gastro-intestinaal functieonderzoek, Amsterdam UMC (loc. AMC) en St. Antonius

16.10 Minimaal invasieve maag chirurgie: resultaten van 2 gerandomiseerde studies
N. van der Wielen, arts-onderzoeker (STOMACH), Amsterdam UMC (loc. VUmc)
A. van der Veen, arts-onderzoeker (LOGICA), UMCU, Utrecht

16.40 Verbetering van resultaten van slokdarm en maagchirurgie met behulp van de audit
L. van der Werf, assistent chirurgie, Amsterdam UMC (loc. AMC)

17.00 Einde NVGIC Symposium, vervolg om 17.00 uur met de President select

President Select **Brabantzaal**

Voorzitters *: P.D. Siersema en C.J. van der Woude*

17.00 Non-pedunculated, screen-detected T1 colorectal carcinomas have an increased risk of lymph node metastasis as compared to non-screen detected T1 colorectal carcinomas (p. 38)
L. van der Schee[1], K.J.C. Haasnoot[1], S.G. Elias[2], Y. Backes[1], A. van Berkel[3], F. Boersma[4], F. ter Borg[5], K.M. Gijsbers[5], K. Kessels[6], R.W.M. Schrauwen[7], B.W.M. Spanier[8], J.S. Terhaar Sive Droste[9], W.H. de Vos tot Nederveen Cappel[10], F.P. Vleggaar[1], M.M. Laclé[11], L.M.G. Moons[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept. Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Noordwest Ziekenhuis, Alkmaar, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Gelre Ziekenhuis, Apeldoorn, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Deventer Ziekenhuis, Deventer, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Antonius Ziekenhuis, Nieuwegein, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Bernhoven, Uden, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Rijnstate Ziekenhuis, Arnhem, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Isala Ziekenhuis, Zwolle, The Netherlands. [11]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. On behalf of The Dutch T1 CRC Working Group

17.10 Multi-omics analysis reveals gut microbial dysbiosis and metabolic alterations in fatigued patients with quiescent Inflammatory Bowel Diseases. (p. 39)
N.Z. Borren[1], D. Plichta[2], V. Peng[2], J. Luther[1], H. Khalili[1], J.J. Garber[1], F.P. Colizzo[1], C.J. van der Woude[3], H. Vlamakis[2], R.J. Xavier[1], A.N. Ananthakrishnan[1]. [1]Dept. of Gastroenterology, Massachusetts General Hospital, Boston, United States Of America. [2]Dept. of Biostatistics, Broad Institute, Cambridge, United States of America. [3]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands.

17.20 Hepatocellular adenoma during pregnancy: a prospective study on growth of the liver lesions (p. 40)
A.J. Klompenhouwer[1], M.P. Gaspersz[1], M.E.E. Bröker[1], M.G.J. Thomeer[2], S.M. van Aalten[1], E.A.P. Steegers[3], T. Terkivatan[1], H. de Koning[4], R.A. de Man[5], J.N.M. IJzermans[1]. [1]Dept. of Surgery,

Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Radiology and Nuclear Medicine, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Gynaecologic Oncology, Erasmus MC, Rotterdam, The Netherlands. [4]Dept. of Public Health, Erasmus MC, Rotterdam, The Netherlands. [5]Dept. of Hepatology, Erasmus MC, Rotterdam, The Netherlands.

17.30 Beste ingezonden video endoscopie

17.40 Einde abstractproramma

Uitreiking prijzen **Brabantzaal**

Voorzitters : *P.D. Siersema en C.J. van der Woude*

17.40 Uitreiking Gastrostart subsidies

17.45 State of the art lecture
A. Siriwardena MD FRCS, Professor of Hepatobiliary Surgery, University of Manchester Consultant Hepatobiliary Surgeon, Manchester Royal Infirmary

18.15 Congresborrel expositiehal

19.30 Diner in de Beneluxzaal

22.00 Netwerkborrel

Career Event **Auditorium**

Voorzitters: *M. Radersma, V. Ekkelenkamp en T. Weehuizen*

Grenzen verleggen
Het is nog een paar jaar geleden dat je als aios MDL al in je 5e jaar gepolst werd voor een baan, soms was het zelfs een kwestie van kiezen tussen meerdere ziekenhuizen. De markt voor Jonge Klaren is echter aan het veranderen, het aantal vacatures is sterk aan het teruglopen. Het is daarom essentieel geworden om verder te kijken dan de gebaande paden. Om die reden is het thema voor het Career Event van dit jaar "Grenzen verleggen" geworden. Verder kijken dan de grenzen van het ziekenhuis, verder kijken dan de grenzen van het land maar misschien ook wel verder kijken dan je eigen grenzen!

08.30 Opzetten van een ZBC
Dr. J.M. (Jeroen)Jansen, MDL-arts OLVG oost, oprichter Poli-direct

08.45 Mijn persoonlijke zoektocht: wat kan ik betekenen voor de zorg buiten de kliniek?
T. (Tim) Widdershoven, basis-arts, Zorgverzekeraar VGZ

09.00 Werken in Australië
Dr. D.P. (Dirk) van Asseldonk, MDL-arts Noordwest Ziekenhuisgroep

09.15 Werken in Suriname
F. (Foke) van Delft, MDL-arts Gelre Ziekenhuis

09.30 Vacatures MDL-artsen in het buitenland
J. (Jacqueline) Kant, BKV, uitzendbureau voor zorgprofessionals

09.50 Tijd voor extra vragen

Symposium – Neurogastroenterologie en Motiliteit **Auditorium**

***Voorzitters** : A.J. Bredenoord en F. van Hoeij*

Klinisch symposium: "Maag" klachten

10.00 Bovenbuik klachten: hoe pak ik het aan?
Dr. D.P. Hirsch, MDL-arts, Rijnstate ziekenhuis, Arnhem
Prof. dr. N. de Wit, hoogleraar huisartsgeneeskunde, Julius Centrum voor Gezondheidswetenschappen, UMCU, Utrecht

10.36 Ruminatie, regurgitatie, braken: hoe maak ik het verschil?
Prof. dr. A.J. Bredenoord, MDL-arts, Amsterdam (loc. AMC)

10.54 Behandeling van functionele dyspepsie: nieuwe inzichten
Dr. D. Keszthelyi, MDL-arts, MUMC, Maastricht

11.12 Gastroparese
Dr. J.M. Conchillo, MDL-arts, MUMC, Maastricht

11.30 Ledenvergadering Nederlandse Vereniging voor Gastroenterologie in Baroniezaal

12.00 Lunch expositiehal

Symposium – Sectie Inflammatoire Darmziekten **Auditorium**

***Voorzitters** : J. de Lange en A.E. van der Meulen*

Chirurg en MDL-arts rondom de IBD patiënt

13.00 Optimalisatie perioperatieve zorg
Dr. R.J. Jacobs, MDL-arts, Alrijne ziekenhuis, Leiden

13.20 Tips & tricks subtotale colectomie in acute setting
Dr. J. Lange, chirurg, UMCG, Groningen
Prof. dr. C. Ponsioen, MDL-arts, Amsterdam (loc. AMC), Amsterdam

13.45 Crohn ileocoecaal: nieuwe inzichten
Dr. A.C. de Vries, MDL-arts, Erasmus MC, Rotterdam

14.05 Anal Crohn's disease
Dr. Phil Tozer, St. Mark's Hospital, London, UK

14.35 Casuïstiek (aanmelden via voorzitters)

15.00 Pauze

Symposium – Platform Innovatie — Auditorium

***Voorzitters** : D. Hommes en M.P. Schwartz*

Van Value-Based MDL naar de Robot, Artificial Intelligence en Virtual Health Assistants

15.30 Introductie - Platform Innovatie MDL
Dr. M.P. Schwartz, MDL-arts, Meander MC, Amersfoort

15.40 Gaat kunstmatige intelligentie uw spreekkamer overnemen?
Prof. dr. D. Hommes, MDL-arts, LUMC, Leiden

16.00 Zorginnovatiefinanciering – 'investment in knowledge pays the best interest'.
Dr. J. Struijs, onderzoeker LUMC/RIVM, Leiden

16.20 Van observeren naar innoveren: een vernieuwende kijk op endoscopie.
Dr. E.J. Schoon, MDL-arts, Catharina ziekenhuis, Eindhoven

16.40 Zorgtechnologie in de chirurgie: de innovatieve robot.
Dr. J.P. Ruurda, chirurg, UMCU, Utrecht

17.00 Plenaire sessie in de Brabantzaal

ALV Nederlandse Vereniging voor Hepatologie — Baroniezaal

09.00 Algemene ledenvergadering NVH

Symposium - Nederlandse Vereniging voor Hepatologie — Baroniezaal

***Voorzitter :** B. Takkenberg en S. Coenen*

Symposium Portale hypertensie
De voertaal van dit symposium is Nederlands.

09.30 Opening door voorzitters

09.35 Key note lecture: Behandeling van refractaire ascites
Prof. dr. F. Nevens, hepatoloog, UZ Leuven, België

10.05 Hepatopulmonaal syndroom en portopulmonale hypertensie
Prof. dr. H.J. Bogaard, longarts-onderzoeker, Amsterdam UMC (loc. VUmc), Amsterdam

10.20 Pro-con discussie beta-blokkers in gedecompenseerde cirrose
M. Kramer, MDL-arts, MUMC, Maastricht
Dr. S. Coenen, MDL-arts, Erasmus MC, Rotterdam

10.50 Time to vote: bepalen van de wetenschappelijke focus van portale hypertensie onderzoek in Nederland
Dr. R.B. Takkenberg, MDL-arts, Amsterdam UMC, locatie AMC

11.30 Einde symposium

ALV Nederlandse Vereniging voor Gastroenterologie **Baroniezaal**

11.30 Algemene ledenvergadering NVGE

12.00 Lunch expositiehal

Abstractsessie - Nederlandse Vereniging voor Hepatologie **Baroniezaal**

Voorzitters : *J.M. Vrolijk en H. van Soest*

13.00 Rapid treatment response in autoimmune hepatitis (p. 41)

S. Pape[1], T.J.G. Gevers[1], J.M. Vrolijk[2], B. van Hoek[3], G. Bouma[4], C.M.J. van Nieuwkerk[4], J. Hartl[5], R. Taubert[6], E. Jaeckel[6], M.P. Manns[6], M. Papp[7], N. Sipeki[7], F. Stickel[8], C. Efe[9], E. Ozaslan[10], T. Purnak[11], F. Nevens[12], D.J.N. Kessener[13], A. Kahraman[13], C. Schramm[5], A.W. Lohse[5], J.P.H. Drenth[1], M.A. Heneghan[14]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [5]1st. Dept. of Internal Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany. [6]Dept. of Gastroenterology and Hepatology, Hannover Medical School, Hannover, Germany. [7]Dept. of Gastroenterology, University of Debrecen, Debrecen, Hungary. [8]Dept. of Gastroenterology and Hepatology, University Hospital of Zurich, Zurich, Switzerland. [9]Dept. of Gastroenterology, Harran University Hospital, Urfa, Turkey. [10]Dept. of Gastroenterology, Numune Research and Education Hospital, Ankara, Turkey. [11]Dept. of Gastroenterology, Hacettepe University, Ankara, Turkey. [12]Dept. of Gastroenterology and Hepatology, University Hospital KU Leuven, Leuven, Belgium. [13]Dept. of Gastroenterology and Hepatology, University Clinic of Essen Duisburg-Essen, Essen, Germany. [14]Institute of Liver Studies, King's College Hospital, London, United Kingdom.

13.10 A proper selected group of patients with autoimmune hepatitis can benefit of treatment withdrawal. (p. 42)

R.J.A.L.M Snijders[1], F. van den Brand[1], Y.S. de Boer[1], C.M.J. van Nieuwkerk[1], B.J. Verwer[2], E. Bloemena[3], S.D. Kuiken[4], J.P.H. Drenth[5], G. Bouma[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Spaarne Gasthuis, Haarlem, The Netherlands. [3]Dept. of Pathology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, OLVG, Amsterdam, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Radboud UMC, Nijmegen, The Netherlands.

13.20 Ursodeoxycholic Acid Treatment-Induced GLOBE Score Changes Are Associated with Liver Transplantation-Free Survival in Patients with Primary Biliary Cholangitis (p. 43)

R.C. de Veer[1], M.H. Harms[1], J.C. Goet[1], C. Corpechot[2], D. Thorburn[3], P. Invernizzi[4], W.J. Lammers[1], H.L.A. Janssen[5], P.M. Battezzati[6], F. Nevens[7], K.D. Lindor[8], A. Floreani[9], C.Y. Ponsioen[10], M.J. Mayo[11], A. Parés[12], A.L. Mason[13], K.V. Kowdley[14], P.J. Trivedi[15], G.M. Hirschfield[16], T. Bruns[17], G.N. Dalekos[18], X. Verhelst[19], B.E. Hansen[16], H.R. van Buuren[1], A.J. van der Meer[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus Medical Center, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Hôpital Saint-Antoine, Paris, France. [3]Dept. of Gastroenterology and Hepatology, The Sheila Sherlock Liver Centre, The Royal Free Hospital, London, United Kingdom. [4]Dept. of Gastroenterology and Hepatology, University of Milano-Bicocca, Milan, Italy. [5]Dept. of Gastroenterology and Hepatology, Toronto Centre for Liver Disease, Toronto General Hospital, Toronto, Canada. [6]Dept. of Gastroenterology and Hepatology, Department of Health Sciences, Università degli Studi di Milano, Milan, Italy. [7]Dept. of Hepatology, Department of Hepatology, University Hospitals Leuven, KU Leuven, Leuven, Belgium. [8]Dept. of Gastroenterology and Hepatology, Mayo Clinic, Rochester, United States Of America. [9]Dept. of Gastroenterology, Department of Surgery, Oncology and Gastroenterology, University of Padua, Padua, Italy. [10]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centres, location Academic Medical Center, Amsterdam,

The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Digestive and Liver diseases, UT Southwestern Medical Center, Dallas, United States Of America. [12]Dept. of Hepatology, Hospital Clínic, CIBERehd, IDIBAPS, University of Barcelona, Barcelona, Spain. [13]Dept. of Gastroenterology and Hepatology, University of Alberta, Edmonton, Canada. [14]Dept. of Hepatology, Liver Care Network and Organ Care Research, Swedish Medical Center, Seattle, United States Of America. [15]Dept. of Hepatology, Birmingham NIHR Biomedical Research Centre, University of Birmingham, Birmingham, United Kingdom. [16]Dept. of Hepatology, Toronto Centre for Liver Disease, Toronto General Hospital, Toronto, Canada. [17]Dept. of Gastroenterology and Hepatology, University of Jena, Jena, Germany. [18]Dept. of Hepatology, Institute of Internal Medicine and Hepatology, University of Thessaly, Larissa, Greece. [19]Dept. of Gastroenterology and Hepatology, Ghent University Hospital, Ghent, Belgium. On behalf of the Global PBC Study Group.

13.30 Three years of Obeticholic Acid (OCA) Therapy Results in Histological Improvements in Patients with Primary Biliary Cholangitis: Further Analysis of the POISE Biopsy Substudy (p. 44)

C.L. Bowlus[1], P.J. Pockros[2], A.E. Kremer[3], A. Parés[4], L.M. Forman[5], J.P.H. Drenth[6], S. Ryder[7], L. Terracciano[8], K.J. van Erpecum[9], Y. Jin[10], A. Liberman[10], R. Pencek[10], L. MacConell[10], P. Bedossa[11]. [1]Dept. of Gastroenterology and Hepatology, University of California Davis, Sacramento, United States Of America. [2]Dept. of Gastroenterology and Hepatology, Scripps Clinic and Scripps Translational Science Institute, La jolla, United States of America. [3]1st. Dept. of Internal Medicine, Friedrich-Alexander University, Erlangen-nürnberg, Germany. [4]Dept. of Clinical Research Office, University of Barcelona, Barcelona, Spain. [5]Dept. of Gastroenterology and Hepatology, University of Colorado, Aurora, United States Of America. [6]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [7]Dept. of Biomedical Data Sciences, University of Nottingham, Nottingham, United Kingdom. [8]Dept. of Pathology, University of Basel, Basel, Switzerland. [9]Dept. of Gastroenterology and Hepatology, University Medical Center, Utrecht, The Netherlands. [10]Institute of Liver Studies, Intercept Pharmaceuticals Inc, San Diego, United States Of America. [11]Dept. of Pathology, University Paris Diderot, Paris, France.

13.40 Second-Line Therapy Is Indicated in Ursodeoxycholic Acid-Treated Patients with Primary Biliary Cholangitis and High Alkaline Phosphatase Despite a Complete GLOBE-Score Response (p. 45)

R.C. de Veer[1], M.H. Harms[1], C. Corpechot[2], W.J. Lammers[1], D. Thorburn[3], P. Invernizzi[4], H.L.A. Janssen[5], P.M. Battezzati[6], F. Nevens[7], K.D. Lindor[8], A. Floreani[9], C.Y. Ponsioen[10], M.J. Mayo[11], A. Parés[12], A.L. Mason[13], K.V. Kowdley[14], P.J. Trivedi[15], G.M. Hirschfield[16], T. Bruns[17], G.N. Dalekos[18], X. Verhelst[19], B.E. Hansen[16], H.R. van Buuren[1], A.J. van der Meer[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus Medical Center, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Hôpital Saint-Antoine, Paris, France. [3]Dept. of Gastroenterology and Hepatology, The Sheila Sherlock Liver Centre, The Royal Free Hospital, London, United Kingdom. [4]Dept. of Gastroenterology and Hepatology, University of Milano-Bicocca, Milan, Italy. [5]Dept. of Gastroenterology and Hepatology, Toronto Centre for Liver Disease, Toronto General Hospital, Toronto, Canada. [6]Dept. of Gastroenterology and Hepatology, Department of Health Sciences, Università degli Studi di Milano, Milan, Italy. [7]Dept. of Hepatology, Department of Hepatology, University Hospitals Leuven, KU Leuven, Leuven, Belgium. [8]Dept. of Gastroenterology and Hepatology, Mayo Clinic, Rochester, United States Of America. [9]Dept. of Gastroenterology, Department of Surgery, Oncology and Gastroenterology, University of Padua, Padua, Italy. [10]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centres, location Academic Medical Center, Amsterdam, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Digestive and Liver diseases, UT Southwestern Medical Center, Dallas, United States Of America. [12]Dept. of Hepatology, Hospital Clínic, CIBERehd, IDIBAPS, University of Barcelona, Barcelona, Spain. [13]Dept. of Gastroenterology and Hepatology, University of Alberta, Edmonton, Canada. [14]Dept. of Hepatology, Liver Care Network and Organ Care Research, Swedish Medical Center, Seattle, United States Of America. [15]Dept. of Hepatology, Birmingham NIHR Biomedical Research Centre, University of Birmingham, Birmingham, United Kingdom. [16]Dept. of Hepatology, Toronto Centre for Liver Disease, Toronto General Hospital, Toronto, Canada. [17]Dept. of Gastroenterology and Hepatology, University of Jena, Jena, Germany. [18]Dept. of Hepatology, Institute of Internal Medicine and Hepatology, University of Thessaly, Larissa, Greece. [19]Dept. of Gastroenterology and Hepatology, Ghent University Hospital, Ghent, Belgium. On behalf of the Global PBC Study Group

13.50 Bezafibrate is more effective than placebo in pruritus of chronic cholestasis: the FITCH trial (p. 46)

E.S. de Vries[1], R. Bolier[1], J.C. Goet[2], A. Parés[3], J. Verbeek[4], J.M. de Vree[5], J.P.H. Drenth[6], K.J. van Erpecum[7], C.M.J. van Nieuwkerk[8], N.S. Mostafavi[1], J.T. Helder[1], C.Y. Ponsioen[1], R.P. Oude Elferink[1], H.R. van Buuren[2], U.H.W. Beuers[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Erasmus Medical Center, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Liver Unit, Hospital Clinic, CIBERehd, IDIBAPS, University of Barcelona, Barcelona, Spain. [4]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center, Maastricht, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands.

14.00 Symptom Relief and Quality of Life after Combined Partial Hepatectomy and Cyst Fenestration in Polycystic Liver Disease: a Prospective Cohort Study (p. 47)
L.H.P. Bernts[1], M.K. Neijenhuis[1], M.E. Edwards[2], J.A. Sloan[3], R.L. Smoot[4], D.M. Nagorney[4], J.P.H. Drenth[1], M.C. Hogan[2]. [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Internal Medicine, Mayo Clinic, Rochester, United States of America. [3]Dept. of Scientific Research, Mayo Clinic, Rochester, United States Of America. [4]Dept. of Surgery, Mayo Clinic, Rochester, United States Of America.

14.10 Estrogen-containing oral contraceptives are associated with polycystic liver disease severity in pre-menopausal patients (p. 48)
L.H.P. Bernts[1], R.M.M. van Aerts[1], T.J.G. Gevers[1], W. Kievit[2], L. Koopmans[1], T.E. Nieboer[3], F. Nevens[4], J.P.H. Drenth[1]. [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Health Evidence, Radboudumc, Nijmegen, The Netherlands. [3]Dept. of Obstetrics and Gynecology, Radboudumc, Nijmegen, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, University Hospital Leuven, Leuven, Belgium.

14.20 The efficacy and safety of rifaximin-a: a 2-year observational study of overt hepatic encephalopathy (p. 49)
R.C. Oey[1], L.E.M. Buck[1], N.S. Erler[2], H.R. van Buuren[1], R.A. de Man[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Biostatistics, Erasmus MC, Rotterdam, The Netherlands.

14.30 Klinische battle
Strijd tussen de 3 beste NVH papers om de jaarlijkse prijs

15.00 Pauze

Symposium – Klinische voeding op de MDL-kaart! Baroniezaal

Voorzitters : *G.J.A. Wanten en J.W. Kruimel*

15.30 Voorgerecht: "Welke ingrediënten aanwezig?"
Dr. J.W. Kruimel, MDL-arts, MUMC+, Maastricht

15.40 Hoofdgerecht: "Voeding bij gezondheid en ziekte"
Prof. dr. B.J.M. Witteman, MDL-arts, Ziekenhuis Gelderse Vallei, Wageningen

16.10 Kindergerecht: "Piratenbord of kindermaaltijd?"
Dr. A. van den Berg, kinderarts-MDL, UMCU, Utrecht

16.30 Bijgerecht: "Als normale maaltijd niet gaat ..."
Dr. I. Gisbertz, MDL-arts, Ziekenhuis Bernhoven, Uden

16.50 Nagerecht: "Welke ingrediënten nodig?"
Dr. G.J.A. Wanten, MDL-arts, Radboudumc, Nijmegen

17.00 Plenaire sessie in de Brabantzaal

18.15 Congresborrel expositiehal

Van 12.00 tot 17.30 uur zal er een meetstraat Voedingstoestand ingericht zijn in de gang naar de Baroniezaal.

Symposium – Sectie Gastrointestinale Oncologie — Parkzaal

Voorzitters : *J. van Dieren en V.M.C.W. Spaander*

Post cancer

09.30 Laatste inzichten rondom peri-operatieve systeemtherapie
Dr. L. Melenkamp, oncoloog, MST, Enschede

10.00 Surveillance using FDG-uptake in the primary tumour on FDG-PET/CT in patients with oesophageal cancer and a clinically complete response after neoadjuvant chemoradiotherapy (p. 50)
M.J. Valkema[1], B.J. van der Wilk[1], B.M. Eyck[1], B.P.L. Wijnhoven[1], M.C.W. Spaander[2], S.M. Lagarde[1], G.A.P. Nieuwenhuijzen[3], M.N. Sosef[4], J.J.B. van Lanschot[1], R. Valkema[5]. [1]Dept. of Surgery, Erasmus MC University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology, Erasmus MC University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Surgery, Catharina Hospital Eindhoven, Eindhoven, The Netherlands. [4]Dept. of Surgery, Zuyderland Medical Center, Heerlen, The Netherlands. [5]Dept. of Radiology and Nuclear Medicine, Erasmus MC University Medical Center, Rotterdam, The Netherlands.

10.10 TNM-staging of duodenal adenocarcinoma (p. 51)
G. Litjens[1], Y.L.W.M. Vogels[1], S.A. Radema[2], L.A.A. Brosens[3], C.J.H.M. van Laarhoven[4], E.J.M. van Geenen[5], J.J. Hermans[1]. [1]Dept. of Radiology and Nuclear Medicine, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Medical Oncology, Radboudumc, Nijmegen, The Netherlands. [3]Dept. of Pathology, Radboudumc, Nijmegen, The Netherlands. [4]Dept. of Surgery, Radboudumc, Nijmegen, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands.

10.20 Preoperative biliary drainage in severely jaundiced patients with pancreatic head cancer; a retrospective cohort study. (p. 52)
L.A.J. van Gils[1], R.E. Verbeek[2], N. Wellerdieck[3], T.L. Bollen[4], M.P. Schwartz[5], F.P. Vleggaar[3], I.Q. Molenaar[6], H.C. van Santvoort[7], R.C. Verdonk[1], B.L.A.M. Weusten[1]. [1]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Groene Hart Hospital, Gouda, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, University Medical Center, Utrecht, The Netherlands. [4]Dept. of Radiology, St. Antonius Hospital, Nieuwegein, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Meander Medical Center, Amersfoort, The Netherlands. [6]Dept. of Surgery, University Medical Center, Utrecht, The Netherlands. [7]Dept. of Surgery, St. Antonius Hospital, Nieuwegein, The Netherlands.

10.30 Peritoneal metastases of gastric cancer origin: incidence, treatment and survival of a nationwide cohort. (p. 53)
W.J. Koemans[1], R. Lurvink[2], C. Grootscholten[3], J.C.H.B.M Luijten[4], R.H.A. Verhoeven[4], I.H. de Hingh[2], J.W. van Sandick[1]. [1]Dept. of Surgery, Antoni van Leeuwenhoek ziekenhuis, Amsterdam, The Netherlands. [2]Dept. of Surgery, Catharina ziekenhuis, Eindhoven, The Netherlands. [3]Dept. of Gastrointestinal Oncology, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [4]Dept. of

Research & Development, Netherlands Comprehensive Cancer Organisation, Utrecht, The Netherlands.

10.40 Multiple primary tumors in patients with esophageal squamous cell carcinoma (p. 54)
S.E.M. van de Ven, J.M. Falger, M.J. Bruno, A.D. Koch. Dept. of Gastroenterology and Hepatology, Erasmus Medical Center, Rotterdam, The Netherlands.

10.50 An immunosuppressive PD-L1 positive tumour microenvironment marks oesophageal adenocarcinomas refractory to neo-adjuvant chemoradiotherapy. (p. 55)
W.J. Koemans[1], J. van Dieren[2], J. van den Berg[3], M. Chalabi[2], F. Voncken[4], G. Meijer[3], J. van Sandick[1], L. Kodach[3]. [1]Dept. of Surgery, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Oncology, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [3]Dept. of Pathology, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [4]Dept. of Radiotherapy, Antoni van Leeuwenhoek, Amsterdam, The Netherlands.

11.00 Ledenvergadering Sectie Gastrointestinale Oncologie

11.30 Ledenvergadering NVGE in de Baroniezaal

12.00 Lunch expositiehal

Abstractsessie - Nederlandse Vereniging voor Gastrointestinale Chirurgie I **Parkzaal**

Voorzitters : *S. van Esser en E. Toxopeüs*

Upper GI

13.00 Localization of undetected residual tumor after neoadjuvant chemoradiotherapy in patients with esophageal cancer. (p. 56)
B.J. van der Wilk[1], M. Doukas[2], B.M. Eyck[1], M.C.W. Spaander[3], E.J. Schoon[4], K.K. Krishnadath[5], L.E. Oostenbrug[6], S.M. Lagarde[1], B.P.L. Wijnhoven[1], K. Biermann[2], J.J.B. van Lanschot[1]. [1]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Pathology, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Zuyderland Medical Center, Heerlen, The Netherlands.

13.10 The association of perioperative quality-of-care parameters (textbook outcome) with long term outcome after esophagectomy for esophageal cancer (p. 57)
M.C. Kalff[1], I. Vesseur[1], W.J. Eshuis[1], D. Heineman[2], F. Daams[2], D.L. van der Peet[2], S.S. Gisbertz[1], M.I. van Berge Henegouwen[1]. [1]Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Surgery, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands.

13.20 A propensity score matched cohort study to evaluate the association of lymph node retrieval with long-term overall survival in patients with esophageal cancer (p. 58)
L.R. van der Werf[1], E. Marra[2], S.S. Gisbertz[3], B.P.L. Wijnhoven[1], M.I. van Berge Henegouwen[3]. [1]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Biomedical Data Sciences, DICA, Leiden, The Netherlands. [3]Dept. of Surgery, Amsterdam UMC, Amsterdam, The Netherlands.

13.30 Long-term quality of life after total gastrectomy versus Ivor Lewis esophagectomy (p. 59)
E. Jezerskyte[1], L.M. Saadeh[2], E.R.C. Hagens[1], M.A.G. Sprangers[3], L. Noteboom[1], H.W.M. van Laarhoven[4], W.J. Eshuis[1], M.I. van Berge Henegouwen[1], S.S. Gisbertz[1]. [1]Dept. of Gastrointestinal

Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, Veneto Institute of Oncology (IOV IRCCS), Regional Center for Esophageal Disease, Padova, Italy. [3]Dept. of Epidemiology, Amsterdam UMC (loc. AMC), Department of Medical Psychology, Amsterdam, The Netherlands. [4]Dept. of Medical Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

13.40 Difference in long-term quality of life between McKeown and Ivor Lewis esophagectomy (p. 60)
E. Jezerskyte[1], L.M. Saadeh[2], E.R.C. Hagens[1], M.A.G. Sprangers[3], L. Noteboom[1], H.W.M. van Laarhoven[4], W.J. Eshuis[1], M.I. van Berge Henegouwen[1], S.S. Gisbertz[1]. [1]Dept. of Gastrointestinal Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, Veneto Institute of Oncology (IOV IRCCS), Regional Center for Esophageal Disease, Padova, Italy. [3]Dept. of Epidemiology, Amsterdam UMC (loc. AMC), Department of Medical Psychology, Amsterdam, The Netherlands. [4]Dept. of Medical Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

13.50 The impact of transthoracic and transhiatal esophagectomy on long-term quality of life according to EORTC QLQ-C30 and EORTC QLQ-OG25 questionnaires. (p. 61)
E. Jezerskyte[1], L.M. Saadeh[2], E.R.C. Hagens[1], M.A.G. Sprangers[3], L. Noteboom[1], H.W.M. van Laarhoven[4], W.J. Eshuis[1], M.I. van Berge Henegouwen[1], S.S. Gisbertz[1]. [1]Dept. of Gastrointestinal Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, Veneto Institute of Oncology (IOV IRCCS), Regional Center for Esophageal Disease, Padova, Italy. [3]Dept. of Epidemiology, Amsterdam UMC (loc. AMC), Department of Medical Psychology, Amsterdam, The Netherlands. [4]Dept. of Medical Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

14.00 Conditional survival in patients with resectable esophageal cancer (p. 62)
E.R.C. Hagens[1], M.L. Feenstra[2], M.I. van Berge Henegouwen[2], M.C.C.M. Hulshof[3], H.W.M. van Laarhoven[4], S.S. Gisbertz[1]. [1]School of Life Sciences, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [3]Dept. of Radiotherapy, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [4]Dept. of Gastrointestinal Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

14.10 C-reactive protein as a marker for anastomotic leakage after esophageal surgery (p. 63)
E.R.C. Hagens[1], W.C. Lam[1], M.I. van Berge Henegouwen[2], W.J. Eshuis[2], W. Lameris[3], S.S. Gisbertz[1]. [1]School of Life Sciences, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [3]School of Engineering, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

14.20 Transthoracic versus Transhiatal esophagectomy for esophageal cancer: a nation-wide propensity score matched cohort analysis (p. 64)
A.C. Mertens, M.C. Kalff, W.J. Eshuis, T.M. van Gulik, M.I. van Berge Henegouwen, S.S. Gisbertz. Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands.

15.00 Theepauze in de expositiehal

Abstractsessie - Nederlandse Vereniging voor Gastrointestinale Chirurgie II **Parkzaal**

Voorzitters : *A. van den Boom en F. Poelmann*

HPB en CRC

15.30 Textbook outcome as a novel quality measure in pancreatic surgery: a nationwide analysis (p. 66)

T.M. Mackay[1], S. van Roessel[1], S. van Dieren[1], G.P. van der Schelling[2], V.B. Nieuwenhuijs[3], K. Bosscha[4], E. van der Harst[5], R.M. van Dam[6], M.S.L. Liem[7], S. Festen[8], M.W.J. Stommel[9], D. Roos[10], F. Wit[11], I.Q. Molenaar[12], V.E. de Meijer[13], I.H.J.T. de Hingh[14], H.C. van Santvoort[15], B.A. Bonsing[16], O.R. Busch[1], B. Groot Koerkamp[17], M.G. Besselink[1]. [1]Dept. of Gastrointestinal Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, Amphia Hospital, Breda, The Netherlands. [3]Dept. of Gastrointestinal Surgery, Isala, Zwolle, The Netherlands. [4]Dept. of Gastrointestinal Surgery, Jeroen Bosch Hospital, Den Bosch, The Netherlands. [5]Dept. of Gastrointestinal Surgery, Maasstad Hospital, Rotterdam, The Netherlands. [6]Dept. of Gastrointestinal Surgery, Maastricht UMC+, Maastricht, The Netherlands. [7]Dept. of Gastrointestinal Surgery, MST, Twente, The Netherlands. [8]Dept. of Gastrointestinal Surgery, OLVG, Amsterdam, The Netherlands. [9]Dept. of Gastrointestinal Surgery, RadboudUMC, Nijmegen, The Netherlands. [10]Dept. of Gastrointestinal Surgery, Reinier de Graaf, Delft, The Netherlands. [11]Dept. of Gastrointestinal Surgery, Tjongerschans, Heerenveen, The Netherlands. [12]Dept. of Gastrointestinal Surgery, UMCU, Utrecht, The Netherlands. [13]Dept. of Gastrointestinal Surgery, UMCG, Groningen, The Netherlands. [14]Dept. of Gastrointestinal Surgery, Catharina Hospital, Eindhoven, The Netherlands. [15]Dept. of Gastrointestinal Surgery, St. Antonius Hospital, Nieuwegein, The Netherlands. [16]Dept. of Gastrointestinal Oncology, LUMC, Leiden, The Netherlands. [17]Dept. of Gastrointestinal Surgery, EMC, Rotterdam, The Netherlands. On behalf of the Dutch Pancreatic Cancer Group.

15.40 Predicting the risk of not receiving adjuvant chemotherapy after pancreatic cancer surgery: a nationwide analysis (p. 67)

T.M. Mackay[1], F.J. Smits[2], D. Roos[3], B.A. Bonsing[4], K. Bosscha[5], O.R. Busch[1], G.J. Creemers[6], R.M. van Dam[7], C.H.J. van Eijck[8], M.F. Gerhards[9], J.W.B. de Groot[10], B. Groot Koerkamp[8], N. Haj Mohammad[11], E. van der Harst[12], I.H.J.T. de Hingh[13], M.Y.V. Homs[14], G. Kazemier[15], M.S.L. Liem[16], V.E. de Meijer[17], I.Q. Molenaar[2], V.B. Nieuwenhuijs[18], H.C. van Santvoort[19], G.P. van der Schelling[20], M.W.J. Stommel[21], A.J. ten Tije[22], J. de Vos-Geelen[23], F. Wit[24], J.W. Wilmink[25], H.W. van Laarhoven[25], M.G. Besselink[1]. [1]Dept. of Gastrointestinal Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, UMCU, Utrecht, The Netherlands. [3]Dept. of Gastrointestinal Surgery, Reinier de Graaf, Delft, The Netherlands. [4]Dept. of Gastrointestinal Oncology, LUMC, Leiden, The Netherlands. [5]Dept. of Gastrointestinal Surgery, Jeroen Bosch Hospital, Den Bosch, The Netherlands. [6]Dept. of Gastrointestinal Oncology, Catharina Hospital, Eindhoven, The Netherlands. [7]Dept. of Gastrointestinal Surgery, Maastricht UMC+, Maastricht, The Netherlands. [8]Dept. of Gastrointestinal Surgery, EMC, Rotterdam, The Netherlands. [9]Dept. of Gastrointestinal Surgery, OLVG, Amsterdam, The Netherlands. [10]Dept. of Gastrointestinal Oncology, Isala, Zwolle, The Netherlands. [11]Dept. of Gynaecologic Oncology, UMCU, Utrecht, The Netherlands. [12]Dept. of Gastrointestinal Surgery, Maasstad Hospital, Rotterdam, The Netherlands. [13]Dept. of Gastrointestinal Surgery, Catharina Hospital, Eindhoven, The Netherlands. [14]Dept. of Gastrointestinal Oncology, EMC, Rotterdam, The Netherlands. [15]Dept. of Gastrointestinal Surgery, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [16]Dept. of Gastrointestinal Surgery, MST, Twente, The Netherlands. [17]Dept. of Gastrointestinal Surgery, UMCG, Groningen, The Netherlands. [18]Dept. of Gastrointestinal Surgery, Isala, Zwolle, The Netherlands. [19]Dept. of Gastrointestinal Surgery, St. Antonius Hospital, Nieuwegein, The Netherlands. [20]Dept. of Gastrointestinal Surgery, Amphia Hospital, Breda, The Netherlands. [21]Dept. of Gastrointestinal Surgery, RadboudUMC, Nijmegen, The Netherlands. [22]Dept. of Gastrointestinal Oncology, Amphia Hospital, Breda, The Netherlands. [23]Dept. of Gastrointestinal Oncology, Maastricht UMC+, Maastricht, The Netherlands. [24]Dept. of Gastrointestinal Surgery, Tjongerschans, Heerenveen, The Netherlands. [25]Dept. of Gastrointestinal Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. On behalf of the Dutch Pancreatic Cancer Group.

15.50 Transcriptomic profiles of peroperative anastomotic samples of patients developing colorectal anastomotic leakage show a distinct signature (p. 68)

J.B. van Praagh[1], P. Olinga[1], J.J. de Haan[2], W.B. Nagengast[3], R.S.N. Fehrmann[2], K. Havenga[1]. [1]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Medical Oncology, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Gastroenterology, University Medical Center Groningen, Groningen, The Netherlands.

16.00 Incidence, risk factors, treatment and survival of ovarian metastases from colorectal origin: a Dutch population-based study (p. 69)
C. Bakkers[1], R. van der Meer[2], R. Roumen[2], V. Lemmens[3], R. Lurvink[1], F. van Erning[4], I. de Hingh[1]. [1]Dept. of Surgery, Catharina Hospital Eindhoven, Eindhoven, The Netherlands. [2]Dept. of Surgery, Maxima Medical Centre, Eindhoven, The Netherlands. [3]Dept. of Epidemiology, IKNL, Eindhoven, The Netherlands. [4]Dept. of Gastrointestinal Oncology, IKNL, Eindhoven, The Netherlands.

16.10 The effect of neoadjuvant short-course radiotherapy and delayed surgery versus chemoradiation on postoperative outcomes in advanced rectal cancer patients: a propensity score matched audit-based study (p. 70)
S. Hoendervangers[1], C.L. Sparreboom[2], M.P.W. Intven[1], J.F. Lange[3], H.M. Verkooijen[1], P.G. Doornebosch[3], W.M.U. van Grevenstein[4]. [1]Dept. of Radiation Oncology, UMCU, Utrecht, The Netherlands. [2]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Surgery, IJsselland Ziekenhuis, Capelle a/d IJssel, The Netherlands. [4]Dept. of Surgery, UMCU, Utrecht, The Netherlands. On behalf of the Dutch ColoRectal Audit.

16.20 Safety of Same-Day Discharge after Appendectomy: a Systematic Review. (p. 71)
E.M.L. de Wijkerslooth[1], J.M. Bakas[1], A.L. van den Boom[2], B.P.L. Wijnhoven[1]. [1]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Surgery, Universitair Medisch Centrum Groningen, Groningen, The Netherlands.

16.30 Psychological distress and quality of life following positive faecal occult blood testing in colorectal cancer screening (p. 72)
N.C.A. Vermeer[1], M.J.M. van der Valk[2], H.S. Snijders[3], H.F.A. Vasen[4], A. Gerritsen-van der Hoop[5], O.R. Guicherit[6], G.J. Liefers[2], C.J.H. van de Velde[2], A.M. Stiggelbout[7], K.C.M.J. Peeters[1]. [1]Dept. of Gastrointestinal Surgery, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands. [3]Dept. of Gastrointestinal Surgery, Groene Hart ziekenhuis, Gouda, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [5]Dept. of Gastroenterology, Keizer Clinic, Den Haag, The Netherlands. [6]Dept. of Surgery, Haaglanden Medical Center, Den Haag, The Netherlands. [7]Dept. of Biomedical Data Sciences, Leiden University Medical Center, Leiden, The Netherlands.

16.40 Intestinal motility distal of a deviating ileostomy after rectal resection with the construction of a primary anastomosis: results of the prospective COLO-MOVE study. (p. 73)
T.A. Burghgraef[1], F.J. Amelung[2], P.M. Verheijen[1], I.A.M.J. Broeders[1], E.C.J. Consten[1]. [1]Dept. of Surgery, Meander Medisch Centrum, Amersfoort, The Netherlands. [2]Dept. of Surgery, Universitair Medisch Centrum, Utrecht, The Netherlands.

17.00 Plenaire sessie in de Brabantzaal

18.15 Congresborrel expositiehal

Seniorenprogramma — Zaal 58

12.00	Ontvangst en lunch tot 13.00 in het Uithof Restaurant (gele zone)
Voorzitters:	*J.F.W.M. Bartelsman en H. Festen*
13.00	Drugrepositioning in gastroenterology *Prof. dr. C.C.J. Mulder, MDL-arts, Amsterdam UMC (loc. VUmc)*
13.30	Over mensen en muizen: nauwelijks verschil *Prof. dr. J. Offerhaus, patholoog*
14.00	Glamour – Frustration – The Ideal World *Prof. dr. G. Tytgat, MDL-arts*
14.30	Einde programma
15.00	Theepauze
15.30	Vervolgprogramma in diverse zalen.
18.15	Congresborrel expositiehal

Meet the Expertsessie — Zaal 80

10.00 – 11.00 Sessie I
13.00 – 14.00 Sessie II

Thema: Obstructie CRC

Deze sessies – waarvoor tevoren moet worden ingeschreven - wordt verzorgd door
Sessie I *Dr. E. Consten en Dr. F. ter Borg*
Sessie II *Dr. F. ter Borg en Dr. P. Tanis*

MLDS bijeenkomst — Zaal 80

Sessie rond koers en strategie

14.00	Een interactieve sessie: *Hoe zetten we samen in Nederland de spijsvertering op de kaart?* *Denk mee over de toekomst van MDL-Nederland*
15.30	Einde programma

Abstractsessie – Secte Gastrointestinale Oncologie **Zaal 80**

Voorzitters: *J. van Dieren en V.M.C.W. Spaander*

15.30 State of the art lecture
Prof. dr. G.L. Beets, Chirurg, NKI-AVL, Amsterdam

16.00 Long term follow-up of rectal cancer patients with a complete response followed in a wait-and-see approach, is there an increased risk for metastasis? (p. 74)
H.E. Haak[1], M.E. van der Sande[1], D.M.J. Lambregts[2], R.G.H. Beets-Tan[2], J. Melenhorst[3], G.L. Beets[1], M. Maas[2]. [1]Dept. of Surgery, Netherlands Cancer Institute - Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [2]Dept. of Radiology, Netherlands Cancer Institute - Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [3]Dept. of Surgery, Maastricht University Medical Centre, Maastricht, The Netherlands. On behalf of the Dutch Watch-and-Wait Consortium.

16.10 Highly variable follow-up in patients who refrain from additional surgery after endoscopic resection of a high-risk T1 colorectal carcinoma in the Netherlands. (p. 75)
K.M. Gijsbers[1], W. de Graaf[2], L.M.G. Moons[3], F. ter Borg[1]. [1]Dept. of Gastroenterology and Hepatology, Deventer Ziekenhuis, Deventer, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, UMCU, Utrecht, The Netherlands. On behalf of the T1 CRC working group.

16.20 Performance of proposed algorithms for establishing risk of adverse outcome in T1 colorectal carcinoma (p. 76)
K.J.C. Haasnoot[1], L. van der Schee[1], S.G. Elias[2], Y. Backes[1], A.M. van Berkel[3], F. Boersma[4], F. ter Borg[5], K.M. Gijsbers[1], K. Kessels[6], R. Schrauwen[7], B.W.M. Spanier[8], J. Terhaar sive Droste[9], W.H. de Vos tot Nederveen Cappel[10], F.P. Vleggaar[1], M.M. Laclé[11], L.M.G. Moons[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept. Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Noordwest Hospital Group, Alkmaar, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Gelre Hospital, Apeldoorn, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Deventer Hospital, Deventer, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Sint Antonius Hospital, Utrecht, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Bernhoven, Uden, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Rijnstate, Arnhem, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Hospital, 's Hertogenbosch, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Isala Clinics, Zwolle, The Netherlands. [11]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. On behalf of the Dutch T1 CRC working group.

16.30 The sensitizing anti-tumor effect of interferon-bèta to gemcitabine treatment in human pancreatic cancer cells in vitro (p. 77)
A. Blaauboer[1], P.M. van Koetsveld[2], C.H.J. van Eijck[1], L.J. Hofland[3]. [1]Dept. of Surgery, Erasmus Medical Center, Rotterdam, The Netherlands. [2]Dept. of Internal Medicine, Erasmus Medical Center, Rotterdam, The Netherlands. [3]1st. Dept. of Internal Medicine, Erasmus Medical Center, Rotterdam, The Netherlands.

16.40 ARX, a novel biomarker for metastatic risk in pancreatic neuroendocrine tumors can be determined in endoscopic ultrasound fine needle aspiration. A call for further validation. (p. 78)
W.M. Hackeng[1], F.H.M. Morsink[1], G.J.A. Offerhaus[1], L.M.G. Moons[2], K.M.A. Dreijerink[1], L.A.A. Brosens[1]. [1]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept. of Gastroenterology, University Medical Center Utrecht, Utrecht, The Netherlands.

16.50 Methodology of Pancreatic Juice Collection from the Duodenum for Biomarker

Discovery and Early detection of Pancreatic Cancer (p. 79)
I.J.M. Levink[1], K. Nesteruk[1], D.I. Visser[1], A.M. Sieuwerts[2], C.J.C. Fernandez[1], M.P.M.H. Jansen[2], M.P. Peppelenbosch[1], D.L. Cahen[1], G.M. Fuhler[1], M.J. Bruno[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus Medisch Centrum, Rotterdam, The Netherlands. [2]Dept. of Medical Oncology, Erasmus Medisch Centrum, Rotterdam, The Netherlands.

17.00 Plenaire sessie in de Brabantzaal

18.15 Congresborrel expositiehal

Abstractsessie – Sectie Inflammatoire Darmziekten I — Zaal 81

Voorzitters : *M. Lutgens en C.E.G.M. Spooren*

09.45 Ledenvergadering Sectie Inflammatoire Darmziekten

10.00 Korte inleiding Microbioom
Dr. D.M.A.E. Jonkers, onderzoeker, MUMC, Maastricht

10.10 Mycobacterium avium subspecies paratuberculosis seropositivity is associated with a more complicated disease course in both Crohn's disease and ulcerative colitis and might be linked to immunomodulating genes (p. 80)
K.W.J. van der Sloot[1], M.D. Voskuil[1], M.C. Visschedijk[1], H.M. van Dullemen[1], E.A.M. Festen[1], C. van Leer - Buter[1], B.Z. Alizadeh[2], R.K. Weersma[1], H. van Goor[3], A. Dinkla[4], A.P. Koets[4], G. Dijkstra[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Epidemiology, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Pathology, University Medical Center Groningen, Groningen, The Netherlands. [4]Dept. of Microbiology and Systems Biology, Wageningen Bioveterinary Research, Lelystad, The Netherlands.

10.20 Bacteroides fragilis is more prevalent in Crohn's disease exacerbations while strengthening the intestinal epithelial barrier in a strain-dependent manner (p. 81)
H.E.F. Becker[1], L. Bervoets[2], C. Jamin[2], F.R.M. Stassen[2], A.A.M. Masclee[1], P.H.M. Savelkoul[2], J. Penders[2], D.M.A.E. Jonkers[1]. [1]Dept. of Gastroenterology and Hepatology, Maastricht University, Maastricht, The Netherlands. [2]Dept. of Medical Microbiology, Maastricht University, Maastricht, The Netherlands.

10.30 Systemic iron deficiency is associated with activation of the HIF-1a pathway in the intestinal mucosa of patients with Inflammatory Bowel Disease (p. 82)
R.R. Fagundes, A.R. Bourgonje, R. Barbieri, B.H. Jansen, K.N. Faber, G. Dijkstra. Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands.

MLDS voordracht

10.40 Activating FXR specifically in the liver protects against DSS colitis (p. 83)
N. IJssennagger, K. van Rooijen, S.W.C. van Mil. Dept. of Molecular Cancer Research, UMCU, Utrecht, The Netherlands.

10.50 Levels of serum free thiols are superior to fecal calprotectin in predicting endoscopic disease activity in Inflammatory Bowel Disease (p. 84)
A.R. Bourgonje[1], R.Y. Gabriëls[1], M.H. de Borst[2], M.L.C. Bulthuis[3], K.N. Faber[1], H. van Goor[3], G. Dijkstra[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Internal Medicine, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Pathology, University Medical Center Groningen, Groningen, The Netherlands.

MLDS voordracht

11.00 Validation of biomarkers for Crohn's disease using peripheral blood cells. (p. 85)
E. Burniol Ruiz[1], J. Verhoeff[2], J.J. Garcia Vallejo[1], G. Bouma[2], R.E. Mebius[1]. [1]Moleculaire Celbiologie en Immunologie, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [2]Dept. of Gastroenterology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands.

11.10 Indefinite dysplasia predicts advanced colorectal neoplasia in patients with inflammatory bowel disease undergoing colonoscopic surveillance (p. 86)
R. Mahmoud[1], S.C. Shah[2], J. Torres[3], D. Castaneda[4], J. Glass[5], J. Elman[4], A. Kumar[4], J. Axelrad[6], N. Harpaz[7], T. Ullman[8], J.F. Colombel[4], B. Oldenburg[1], S.H. Itzkowitz[4]. [1]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Utrecht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Vanderbilt University Medical Center, Nashville, tn, United States of America. [3]Dept. of Surgery, Hospital Beatriz Ângelo, Loures, Portugal. [4]Dept. of Gastroenterology and Hepatology, Icahn School of Medicine at Mount Sinai, New York, United States Of America. [5]Dept. of Internal Medicine, University of Texas Southwestern, Dallas, United States Of America. [6]Dept. of Gastroenterology, Inflammatory Bowel Disease Center, NYU Langone Health, New York, United States Of America. [7]Dept. of Pathology, Icahn School of Medicine at Mount Sinai, New York, United States Of America. [8]Dept. of Internal Medicine, Montefiore Hospital, New York, United States Of America.

11.20 Intestinal stenosis in Crohn's disease show a generalized upregulation of genes involved in collagen processing and recognition that could serve as novel anti-fibrotic drug targets (p. 87)
W.T. van Haaften[1], T. Blokzijl[1], H.S. Hofker[2], P. Olinga[3], G. Dijkstra[1], R.A. Bank[4], M. Boersema[3]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Pharmaceutical Technology and Biopharmacy, University of Groningen, Groningen, The Netherlands. [4]Dept. of Pathology and Medical Biology, University Medical Center Groningen, Groningen, The Netherlands.

11.30 Ledenvergadering NVGE in de Baroniezaal

12.00 Lunch expositiehal

Meet the Expertsessie — Zaal 81

13.00 – 14.00 Sessie II

Thema: Behandeling NASH/NAFLD

Deze sessie – waarvoor tevoren moet worden ingeschreven – wordt verzorgd door
Prof. dr. J.P.H. Drenth, MDL-arts, Radboudumc, Nijmegen
Dr. M.E. Tushuizen, MDL-arts, LUMC, Leiden

Abstractsessie – Nederlandse Vereniging voor Hepatologie II — Zaal 81

Voorzitters : *J.P.H. Drenth en A.J.P. van der Meer*

15.30 MELD score changes and clinical outcome following DAAs in HCV-infected patients with cirrhosis (p. 88)
L.A.P. Krassenburg[1], R. Maan[1], A. Ramji[2], M.P. Manns[3], M. Cornberg[3], H. Wedemeyer[3], N.S. Erler[4], R.J. de Knegt[1], B.E. Hansen[5], H.L.A. Janssen[5], R.A. de Man[1], J.J. Feld[5], A.J. van der Meer[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology, Hepatology and Endocrinoligy, University of British Columbia, Vancouver,

Canada. [3]Dept. of Gastroenterology, Hepatology and Endocrinoligy, Hannover Medical School, Hannover, Germany. [4]Dept. of Biostatistics, Erasmus MC, Rotterdam, The Netherlands. [5]Dept. of Hepatology, Toronto Centre for Liver Disease, University Health Network, Toronto, Canada.

15.40 The observed clinical outcome following DAA-induced SVR among patients with HCV-cirrhosis is better than their predicted outcome without SVR (p. 89)
L.A.P. Krassenburg[1], R. Maan[1], A. Ramji[2], M.P. Manns[3], M. Cornberg[3], H. Wedemeyer[3], N.S. Erler[4], R.J. de Knegt[1], B.E. Hansen[5], H.L.A. Janssen[5], R.A. de Man[1], J.J. Feld[5], A.J. van der Meer[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology, Hepatology and Endocrinoligy, University of British Columbia, Vancouver, Canada. [3]Dept. of Gastroenterology, Hepatology and Endocrinoligy, Hannover Medical School, Hannover, Germany. [4]Dept. of Biostatistics, Erasmus MC, Rotterdam, The Netherlands. [5]Dept. of Hepatology, Toronto Centre for Liver Disease, University Health Network, Toronto, Canada.

15.50 Improved survival prediction and comparison of prognostic models for patients with hepatocellular carcinoma treated with sorafenib (p. 90)
T.A. Labeur[1], S. Berhane[2], J. Edeline[3], J.F. Blanc[4], D. Bettinger[5], T. Meyer[6], J.L.A. van Vugt[7], D.W.G. ten Cate[7], F.A.L.M. Eskens[8], A. Cucchetti[9], O.M. van Delden[10], H.J. Klümpen[11], R.B. Takkenberg[1], P.J. Johnson[12]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Biostatistics, University of Liverpool, Liverpool, United Kingdom. [3]Dept. of Medical Oncology, Centre Eugène Marquis, Rennes, France. [4]Dept. of Hepatology, CHU Hôpital Saint André, Bordeaux, France. [5]Dept. of Medicine, Medical Center University of Freiburg, Freiburg, Germany. [6]Dept. of Medical Oncology, UCL Cancer Institute, London, United Kingdom. [7]Dept. of Surgery, Erasmus MC University Medical Center, Rotterdam, The Netherlands. [8]Dept. of Medical Oncology, Erasmus MC University Medical Center, Rotterdam, The Netherlands. [9]Dept. of Surgery, Alma Mater Studiorum, Bologna, Italy. [10]Dept. of Radiology and Nuclear Medicine, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [11]Dept. of Medical Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [12]Dept. of Molecular and Clinical Cancer Medicine, University of Liverpool, Liverpool, United Kingdom. On behalf of Gastro-intestinal Oncology Center Amsterdam (GIOCA).

16.00 Changes in total and regional liver function after selective internal radiation therapy (SIRT) for hepatocellular carcinoma (p. 91)
T.A. Labeur[1], K.P. Cieslak[2], T.M. van Gulik[2], R.B. Takkenberg[1], S. van der Velden[3], M.G.E.H. Lam[3], H.J. Klümpen[4], R.J. Bennink[5], O.M. van Delden[5]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [3]Dept. of Radiology and Nuclear Medicine, University Medical Center Utrecht, Utrecht, The Netherlands. [4]Dept. of Medical Oncology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [5]Dept. of Radiology and Nuclear Medicine, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. On behalf of Gastro-intestinal Oncology Center Amsterdam (GIOCA).

16.10 Hepatitis B core related antigen levels predict recurrence-free survival in patients with HBV associated early stage hepatocellular carcinoma: results from a Dutch long-term follow-up study (p. 92)
B.J.B. Beudeker[1], G.W. van Oord[1], R.A. de Man[1], C.D.M. Witjes[2], A.A. van der Eijk[3], A. Boonstra[1], M.J. Sonneveld[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Viroscience, Erasmus MC, Rotterdam, The Netherlands.

16.20 Basale battle
Strijd tussen de 3 beste NVH papers om de jaarlijkse prijs

17.00 Plenaire sessie in de Brabantzaal

Videosessie - Sectie Gastrointestinale Endoscopie **Auditorium**

Voorzitters: B.A.J. Bastiaansen en E.J. Schoon

09.30 Een programma rond ingezonden endoscopie video's

11.00 Koffiepauze in de expositiehal

Abstractsessie – Sectie Gastrointestinale Endoscopie **Auditorium**

Voorzitters:

11.30 Prevalence and risk factors for duodenal perforation due to migrated biliary plastic stents (p. 93)
P.M.C. Stassen, D.M. de Jong, J.W. Poley, M.J. Bruno, P.J.F. de Jonge. Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands.

11.40 Nationwide practice and outcome of preoperative biliary drainage using metal or plastic stents in patients with pancreatic ductal adenocarcinoma (p. 94)
A.E.J. Latenstein[1], T.M. Mackay[1], N.C.M. van Huijgevoort[2], B.A. Bonsing[3], M.J. Bruno[4], R.C. Verdonk[5], M.G. Besselink[1], J.E. van Hooft[2]. [1]Dept. of Surgery, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. AMC), Amsterdam, The Netherlands. [3]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Erasmus Medical Center, Rotterdam, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, St Antonius Hospital, Nieuwegein, The Netherlands. On behalf of the Dutch Pancreatic Cancer Group

11.50 Does standard use of propofol-based sedation instead of midazolam and fentanyl improve cannulation rates and complication rates of diagnostic endoscopic retrograde cholangiopancreatography? (p. 95)
L.A. van Kleef[1], P. Honkoop[2]. [1]Dept. of Internal Medicine, Albert Schweitzer Ziekenhuis, Dordrecht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Albert Schweitzer Ziekenhuis, Dordrecht, The Netherlands.

12.00 Cumulative sum analyses guiding improvement of team performance in EUS guided tissue acquisition of solid pancreatic lesions in community hospitals (p. 96)
H.M. Schutz[1], R. Quispel[1], I. Leeuwenburgh[2], L. Hol[3], P. Honkoop[4], I. Schot[5], B.J. Veldt[1], L.M.J.W. van Driel[6], M.J. Bruno[6]. [1]Dept. of Gastroenterology and Hepatology, Reinier de Graaf Hospital, Delft, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Franciscus Gasthuis en Vlietland, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Maasstad Hospital, Rotterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Albert Schweitzer Hospital, Dordrecht, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, IJsselland Hospital, Capelle aan den IJssel, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. On behalf of the QUEST (quality in endosonography team)

12.10 Diagnostic yield and agreement on fine needle specimens from solid pancreatic lesions: comparing the conventional smear technique to liquid-based cytology (p. 97)
P.A. van Riet[1], R. Quispel[2], D.L. Cahen[1], M.C. Snijders-Kruisbergen[3], P. van Loenen[3], N.S. Erler[4], J.W. Poley[1], L. Hol[1], L.M.J. van Driel[1], S. Mulder[2], B.J.V. Veldt[2], I. Leeuwenburgh[5], M.P.G.F. Anten[5], P. Honkoop[6], A.Y. Thijssen[6], M. Hadithi[7], C.E. Fitzpatrick[8], I. Schot[8], J.F. Bergmann[9], A. Bhalla[9], M.J. Bruno[1], K. Biermann[3]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC Rotterdam, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Reinier de Graaf

Ziekenhuis, Delft, The Netherlands. [3]Dept. of Pathology, Erasmus MC Rotterdam, Rotterdam, The Netherlands. [4]Dept. of Biostatistics, Erasmus MC Rotterdam, Rotterdam, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Sint Franciscus Ziekenhuis, Rotterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Albert Schweitzer ziekenhuis, Dordrechts, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Maasstad ziekenhuis, Rotterdam, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, IJsselland ziekenhuis, Rotterdam, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, HAGA ziekenhuis, Den Haag, The Netherlands.

12.20 Long-term overall survival after endoscopic mucosal resection for esophageal high-grade dysplasia and early adenocarcinoma: a nationwide registry linkage study (p. 98)

A. Al-Kaabi[1], R.S. van der Post[2], R.H.A. Verhoeven[3], P.D. Siersema[1]. [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Pathology, Radboudumc, Nijmegen, The Netherlands. [3]Integraal Kankercentrum Nederland (IKNL), Netherlands Cancer Registry, Utrecht, The Netherlands. On behalf of the Barrett Expertise Centra - Nederland

12.30 Long-term outcomes after endoscopic treatment for Barrett's neoplasia in 641 patients in a centralized care setting in the Netherlands: recurrent neoplasia is rare and neosquamous biopsies do not contribute to its detection. (p. 99)

S.N. van Munster[1], E.A. Nieuwenhuis[1], B.L.A.M. Weusten[2,3], A. Alvarez Herrero[2], A. Bogte[3], A. Alkhalaf[4], B.E. Schenk[4], E. Schoon[5], W. Curvers[5], A.D. Koch[6], S.E.M. van de Ven[6], P.J. de Jonge[6], T.J. Tang[11], W.B. Nagengast[7], F.T.M. Peters[7], J. Westerhof[7], M. Houben[8], P. Siersema[9], F. van Delft[10], N. van Heel[10], R.E. Pouw[1], J.J. Bergman[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Antonius Ziekenhuis, Nieuwegein, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Isala ziekenhuis, Zwolle, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Catharina Ziekenhuis, Eindhoven, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Erasmus Ziekenhuis, Rotterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Universitair Medisch Centrum Groningen, Groningen, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Haga ziekenhuis, Den Haag, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Radboud Ziekenhuis, Nijmegen, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Gelre Ziekenhuis, Apeldoorn, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, IJsselland Ziekenhuis, Capelle aan den IJssel, The Netherlands.

12.40 Individual's preferences and predicted uptake for esophageal cancer screening tests - a labeled discrete choice experiment (p. 100)

Y. Peters, M. van Maasakker, P.D. Siersema. Dept. of Gastroenterology and Hepatology, Radboud UMC, Nijmegen, The Netherlands.

12.50 Visual estimation of colorectal polyp size in a colon model (p. 101)

K.R. Beukema[1], J. Simmering[1], R. Quispel[2], S. John[3], M. Brusse-Keizer[4], P.B. Mensink[1]. [1]Dept. of Gastroenterology, Medisch Spectrum Twente, Enschede, The Netherlands. [2]Dept. of Gastroenterology, Reinier de Graaf Gasthuis, Delft, The Netherlands. [3]Dept. of Gastroenterology, Gold Coast University Hospital, Southport, Australia. [4]Dept. of Biostatistics, Medisch Spectrum Twente, Enschede, The Netherlands.

13.00 Lunch expositiehal

Symposium – Nederlandse Vereniging voor Gastroenterologie **Auditorium**

Voorzitter: *P.D. Siersema en L.P.S. Stassen*

Symposium: En nu publiceren

14.00 Een goed abstract schrijven: punten van belang
Prof. dr. C.J. van der Woude, MDL-arts, Erasmus MC, Rotterdam

14.15 Omgaan met afwijzingen
Dr. V.M.C.W. Spaander, MDL-arts, Erasmus MC, Rotterdam

14.30 Welk tijdschrijft voor mijn onderzoek: betekenis van impact en citaties
Prof. dr. P.D. Siersema, MDL-arts, Radboudumc, Nijmegen

14.45 Een aanbiedingsbrief: een overbodige luxe?
Prof. dr. J.P.H. Drenth, MDL-arts, Radboudumc, Nijmegen

15.00 Einde programma

Symposium – Secties IBD en Experimentele Gastroenterologie **Baroniezaal**

Voorzitters: A.E. van der Meulen en M. Löwenberg

The healing pathway

10.00 Inflammatory pathways in IBD, targets for new therapies
Dr. M.E. Wildenberg, Tytgat Instituut, Amsterdam UMC (loc. AMC), Amsterdam

10.30 New and emerging therapies for IBD, where are we now?
M. Löwenberg, MDL-arts, Amsterdam UMC (loc. AMC), Amsterdam

11.00 Pauze

Symposium – Benigne levertumoren **Parkzaal**

Voorzitters: *V.E. de Meijer*

09.30 Opening
Dr. V.E. de Meijer, chirurg, UMCG, Groningen

09.35 Introductie en overzicht van het hepatocellulair adenoom
Dr. F.J.C. Cuperus, MDL-arts, UMCG, Groningen

10.00 MRI Primovist: de heilige graal voor diagnostiek van leverhaarden?
Dr. M.G.J. Thomeer, radioloog, Erasmus MC, Rotterdam

10.25 De behandeling en het management van biliaire en choledochuscysten in Noord-Europa
Dr. M.M.E. Coolsen, chirurg, MUMC+, Maastricht

10.50 Afsluiting
Dr. V.E. de Meijer, chirurg, UMCG, Groningen

11.00 Koffiepauze

Symposium – Multidisciplinair overleg — Parkzaal

Voorzitters : *L.M.G. Moons en L. van Driel*

Het MDO voor het T1-rectumcarcinoom en pancreascarcinoom

11.30 Casus presentatie T1-rectumcarcinoom
K. Haasnoot, PhD kandidaat T1 werkgroep, UMCU, Utrecht

MDL-chirurg
P. Doornebosch, chirurg, IJsselland ziekenhuis, Capelle aan de IJssel

Patholoog
M. Laclé, patholoog, UMCU, Utrecht

Radioloog
K. Horsthuis, radioloog, Amsterdam UMC (loc. VUmc), Amsterdam

12.15 Casus presentatie pancreascarcinoom
L. van Driel, MDL-arts, Erasmus MC, Rotterdam

Chirurg
H. Hartog, HPB chirurg, Erasmus MC, Rotterdam

Radioloog
K. Horsthuis, Radioloog, Amsterdam UMC (loc. VUmc), Amsterdam

Radiotherapeut
M. Intven, Radiotherapeut-oncoloog, UMCU, Utrecht

Oncoloog
H. Wilmink, Oncoloog, Amsterdam UMC (loc. AMC), Amsterdam

13.00 Lunch expositiehal

Abstractsessie – Sectie Inflammatoire Darmziekten II — Zaal 81

Voorzitters : *A.E. van der Meulen en D.P. van Asseldonk*

11.30 Lifestyle en chronisch ziek
Y. Sijpkens, internist, MC Haaglanden, Den Haag

11.50 High seroconversion rate to trivalent influenza vaccine during ustekinumab treatment in Crohn's disease: results from a prospective cohort study (p. 102)
R.L. Goetgebuer[1], L. Doornekamp[2], G. Fuhler[1], M. Peppelenbosch[1], C.J. van der Woude[1], E.C.M. van Gorp[2,3], A.C. de Vries[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Viroscience, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Internal Medicine, Erasmus MC, Rotterdam, The Netherlands.

12.00 High disease burden drives indirect costs in inflammatory bowel disease: the WORK-IBD study (p. 103)

S. van Gennep[1], S.W. Evers[1], N.K. de Boer[2], S.T. Rietdijk[3], M.E. Gielen[4], K.B. Gecse[1], M. Duijvestein[1], C.Y. Ponsioen[1], G.R. D'Haens[1], A.G.E.M. de Boer[5], M. Löwenberg[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, OLVG, Amsterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Amstelland Ziekenhuis, Amstelveen, The Netherlands. [5]Coronel Institute of Occupational Health, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands.

12.10 Gut feelings: Implementation and Validation of Participatory Narrative Inquiry (PNI) to improve quality of life and explore the role of diet and life style factors in Inflammatory Bowel Disease (IBD) patients. (p. 104)

M.E. Tebbens[1], T. Bezema[2], J.A. Bosch[3], P.C.F. Stokkers[4], G. Bouma[5], M. Duijvestein[5,6], A.D. Kraneveld[7], T. Markus-de Kwaadsteniet[8], A.A. te Velde[1]. [1]Tytgat Institute for Liver and Intestinal Research, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands. [2]Stichting Immunowell, Utrecht, The Netherlands, [3]Dept. of Clinical Psychology, University of Amsterdam, Amsterdam, The Netherlands; Dept. of Medical Psychology, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, OLVG, Amsterdam, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands. [7]Division of Pharmacology, Utrecht Institute for Pharmaceutical Sciences, Faculty of Science, University of Utrecht, Utrecht, The Netherlands. [8]Crohn en Colitis Ulcerosa Vereniging Nederland, Woerden, The Netherlands.

12.20 Riboflavin suppresses inflammation and attenuates Crohn's disease symptoms (RISE-UP study) (p. 105)

A.R. Bourgonje[1], J.Z.H. Von Martels[1], M.A.Y. Klaassen[1], H.A.A. Alkhalifah[2], M. Sadaghian Sadabad[2], A. Vich Vila[1], R. Gacesa[1], R.Y. Gabriëls[1], R.E. Steinert[3], B.H. Jansen[1], M.L.C. Bulthuis[4], H.M. van Dullemen[1], M.C. Visschedijk[1], E.A.M. Festen[1], R.K. Weersma[1], P. de Vos[4], H. van Goor[4], K.N. Faber[1], H.J.M. Harmsen[2], G. Dijkstra[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Medical Microbiology, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Nutrition and Health over the Lifecourse, DSM Nutritional Products Ltd, Basel, Switzerland. [4]Dept. of Pathology, University Medical Center Groningen, Groningen, The Netherlands.

12.30 Reverse switching to originator infliximab in patients with inflammatory bowel diseases (p. 106)

S. Mahmmod[1], J.P.D. Schultheiss[1], N. Mahmmod[2], A.C.I.T.L Tan[3], G. Dijkstra[4], H.H. Fidder[1]. [1]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Utrecht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, St. Antonius Ziekenhuis, Nieuwegein, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Canisius Wilhelmina Ziekenhuis, Nijmegen, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, UMC Groningen, Groningen, The Netherlands.

12.40 The Relation between Infliximab Trough Levels and Disease Activity in Children with Inflammatory Bowel Disease (p. 107)

E.C.J. Merten[1], E.E.M. de Vries[2], R.H.J. Houwen[2], I.A. Bertrams[1], J.M. Stapelbroek[3], C. van der Feen[4], L.J.J. Derijks[5], L. van Onzenoort[1]. [1]Dept. of Pediatrics, Máxima Medical Centre Veldhoven, Veldhoven, The Netherlands. [2]Dept. of Gastroenterology, Wilhelmina Children's Hospital, Utrecht, The Netherlands. [3]Dept. of Pediatrics, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Pediatrics, Jeroen Bosch Hospital, 's Hertogenbosch, The Netherlands. [5]Dept. of Clinical Pharmacy, Máxima Medical Centre Veldhoven, Veldhoven, The Netherlands.

12.50 Improvement of fatigue and quality of life in patients with quiescent inflammatory bowel disease after a personalised exercise program: a pilot experience (p. 108)
L.W. van Erp[1], B. Roosenboom[1], P. Komdeur[2], W. Dijkstra-Heida[1], J. Wisse[1], C.S. Horjus Talabur Horje[1], C.S. Liem[3], R.E.H. van Cingel[2], P.J. Wahab[1], M.J.M. Groenen[1]. [1]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Crohn & Colitis Centre, Arnhem, The Netherlands. [2]Sports Medical Centre Papendal, Arnhem, The Netherlands. [3]Dept. of Physiotherapy, Formupgrade Sportcentre, Arnhem, The Netherlands.

13.00 Lunch expositiehal

Abstractsessie – NVGE — Zaal 81

Voorzitters : *A.E. van der Meulen en D.P. van Asseldonk*

In deze abstractsessie worden abstracts gepresenteerd die zijn ingezonden voor de Secties Gastrointestinale Endoscopie, Neurogastroenterologie en Motiliteit en de Nederlandse Vereniging voor Gastroenterologie

14.00 Endoscopic full-thickness resection is feasible for T1 colorectal cancers - a Dutch nation-wide prospective cohort study (p. 109)
L.W. Zwager[1], B.A.J. Bastiaansen[1], B.W. van der Spek[2], G.D.N. Heine[2], M.E.S. Bronzwaer[1], K.J.C. Haasnoot[2], H. van der Sluis[3], L.E. Perk[4], J.J. Boonstra[5], S.T. Rietdijk[6], M.P. Schwartz[7], H.J. Wolters[8], B.L.A.M. Weusten[9], L.P.L. Gilissen[10], W.R. te Hove[11], W.B. Nagengast[12], F.C. Bekkering[13], J.S. Terhaar sive Droste[14], P. Fockens[1], E. Dekker[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Noordwest Hospital Group, Alkmaar, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Isala Clinics, Zwolle, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Haaglanden Medical Center, The hague, The Netherlands. [5]Dept. of Gastro-enterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, OLVG, Amsterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Meander Medical Center, Amersfoort, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Martini Hospital, Groningen, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Alrijne Medical Group, Leiden, The Netherlands. [12]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [13]Dept. of Gastroenterology and Hepatology, IJsselland Hospital, Capelle aan den IJssel, The Netherlands. [14]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Hospital, 's Hertogenbosch, The Netherlands. On behalf of the Dutch eFTR Group.

14.10 Adjuvant full-thickness resection for uncertain radicality of an endoscopically removed T1 colorectal cancer without other risk factors for lymph node metastasis: is it safe from an oncological point of view? (p. 110)
K.M. Gijsbers[1], L.M.G. Moons[2], Y. Backes[2], A.M.C. Baven-Pronk[3], A.M. van Berkel[4], T. Bisseling[5], F. Boersma[6], P.R. Bos[7], L.S.M. Epping-Stippel[8], J.M.J. Geesing[9], W. de Graaf[10], J.N. Groen[11], K.J.C. Haasnoot[2], K. Kessels[12], M.M. Laclé[13], Z. Post[1], L. van der Schee[2], R.W.M. Schrauwen[14], M.P. Schwartz[15], T.J. Seerden[16], R. Slangen[17], B.W.M. Spanier[18], T.J. Tang[19], J.S. Terhaar Sive Droste[20], R. Veenstra[21], F. Vleggaar[2], W.H. de Vos tot Nederveen Cappel[22], E.M. Witteman[23], F.H.J. Wolfhagen[24], F. ter Borg[1]. [1]Dept. of Gastroenterology and Hepatology, Deventer Ziekenhuis, Deventer, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Utrecht, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Groene Hart Ziekenhuis, Gouda, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Noordwest Ziekenhuis, Alkmaar, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Gelre Ziekenhuis, Apeldoorn, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Ziekenhuis Gelderse Vallei, Ede, The Netherlands. [8]Dept. of Gastroenterology and Hepatology,

Maasziekenhuis Pantein, Boxmeer, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Diakonessenhuis, Utrecht, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, ErasmusMC, Rotterdam, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, St Jansdal, Harderwijk, The Netherlands. [12]Dept. of Gastroenterology and Hepatology, St. Antonius, Nieuwegein, The Netherlands. [13]Dept. of Pathology, UMC Utrecht, Utrecht, The Netherlands. [14]Dept. of Gastroenterology and Hepatology, Bernhoven Ziekenhuis, Uden, The Netherlands. [15]Dept. of Gastroenterology and Hepatology, Meander MC, Amersfoort, The Netherlands. [16]Dept. of Gastroenterology and Hepatology, Amphia Ziekenhuis, Breda, The Netherlands. [17]Dept. of Gastroenterology and Hepatology, Hagaziekenhuis, Den Haag, The Netherlands. [18]Dept. of Gastroenterology and Hepatology, Rijnstate Ziekenhuis, Arnhem, The Netherlands. [19]Dept. of Gastroenterology and Hepatology, IJsselland Ziekenhuis, Capelle aan den IJssel, The Netherlands. [20]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands. [21]Dept. of Gastroenterology and Hepatology, Martini Ziekenhui, Groningen, The Netherlands. [22]Dept. of Gastroenterology and Hepatology, Isala, Zwolle, The Netherlands. [23]Dept. of Gastroenterology and Hepatology, CWZ, Nijmegen, The Netherlands. [24]Dept. of Gastroenterology and Hepatology, Albert Schweitzer Ziekenhuis, Dordrecht, The Netherlands. On behalf of the T1 CRC working group.

14.20 Intermuscular dissection for deep submucosal invasive cancer in the rectum (p. 111)

L.M.G. Moons[1], B.A.J. Bastiaansen[2], F.P. Vleggaar[3], L.R.H. de Wijkerslooth[4], J.N. Groen[5], H. van Soest[6], P.R. Bos[7], J.S. Terhaar Sive Droste[8], M.C. Richir[9], G.A.J. Offerhaus[10], K. Thurnau[11], W.L. Hazen[12], R.W.M. Schrauwen[13], M.M. Lacle[10], P. Didden[1]. [1]Dept. of Endoscopy, UMC Utrecht, Utrecht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Utrecht, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Isala Klinieken, Zwolle, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, St. Jansdal, Harderwijk, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Medisch Centrum Haaglanden, Den Haag, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Gelderse Vallei, Ede-wageningen, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands. [9]Dept. of Surgery, UMC Utrecht, Utrecht, The Netherlands. [10]Dept. of Pathology, UMC Utrecht, Utrecht, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Zorggroep Twente, Almelo, The Netherlands. [12]Dept. of Gastroenterology and Hepatology, Elizabeth Tweesteden Ziekenhuis, Tilburg, The Netherlands. [13]Dept. of Gastroenterology and Hepatology, Bernhoven, Uden, The Netherlands. On behalf of the Dutch T1 CRC working group.

14.30 Factors involved in endoscopists' choice for prophylactic clipping after EMR, a discrete choice experiment. (p. 112)

A.S. Turan[1], P. Didden[2], P.D. Siersema[1], E.J.M. van Geenen[1]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands.

14.40 A complete colonoscopy is necessary for patients with appendiceal serrated polyps: results of a nationwide pathology database (p. 113)

Y.J. van Herwaarden[1], A. Madani[2], R.S. van der Post[3], V.E.E.P. Lemmens[2], L.I.H. Overbeek[4], I.D. Nagtegaal[3]. [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Public Health, Erasmus University Medical Centre, Rotterdam, The Netherlands. [3]Dept. of Pathology, Radboudumc, Nijmegen, The Netherlands. [4]Dept. of Pathology, Foundation PALGA, Houten, The Netherlands.

14.50 Substantial and sustained improvement of serrated polyp detection after a simple educational intervention - Results from a prospective controlled trial (p. 114)

A.G.C. Bleijenberg[1], N. van Lelyveld[2], M. Bargeman[3], J.J. Koornstra[4], Y. van Herwaarden[5], M. Spaander[6], S. Sanduleanu[7], B.A.J. Bastiaansen[1], E. Schoon[8], M. van Leerdam[9], J.E.G. IJspeert[1], E. Dekker[1]. [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, St. Antonius hospital, Nieuwegein, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Medisch Spectrum Twente, Enschede, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, University Medical Center

Groningen, Groningen, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Maastricht UMC+, Maastricht, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, St. Catharina hospital, Eindhoven, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Netherlands Cancer Institute, Amsterdam, The Netherlands.

15.00 Educating dyspeptic patients reduces need for upper gastrointestinal endoscopy with > 40%: a multi-center randomized controlled trial (p. 115)

J.J. de Jong[1], M.A. Lantinga[2], R.C. Scheffer[2], A.C.I.T.L Tan[3], M. Aquarius[4], J.J. Uil[5], D. Keszthelyi[6], A.A.M. Masclee[6], J.P.H. Drenth[1]. [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, 's hertogenbosch, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Canisius Wilhelmina Ziekenhuis, Nijmegen, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Viecuri Medisch Centrum, Venlo, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Ziekenhuis Gelderse Vallei, Ede, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center, Maastricht, The Netherlands.

15.10 TRPM8 and TRPA1 mRNA expression in colonic biopsies of patients with irritable bowel syndrome and healthy volunteers. (p. 116)

Z.Z.R.M. Weerts[1], M. Peiris[2], P. Xu[1], L. Vork[1], E. Wilms[1], M. Elizalde[1], D.M.A.E. Jonkers[1], L.A. Blackshaw[2], A.A.M. Masclee[1], D. Keszthelyi[1]. [1]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center, Maastricht, The Netherlands. [2]Wingate Institute of Neurogastroenterology, Blizard Institute, Barts and The London School of Medicine and Dentistry, London, United Kingdom.

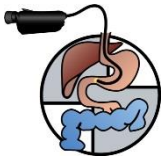
15.20 Smartphone-based symptom assessment using the Experience Sampling Method provides insight into patient specific stress-abdominal pain interaction in Irritable Bowel Syndrome (p. 117)

L. Vork[1], D. Keszthelyi[1], S. van Kuijk[2], E. Quetglas[3], Z. Mujagic[1], C. Leue[4], J. Kruimel[1], A. Masclee[1]. [1]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center, Maastricht, The Netherlands. [2]Dept. of Clinical Epidemiology and Medical Technology Assessment, Maastricht University Medical Center, Maastricht, The Netherlands. [3]Dept. of Medical Intelligence, Grünenthal GmBH, Aachen, Germany. [4]Dept. of Psychiatry, Maastricht University Medical Center, Maastricht, The Netherlands. On behalf of the IBS-ESM study group.

15.30 Einde programma

V&VN ochtendprogramma I **Brabantzaal**

Beroepsvereniging van zorgprofessionals
Maag Darm Lever



Voorzitters : *Mw. T.A. Korpershoek*

Thema: MDL algemeen

09.15 Welkom
Mw. T.A. Korpershoek, voorzitter V&VN MDL.

09.20 Maar binnenkort stop ik
D.P. Herdes, Verslavingsarts KNMG, Parnassiagroep

09.40 Enteral access, wanneer voeding via de normale route niet kan
Dr. J.F. Monkelbaan, MDL-arts, UMCU, Utrecht

10.00 Coeliakie
Prof. dr. C.J.J. Mulder, MDL-arts, Amsterdam UMC (loc. VUmc), Amsterdam

10.20 Anemie
J.K. Soekhoe, aios MDL, Erasmus MC, Rotterdam

Abstractsessie V&VN MDL

10.40 – 10.45 Gebruik van glijzijl bij een coloscopie
Mw. T. Boonstra, endoscopieverpleegkundige, Amsterdam UMC (loc. AMC), Amsterdam

10.48 – 10.53 Vroeg opsporing en behandeling van pijn na het plaatsen van een self-expandable slokdarmstent bij incurabele patiënten met kanker: een prospectieve observationele cohort studie
Mw. A. Reijm, verpleegkundig specialist, Erasmus MC, Rotterdam

10.56 – 11.01 De TransitieToets, een kennis vragenlijst, bij adolescenten met een inflammatoire darmziekte (IBD)
Mw. M. van Gaalen, verpleegkundig specialist kinder-MDL, Erasmus MC, Rotterdam
Mw. M. van Pieterson, research verpleegkundige/coördinator, Erasmus MC, Rotterdam

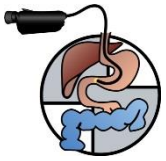
11.04 – 11.09 Improvement of fatigue and quality of life in patients with quiescent inflammatory bowel disease after a personalised exercise program: a pilot experience
Mw. J. Wisse, verpleegkundige specialist, Rijnstate ziekenhuis, Arnhem
Mw. W. Dijkstra – Heida, verpleegkundig specialist, Rijnstate ziekenhuis, Arnhem

11.12 – 11.17 Transitie en transfer van zorg: tevredenheid van jongeren met een IBD en hun ouders binnen UMCG
Mw. J.H. Mooibroek-Hulsebos, verpleegkundig specialist i.o., UMCG, Groningen

11.20 - 11.25 Prijsuitreiking beste abstract
Prof. dr. C.J. van der Woude, secretaris NVGE

11.25 Pauze

V&VN ochtendprogramma II — Brabantzaal

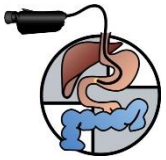


Voorzitters : *volgt*

Thema: Endoscopie

11.40	CRM *A. Anderson en P. Barendrecht, Albert Schweitzer ziekenhuis, Dordrecht*
12.00	Lynch syndroom *Dr. W.H. de Vos tot Nederveen Cappel, MDL-arts, Isala ziekenhuis, Zwolle*
12.20	Probiotica *Dr. J.J. Keller, Haaglanden MC, Den Haag*
12.40	Proctologie *Dr. R.J.F. Felt-Bersma, MDL-arts, Amsterdam UMC (loc. VUmc), Amsterdam*
13.00	Lunch expositiehal

V&VN ochtendprogramma III — Baroniezaal

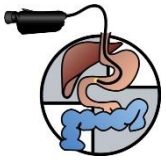


Voorzitters : *Mw. A. van Reijm*

Thema: MDL chirurgie / oncologie

11.40	Immunotherapie *Dr. L. Hol, MDL-arts, Maasstad ziekenhuis, Rotterdam*
12.00	Chirurg-Appendicitis *Dr. V. Klemann, chirurg, MUMC, Maastricht*
12.20	Diverticulitis *D. Lambrichts, arts-onderzoeker chirurgie, Erasmus MC, Rotterdam*
12.40	Surveillance bij slokdarmcarcinoom *B.J. van Wilk, arts-onderzoeker, Erasmus MC, Rotterdam*
13.00	Lunch expositiehal

V&VN ochtendprogramma IV — Zaal 80



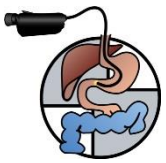
Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *Mw. C. Verstraete*

Thema: Lever

11.40	Virale hepatitis *Dr. M.J. Sonneveld, aios MDL, Erasmus MC, Rotterdam*
12.00	Plaats van de fibroscan en follow up binnen de hepatologie *Mw. M. Bijmolen, verpleegkundig specialist, UMCG, Groningen*
12.20	Portale hypertensie en varices *H. d'Agnolo, aios MDL, Jeroen Bosch ziekenhuis, Den Bosch*
12.40	NAFLD: Integrale aanpak gericht op leefstijl en zelfmanagement *Mevr. M. Voebel, Amsterdam UMC (loc. VUmc), Amsterdam*
13.00	Lunch expositiehal

V&VN middagprogramma I — Brabantzaal



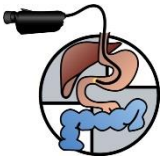
Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *volgt*

Thema: Endoscopie (upper endoscopy)

14.00	Barret *Dr. T.J. Tang, MDL-arts, IJsselland ziekenhuis, Capelle aan de IJssel*
14.25	Ischemie *M. Verbeten, ischemie verpleegkundige, MST, Enschede* *E. Hassink, ischemie verpleegkundige, MST, Enschede*
14.50	Manometrie *J. Oors, coördinator gastro-intestinaal functieonderzoek, Amsterdam UMC (loc. AMC) en St. Antonius*
14.15	Achalasie *Prof. dr. P. Fockens, MDL-arts, Amsterdam UMC (loc. AMC), Amsterdam*
15.40	Borrel

V&VN middagprogramma II — Baroniezaal



Voorzitters : *Mw. A.P.M. Boersen*

Thema: Verpleegkundig endoscopisten

14.00 Bloeding
L. Perk, MDL-arts, Haaglanden MC, Den Haag

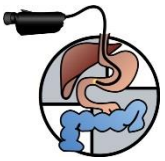
14.25 Perforatie
L. Perk, MDL-arts, Haaglanden MC, Den Haag

14.50 Post poliepectomie
Dr. S. van Turenhout, MDL-arts, Noordwest ziekenhuisgroep, Alkmaar

14.15 Complicaties bij sedatie
spreker volgt

15.40 Borrel

V&VN middagprogramma III — Zaal 80



Voorzitters : *R. Theeuwen*

Thema: IBD

14.00 Chirurgie IBD
Dr. J. Lange, chirurg, UMCG, Groningen

14.25 Surveillance bij IBD,
Dr. A.E. van der Meulen, MDL-arts, Leids Universitair Medisch Centrum, Leiden

14.50 Osteoporose
Dr. R. de Jongh, Amsterdam UMC (loc. AMC), Amsterdam

14.15 Voeding en IBD
Dr. D. Jonkers, onderzoeker, MUMC, Maastricht

15.40 Borrel

Non-pedunculated, screen-detected T1 colorectal carcinomas have an increased risk of lymph node metastasis as compared to non-screen detected T1 colorectal carcinomas

L. van der Schee[1], K.J.C. Haasnoot[1], S.G. Elias[2], Y. Backes[1], A. van Berkel[3], F. Boersma[4], F. ter Borg[5], K.M. Gijsbers[5], K. Kessels[6], R.W.M. Schrauwen[7], B.W.M. Spanier[8], J.S. Terhaar Sive Droste[9], W.H. de Vos tot Nederveen Cappel[10], F.P. Vleggaar[1], M.M. Laclé[11], L.M.G. Moons[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept. Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Noordwest Ziekenhuis, Alkmaar, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Gelre Ziekenhuis, Apeldoorn, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Deventer Ziekenhuis, Deventer, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Antonius Ziekenhuis, Nieuwegein, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Bernhoven, Uden, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Rijnstate Ziekenhuis, Arnhem, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Isala Ziekenhuis, Zwolle, The Netherlands. [11]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. On behalf of The Dutch T1 CRC Working Group.

Background: Implementation of the FIT-based colorectal cancer (CRC) screening program in 2014 has led to an increased detection of T1 CRCs in the Netherlands. Current risk stratification is based on non-screen-detected T1 CRCs. However, it is unknown whether screen- and non-screen-detected T1 CRCs have a comparable risk of adverse outcomes such as lymph node metastasis (LNM).
Methods: In this study we compared screen-detected and non-screen-detected T1 CRCs. A multicenter retrospective observational cohort-study was performed, identifying all T1 CRCs diagnosed between 2014 and 2017 in 8 hospitals in the Netherlands. Data on whether a T1 CRC was screen-detected or non-screen-detected, together with polyp characteristics, histological risk factors, treatment approach and clinical variables were collected. Differences in LNM were evaluated by multivariate logistic regression analysis, adjusting for clinical variables, polyp characteristics and histological risk factors.
Results: 1101 T1 CRCs were included, of which 693 (62.9%) were screen-detected and 408 (37.1%) were non-screen-detected. Screen-detected T1 CRCs were smaller (mean size of 20.0 mm vs. 22.5 mm, p=0.005), more frequently located in the left-sided colon (61% vs. 54%, p=0.02), and patients were younger (67.2 vs. 69.3 years, p<0.001) compared to non-screen-detected patients. Within the group of patients referred for surgery, screen-detected T1 CRC was associated with a higher risk of LNM than non-screen-detected T1 CRC (16.3% vs. 11.1%; OR 1.90,95% CI 1.04-3.51; p=0.04). This difference was mainly attributable to a higher LNM risk in non-pedunculated screen-detected T1 CRCs (18.6% vs 10.3%, p=0.03), as there was no significant difference in LNM risk in pedunculated T1 CRCs (9.1% vs 8.3%). Within the group of non-pedunculated T1 CRCs (n=669), the higher risk of LNM in screen-detected patients could not be explained by differences in lymphovascular invasion, poor differentiation, positive resection margins or differences in surgical referral rate. Interestingly, the major difference in LNM in non-pedunculated T1 CRCs was found within the primary surgery group (screen-detected 17.6% vs. non-screen-detected 6.2%, p=0.008), and not in the secondary surgery group (20.2% vs. 21.4%, p=0.871).
Conclusion: Non-pedunculated screen-detected T1 CRCs have a higher risk of LNM compared to non-screen detected T1 CRCs. This difference is most pronounced in patients referred for primary surgery, suggesting that these polyps may have alarming malignant features with optical diagnosis. This increased risk should be kept in mind, now that local minimally invasive treatments are becoming more widely available.

Multi-omics analysis reveals gut microbial dysbiosis and metabolic alterations in fatigued patients with quiescent Inflammatory Bowel Diseases.

N.Z. Borren[1], D. Plichta[2], V. Peng[2], J. Luther[1], H. Khalili[1], J.J. Garber[1], F.P. Colizzo[1], C.J. van der Woude[3], H. Vlamakis[2], R.J. Xavier[1], A.N. Ananthakrishnan[1]. [1]Dept. of Gastroenterology, Massachusetts General Hospital, Boston, United States Of America. [2]Dept. of Biostatistics, Broad Institute, Cambridge, United States of America. [3]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands.

Background: Fatigue is frequent and disabling in patients with inflammatory bowel diseases (IBD) but its underlying mechanism(s) is poorly understood. We investigated the role of alterations in the gut microbiome, serum metabolome, and proteome in causing fatigue in patients with quiescent IBD.
Methods: This prospective study enrolled patients with quiescent Crohn's disease (CD) or ulcerative colitis (UC) (clinical remission (HBI < 4 or SCCAI $\leq$2) and a colonoscopy within 1 year prior demonstrating endoscopic remission). Fatigue was assessed using the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) score; a FACIT-F score ≤ 43 indicated significant fatigue. Blood serum samples were collected for metabolic and proteomic profiling using LC-MS methods and multiplex PEA technology respectively. Stool samples were obtained and subjected to shotgun metagenomic sequencing on Illumina HiSeq platform. Statistical analysis was performed using linear model on log-transformed relative abundancies with fatigue, IBD type, age and gender as covariates.
Results: Our study included 166 IBD patients (106 CD, 60 UC) (44% women, mean age 39.8 years). Of these, 91 (55%)met our definition of fatigue (FACIT-F < 43). There were no differences in disease related characteristics, demographics, or medications between the two groups. Metabolomic profiling demonstrated a clustered module consisted of 18 different metabolites, many of which were individually depleted in patients with fatigue compared to those without. These include metabolites such as methionine (β= -0.43, p=0.020), tryptophan (β= -0.38, p= 0.042), proline (β= -0.045, p = 0.017) and sarcosine (β= -0.37, p = 0.047). Next, we performed proteomic analysis for a total of 184 different proteins. Specifically, we observed no increase in various inflammatory cytokines such as TNFα, IL-1, and IL-6. We found a less diverse gut microbiome in the stool of patients with fatigue compared to controls. After adjusting for IBD type, age and gender, several significant alterations in microbial abundance on genus and species level were identified between those with and without fatigue. At a species level, butyrate producers such as *Faecalibacterium prausnitzii* (p=0.000189, q=0.00713)and *Roseburia hominis* (p=0.00795, q=0.105)were depleted in fatigued patients.
Conclusion: In conclusion, this prospective cohort study provides evidence of a linkage between metabolomic perturbations, in particular depletion of tryptophan in patients with fatigue symptoms despite quiescent IBD. Further, gut microbial compositional and functional changes may underpin these changes and leading to fatigue.

Hepatocellular adenoma during pregnancy: a prospective study on growth of the liver lesions

A.J. Klompenhouwer[1], M.P. Gaspersz[1], M.E.E. Bröker[1], M.G.J. Thomeer[2], S.M. van Aalten[1], E.A.P. Steegers[3], T. Terkivatan[1], H. de Koning[4], R.A. de Man[5], J.N.M. IJzermans[1]. [1]Dept. of Surgery, Erasmus MC, Rotterdam, The Netherlands. [2]Dept. of Radiology and Nuclear Medicine, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Gynaecologic Oncology, Erasmus MC, Rotterdam, The Netherlands. [4]Dept. of Public Health, Erasmus MC, Rotterdam, The Netherlands. [5]Dept. of Hepatology, Erasmus MC, Rotterdam, The Netherlands.

Background: Hepatocellular adenoma (HCA) in pregnant women requires special consideration due to a reported potential risk of growth and hemorrhage. In this prospective study we investigated the management and incidence of HCA growth in patients with HCA<5cm during pregnancy.
Methods: This was a multicenter prospective cohort study in pregnant patients with suspected HCA<5cm on imaging. Definitive HCA diagnosis was established with MRI with hepatobiliary contrast agents (LCE-MRI), preferably before pregnancy. Patients who did not have a definitive diagnosis at inclusion underwent LCE-MRI after giving birth. Patients underwent close monitoring with ultrasound during pregnancy to assess growth (defined as an increase of >20%).
Results: Out of 66 included patients, 18 were excluded from analysis because post-partum LCE-MRI showed the lesion to be Focal Nodular Hyperplasia (FNH) and not HCA. The remaining 48 patients with confirmed HCA were followed during 51 pregnancies. Median age was 30 years (IQR 27-33) and BMI 31.9 kg/m^2 (IQR 26.3-36.6). Growth of HCA was seen in 25% of pregnancies with a median growth of 14mm (IQR 8-19). One patient with HCA that showed significant growth to >70mm successfully underwent transarterial embolization at week 26 to prevent further growth. No complications were observed during the remaining 50 pregnancies.
Conclusion: This study indicates that in patients with a HCA<5cm pregnancy can be considered to be safe bearing minimal risk for mother and none for the child. As 25% of HCA was found to increase in size during pregnancy, we recommend close monitoring by ultrasound to identify these patients, enabling intervention if needed. The large number of patients suspected of having HCA being misdiagnosed and appear to have FNH stresses the importance to confirm HCA diagnosis using LCE-MRI to prevent unnecessary arousal in women with a benign liver lesion.

Rapid treatment response in autoimmune hepatitis

S. Pape[1], T.J.G. Gevers[1], J.M. Vrolijk[2], B. van Hoek[3], G. Bouma[4], C.M.J. van Nieuwkerk[4], J. Hartl[5], R. Taubert[6], E. Jaeckel[6], M.P. Manns[6], M. Papp[7], N. Sipeki[7], F. Stickel[8], C. Efe[9], E. Ozaslan[10], T. Purnak[11], F. Nevens[12], D.J.N. Kessener[13], A. Kahraman[13], C. Schramm[5], A.W. Lohse[5], J.P.H. Drenth[1], M.A. Heneghan[14]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Amsterdam UMC (loc. VUmc), Amsterdam, The Netherlands. [5]1st. Dept. of Internal Medicine, University Medical Center Hamburg-Eppendorf, Hamburg, Germany. [6]Dept. of Gastroenterology and Hepatology, Hannover Medical School, Hannover, Germany. [7]Dept. of Gastroenterology, University of Debrecen, Debrecen, Hungary. [8]Dept. of Gastroenterology and Hepatology, University Hospital of Zurich, Zurich, Switzerland. [9]Dept. of Gastroenterology, Harran University Hospital, Urfa, Turkey. [10]Dept. of Gastroenterology, Numune Research and Education Hospital, Ankara, Turkey. [11]Dept. of Gastroenterology, Hacettepe University, Ankara, Turkey. [12]Dept. of Gastroenterology and Hepatology, University Hospital KU Leuven, Leuven, Belgium. [13]Dept. of Gastroenterology and Hepatology, University Clinic of Essen Duisburg-Essen, Essen, Germany. [14]Institute of Liver Studies, King's College Hospital, London, United Kingdom.

Background: Treatment of autoimmune hepatitis (AIH) is aimed at normalization of transaminases and immunoglobulin G. Dynamics of serum transaminases shortly after treatment might predict biochemical remission and liver-related events later in time. We aim to assess the predictive value of rapid treatment response in AIH.

Methods: We performed a multi-center retrospective cohort study in two independent AIH cohorts from 12 centers in Europe, consisting of 743 adult patients with an established AIH diagnosis. We used a receiver operating characteristic curve and Youden index to calculate the optimal cut-off in percentage aspartate aminotransferase (AST) drop after 8 weeks of treatment that predicts normalization of transaminases after 26 weeks of treatment (primary outcome) in a training cohort (n = 375). We evaluated whether achieving this cut-off was associated with normalization of transaminases after 26 and 52 weeks in a validation cohort (n = 368). We investigated whether rapid treatment response was associated with reduced liver related death or transplantation in both cohorts. We performed univariate and multivariable logistic and Cox regression with correction for confounders.

Results: Most patients were female and mean age at diagnosis was 48.4 years old. Patients in the validation cohort were treated with higher prednisone dosages. AST drop after 8 weeks of treatment was significantly associated with normalization of transaminases at 26 weeks of treatment (area under the curve 0.71, $p < 0.001$), with 80% AST drop as most optimal cut-off. In the training cohort, patients with a rapid treatment response (≥80% drop of AST after 8 weeks) were more likely to achieve normalization of transaminases at 26 and 52 weeks when compared to patients without a rapid treatment response (79.1% vs. 50%, $p < 0.001$; 89.1% vs. 66.2%, $p < 0.001$). The cut-off of 80% AST drop generated similar results in the validation cohort (70.1% vs. 58.4%, $p = 0.02$ for normalization of transaminases at 26 weeks; 79.4% vs. 64.3%, $p = 0.001$ for 52 weeks), which remained significant after correction for confounders. Patients with a rapid treatment response in the training cohort had a smaller chance on liver related mortality or transplantation (adjusted hazard ratio 0.10, 95% CI 0.02 – 0.61, $p = 0.01$). This result could not be confirmed in the validation cohort. A sensitivity analysis with alanine aminotransferase showed similar results as our primary analysis.

Conclusion: AIH patients with a 80% drop in transaminases after 8 weeks have a favorable disease course with a high likelihood of biochemical remission. Patients without a rapid treatment response might benefit from close surveillance and intensification of therapy.

A proper selected group of patients with autoimmune hepatitis can benefit of treatment withdrawal.

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Background: Autoimmune hepatitis (AIH) is a severe chronic inflammation of the liver usually requiring permanent treatment. The large majority of patients relapse after treatment cessation. Yet, a small subgroup of patients may maintain remission after drug withdrawal. In this prospective study, we investigated the success rate after treatment withdrawal in AIH patients after stringent selection based both on biochemical and histological remission.
Methods: Patients with established AIH and complete biochemical remission (defined as complete normalization of serum alanine aminotransferase (ALT) and immunoglobulin G (IgG)) of ≥2 years on monotherapy were biopsied. Immunosuppressive therapy was only withdrawn in patients with histological normalization (HAI ≤3). Biochemical relapse was defined as ALT three times the upper limit of normal and/or raised IgG levels over 2g/dl. A loss of remission was defined by an increase in serum ALT levels above the upper limit of normal on at least three occasions with an interval of 3 weeks.
Results: A total of 16 patients who met the inclusion criteria, had a minimal follow-up of one year and had a biopsy before treatment withdrawal were included. Persistent histological inflammatory activity precluded drug withdrawal in four patients. Immunosuppressive medication was withdrawn in 12 patients; 8 (67%) remained in remission during a median follow-up of 62 months (range: 13-75 months); four (33%) required reinstitution of therapy after 1, 6, 11 and 40 months after a relapse or loss of remission. Patients with histological remission had lower values of ALT (16 vs. 23; p 0.03), AST (22 vs. 25; p 0.02) and IgG (12.2 vs. 13.7; p 0.05) compared with patients with ongoing histological activity, despite complete biochemical remission.
Conclusion: In this prospective study, we show that a small, proper selected group of patients with AIH can benefit of treatment withdrawal. A liver biopsy is mandatory prior to drug withdrawal, in addition to complete biochemical remission of at least two years.

Ursodeoxycholic Acid Treatment-Induced GLOBE Score Changes Are Associated with Liver Transplantation-Free Survival in Patients with Primary Biliary Cholangitis

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Background: The GLOBE score is an accurate prognostic model to assess the risk of liver transplantation (LT) or death among patients with primary biliary cholangitis (PBC). Clinical benefit of drugs in development for PBC is currently suggested based on treatment-induced changes of the GLOBE score (ΔGLOBE). However, ΔGLOBE has never been validated for this purpose. We aimed to assess the association between the ΔGLOBE and LT-free survival among PBC patients who started ursodeoxycholic acid (UDCA).

Methods: All UDCA-treated patients in the Global PBC Study Group database with at least 1 year of UDCA therapy were included. ΔGLOBE was defined as: GLOBE score after 1 year of UDCA – pretreatment GLOBE score. In Cox regression analyses ΔGLOBE was adjusted for the pretreatment GLOBE score. Linearity was assessed by including polynomial terms of ΔGLOBE. The cumulative LT-free survival was derived from Kaplan Meier analyses.

Results: Overall, 3775 UDCA-treated patients were included; 3424 [90.7%] were female, mean age 54.1 (SD 11.8) years. During a median follow-up of 7.0 (IQR 3.3-11.3) years, 727 patients reached the endpoint of LT or death. The overall cumulative 10-year LT-free survival was 79.5% (95%CI 77.9-81.1). The median GLOBE score was 0.21 (IQR -0.55-0.98) prior to treatment and -0.07 (IQR -0.76-0.67) after 1 year of UDCA. Median ΔGLOBE was -0.23 (IQR -0.65-0.13). ΔGLOBE was ≥0 in 1245 (33.0%) patients, >-0.5 and <0 in 1280 (33.9%) patients, and ≤-0.5 in 1250 (33.1%) patients. Cox regression analyses, adjusted for pretreatment GLOBE score, showed that ΔGLOBE (HR 2.27, 95%CI 2.02-2.55, p<0.001) and $\Delta GLOBE^2$ (HR 1.04, 95%CI 1.03-1.05, p<0.001) were associated with LT/death. The interaction between the pretreatment GLOBE score and ΔGLOBE was not statistically significant (p=0.956). Cumulative 10-year LT-free survival rates according to pretreatment GLOBE score and ΔGLOBE score categories were calculated. In patients with a pretreatment GLOBE score <-0.55 the cumulative LT-free survival was 100.0% in ΔGLOBE ≤-0.5, 98.6% in ΔGLOBE >-0.5 and <0, and 96.7% in ΔGLOBE ≥0 (p=0.014). Cumulative LT-free survival in pretreatment GLOBE score -0.55 - 0.98 was 92.2% in ΔGLOBE ≤-0.5, 86.5% in ΔGLOBE >-0.5 and <0, and 82.2% in ΔGLOBE ≥0 (p<0.001). In patients with a pretreatment GLOBE score >0.98, cumulative LT-free survival was 62.0% in ΔGLOBE ≤-0.5, 44.4% in ΔGLOBE >-0.5 and <0, and 24.5% in ΔGLOBE ≥0 (p<0.001).

Conclusion: We show that a treatment-induced change in the GLOBE score was associated with LT-free survival in patients with PBC receiving UDCA. This substantiates the validity of assessing the clinical impact of new therapeutic agents based on GLOBE score changes.

Three years of Obeticholic Acid (OCA) Therapy Results in Histological Improvements in Patients with Primary Biliary Cholangitis: Further Analysis of the POISE Biopsy Substudy

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Background: Primary biliary cholangitis (PBC) is a rare autoimmune liver disease. Ursodeoxycholic acid (UDCA) slows histologic progression in responders; however, up to 40% of patients do not have an adequate response to UDCA and remain at a high risk of progression. Obeticholic acid (OCA), a selective and potent FXR agonist, was approved for use in patients with PBC and an inadequate response to, or intolerance of, UDCA. This analysis further evaluated the effect of 3 years of OCA therapy on histological progression of PBC in patients with inadequate response to UDCA.

Methods: Patients enrolled in POISE had the option to participate in a biopsy substudy. Participants had biopsies ≤1 year before double-blind baseline and after ~3 years of OCA treatment. In the present analysis, slides were masked, and reviewed simultaneously by 2 blinded pathologists using a dual-headed microscope. Fibrosis stage was the primary objective and was defined using a 6-tier staging system. Key secondary parameters included Nakanuma staging for histologic evaluation.

Results: This analysis included 17 patients with adequate paired biopsies (mean age 59 years, 94% female, 100% received UDCA, precirrhotic fibrosis at baseline [F0-F3] n=14, cirrhosis at baseline [F4-F5] n=3, ductopenia at baseline n=11). After 3 years of OCA treatment 12 (71%) patients showed improvement or no progression in fibrosis stage compared to 5 (29%) patients who worsened. Using the Nakanuma staging criteria, 12 (71%) and 13 (76%) patients had an improvement or no progression of Fibrosis Score and Bile Duct Loss Score, respectively, after OCA treatment. For the Nakanuma Disease Stage, 13 (76%) patients had improvement or no progression after OCA treatment. At baseline, median (Q1, Q3) alkaline phosphatase was 322.0 U/L (246.5, 358.5) and total bilirubin was 0.42 mg/dL (0.34, 0.72). Median (Q1, Q3) change from baseline in alkaline phosphatase on the day of or last visit prior to follow-up biopsy was -92.9 U/L (-118.3, -45.1); median (Q1, Q3) percent change from baseline was -28.2 (-37.2, -20.3).

Conclusion: In this analysis of non-responders to UDCA at high risk for histologic disease progression, the majority of patients had improvement or no progression in fibrosis stage after 3 years of OCA treatment.

Second-Line Therapy Is Indicated in Ursodeoxycholic Acid-Treated Patients with Primary Biliary Cholangitis and High Alkaline Phosphatase Despite a Complete GLOBE-Score Response

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Background: The GLOBE-score is an accurate prognostic model by which the risk of liver transplantation (LT) or death can be assessed for patients with primary biliary cholangitis (PBC). Overall, patients classified as complete GLOBE-score responders after 1 year of ursodeoxycholic acid (UDCA) have a LT-free survival which is comparable to that of the general population, implying that second-line therapy is not indicated. A subset of complete responders, however, remains to have high alkaline phosphatase (ALP) levels. We aimed to compare the LT-free survival of PBC patients that have a complete GLOBE-score response with various ALP levels to that of a matched general population.

Methods: All patients classified as complete GLOBE-score responders after 1 year of UDCA in the Global PBC Study Group database were included. Patients were stratified according to ALP after 1 year of UDCA into the lowest 25%, the interquartile range (IQR) (25-75%), and the upper 25%. The association between ALP groups and LT/death was assessed through Cox regression analyses. LT-free survival within the 3 ALP groups was compared with the survival of an age-, sex- and calendar time-matched general population.

Results: We included 2696 complete GLOBE-score responders, predominantly women (92.0%) with an mean (standard deviation) age of 55.0 (11.8) years. Patients were followed for a median of 7.6 (IQR 4.1-11.7) years, during which 40 patients underwent LT and 234 patients died. Median ALP (in upper limit of normal) after 1 year of UDCA was 1.16 (IQR 0.81-1.69). Cumulative 10-year LT-free survival was 94.1%, 90.6% and 86.9% in the low, interquartile and high ALP group, respectively ($p<0.001$). As compared to patients in the low ALP group, the risk of LT/death was higher in patients in the interquartile ALP group (HR 1.47, 95%CI 1.13-1.92, $p=0.004$) and in patients in the high ALP group (HR 2.12, 95%CI 1.49-3.02, $p<0.001$). While the LT-free survival was either better or comparable to that of a matched general population for patients in the low ALP group ($p=0.043$) and interquartile ALP group ($p=0.403$), respectively, complete GLOBE-score responders in the highest ALP quartile had a statistically significantly worse LT-free survival ($p=0.020$).

Conclusion: Here we show that, despite being classified as complete GLOBE-score responders, PBC patients with high ALP levels after 1 year of UDCA remain to have an impaired survival as compared to a matched general population. These patients may thus represent an unrecognized group in whom second-line therapy could further improve prognosis.

Bezafibrate is more effective than placebo in pruritus of chronic cholestasis: the FITCH trial

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Background: Pruritus of cholestasis may seriously affect quality of life of patients with cholestatic liver diseases. Up to 70% of patients with primary sclerosing cholangitis (PSC) and primary biliary cholangitis (PBC) suffer from pruritus during the course of disease. Guideline-approved pharmacological strategies show limited efficacy and can provoke serious side effects. We hypothesized that bezafibrate, a peroxisome proliferator-activated receptor (PPAR) agonist, could relieve cholestasis-associated itch by alleviating hepatobiliary inflammation and reducing formation of a biliary itch factor. The aim of the double-blind, randomized, placebo-controlled FITCH trial ("Fibrates for cholestatic ITCH") was to assess the effect of bezafibrate on pruritus in patients with PSC, PBC or secondary sclerosing cholangitis (SSC).
Methods: Patients with cholestasis-associated pruritus were recruited in the Netherlands and Spain between 2016 and 2019. Patients were eligible if they reported an itch intensity of at least 5 out of 10 on a visual analogue scale (VAS). Patients were randomly assigned to receive once-daily bezafibrate (400mg) or placebo for a period of 21 days. The primary endpoint was a 50% reduction of pruritus determined by VAS score.
Results: 74 patients were included and 70 patients completed the trial (44 PSC, 2 SSC, 24 PBC). Patients treated with bezafibrate (n=37) and those treated with placebo (n=33) were comparable with respect to baseline characteristics. Bezafibrate led in 38% of the patients (38% in PSC, 36% in PBC) to $\geq$50% reduction of pruritus (VAS) whereas patients treated with placebo reached the primary endpoint in 12% (p=0.03). Patients treated with bezafibrate reported a reduction in the median morning (p =0.01) and evening (p<0.01) intensity of pruritus (VAS) when compared to placebo. In the 5D pruritus questionnaire a positive change in pruritus direction was observed during bezafibrate treatment in comparison with placebo (p<0.001).
Serum alkaline phosphatase decreased by 36% under bezafibrate but not under placebo (p=0.04) and correlated with reduction of the VAS pruritus score (p<0.001). Serum autotaxin activity remained unchanged during the treatment period in both groups (bezafibrate: p=0.99; placebo: p=0.75) and did not correlate with changes in pruritus VAS score (p=0.88).
Conclusion: Bezafibrate is superior to placebo in improving pruritus in chronic cholestatic liver diseases such as PSC and PBC.

Symptom Relief and Quality of Life after Combined Partial Hepatectomy and Cyst Fenestration in Polycystic Liver Disease: a Prospective Cohort Study

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Background: Polycystic liver disease (PLD) is a hereditary condition that may cause severe symptomatic hepatomegaly. Combined partial hepatectomy and cyst fenestration (PHCF) can be performed in these cases to reduce liver volume and symptom burden. We investigated symptom relief and improvement of health-related quality of life after PHCF in a cohort of individuals with moderate to severe PLD.
Methods: We established a prospective cohort between 2014 and 2018 at a referral center in the United States (Mayo Clinic, Rochester MN). Patients received a questionnaire before and six months after surgery. Total liver volume was measured where post-operative imaging was available. Primary outcome was change in symptoms six months after surgery, measured with the PLD Questionnaire (PLD-Q). Change in symptoms was defined as clinically relevant when the decrease in score was larger than the Minimal Clinically Important Difference (MCID), defined as half the standard deviation of the mean change in score. Secondary outcomes were change in quality of life, measured with the 12-Item Short Form Survey (SF-12) consisting of the physical component scale (PCS) and mental component scale (MCS), and the EuroQoL Visual Analogue Scale (EQ-VAS). All questionnaire scores range from 0 to 100 and were assessed before and 6 months after PHCF. Surgical complications were scored according to Clavien-Dindo (grade 1 to 5).
Results: We included 17 PLD patients (mean age 52 years, 82% female). PHCF reduced median liver volume from 4917 ml to 2120 ml. Median PLD-Q score decreased from 76.9 to 34.8 points six months after surgery ($p<0.001$). The MCID was -16.5, resulting in a clinically relevant response in 9/13 (69%) patients. The majority of scored symptoms (15/16) declined after treatment, with most impact seen on early satiety and dyspnea. Quality of life improved after surgery as median PCS increased from 24.9 to 45.7 ($p=0.004$), MCS from 40.5 to 55.4 ($p=0.02$) and EQ-VAS increased from 40.0 to 72.5 ($p=0.003$). Major complications (grade 4) occurred in 12% of patients. There was no procedure-related mortality.
Conclusion: PHCF substantially improves symptom burden and quality of life in patients with highly symptomatic PLD.

Estrogen-containing oral contraceptives are associated with polycystic liver disease severity in pre-menopausal patients

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Background: Polycystic liver disease (PLD) is a progressive disease that occurs predominantly in females. It is hypothesized that exposure to exogenous estrogen results in higher liver volume but supporting evidence for this concept is contradictory. We aimed to assess the association between use of oral estrogen-containing contraceptives or history of pregnancies with disease severity in females with PLD.
Methods: We performed a cross-sectional cohort study. Female PLD patients were identified from the International PLD Registry and included when imaging was available prior to any liver volume reducing therapy. Patients received a questionnaire to collect detailed information on estrogen use and pregnancies. We used multiple linear regression analysis to assess associations of exposure to estrogen-containing contraceptives (years) and duration of pregnancies (months) with height-adjusted liver volume (hTLV) and adjust for confounders. Preplanned subgroup analyses were performed on pre-menopausal and post-menopausal patients.
Results: We identified 360 females that met the inclusion criteria for our study, a total of 287 (80%) patients returned the female hormonal status questionnaire (Radboudumc: 222, UK Leuven: 65) and were therefore eligible for analysis. In the total group, there was no significant association between estrogen-containing oral contraceptives and hTLV (B=0.0061, P=0.06) and post-menopausal subgroup (B=0.0018, P=0.70). By contrast, in pre-menopausal females use of estrogen-containing oral contraceptives led to higher polycystic liver volumes (B=0.0144, P=0.02). Each year of exposure corresponds with a 1.45% higher hTLV, equivalent to 15.5% higher hTLV for every 10 years of use. Total preganncy duration and hTLV were not correlated (B=-0.0011, P=0.69).
Conclusion: Exposure to estrogen-containing oral contraceptives is associated with a higher hTLV in pre-menopausal females. Pre-menopausal PLD patients should avoid exogenous estrogens.

The efficacy and safety of rifaximin-a: a 2-year observational study of overt hepatic encephalopathy

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Background: Five years after rifaximin-α registration as secondary prophylaxis for overt hepatic encephalopathy (HE) in the Netherlands, we aimed to evaluate the use of hospital resources and safety of rifaximin-α treatment in a real-world setting.
Methods: Prospective identification of all patients using rifaximin-α for overt HE. Assessment of hospital resource use, bacterial infections, and adverse events during 6-month episodes before and after rifaximin-α initiation.
Results: During 26 months we included 127 patients (71.7% male; median age 60.8 years (IQR 56.2-66.1); median MELD score 15.0 (IQR 12.1-20.4); 98% using lactulose treatment). When comparing the first 6 months after rifaximin-α initiation to the prior 6 months, HE-related hospital admissions decreased (0.86 to 0.41 admissions/patient; p<0.001), as well as the mean length of stay (8.85 to 3.79 bed days/admission; p<0.001). No significant differences were found regarding HE-related intensive care unit admissions (0.09 to 0.06 admission/patient; p=0.253), stay on the intensive care unit (0.43 to 0.57 bed days/admission; p=0.661), emergency department visits (0.66 to 0.51 visit/patient; p=0.220), outpatient clinic visits (2.49 to 3.30 bed visit/patient; p=0.240), or bacterial infections (0.41 to 0.35 infection/patient; p=0.523). Adverse events were recorded in 2.4% of patients.
Conclusion: The addition of rifaximin-α to lactulose treatment was associated with a significant reduction in the number and length of HE-related hospitalizations for overt HE. Rifaximin-α treatment was safe and well tolerated.

Surveillance using FDG-uptake in the primary tumour on FDG-PET/CT in patients with oesophageal cancer and a clinically complete response after neoadjuvant chemoradiotherapy

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Background: In oesophageal cancer patients, clinical response to neoadjuvant chemoradiotherapy (nCRT) according to CROSS is assessed after 12 weeks, potentially followed by active surveillance in case of clinically complete response. Detection of residual tumour by FDG-PET/CT alone is inaccurate, since this cannot be distinguished reliably from post-radiation oesophagitis. We hypothesize that when the inflammatory response diminishes, increasing FDG-uptake over time may be a sensitive parameter to detect local recurrence. The aim of this study was to detect tumour recurrence with quantitative PET/CT during systematic follow-up in clinically complete responders beyond 12 weeks after nCRT.
Methods: This is a retrospective analysis of patients who participated in the preSANO- and SANO- trials, and obtained a clinically complete response (cCR) 12 weeks after completion of nCRT, but declined subsequent surgery. cCR was defined as absence of residual tumour on bite-on-bite biopsies and EUS with FNA of suspected lymph nodes. Instead of surgery, patients were offered active surveillance, including PET/CT every 3 months. Standardised uptake values corrected for lean body mass (SUL) were measured at the primary tumour site. The percentage change in maximum SUL value (SULmax) between the last follow-up scan and the scan 12 weeks after nCRT was calculated. Recurrent tumour during follow-up was defined as biopsy-proven vital tumour.
Results: Some 33 patients were eligible for analysis. In 18 of 33 (55%) patients, no biopsy-proven recurrence of the primary tumour was found during a median follow-up of 14 months (range 4.0-25) after CROSS. Some 15 of 33 (45%) patients had residual tumour within a median follow-up of 6.7 months after CROSS (range 5.3-36). We observed two different patterns of FDG uptake suggesting local recurrence. Three of 15 patients had sudden intense increase in SULmax (mean delta%-SULmax of 216%±42%). In the other 12 of 15 patients with local recurrence, an insidious gradual increase in FDG uptake was seen compared to patients without recurrence: mean delta%-SULmax of 21%±19% versus -10%±21% respectively.
Conclusion: Increasing FDG-uptake (delta%-SULmax) during active surveillance beyond 12 weeks after nCRT was associated with local recurrence and stable FDG-uptake was associated with ongoing local tumour control. This indicates that serial PET/CT might be a useful tool to distinguish residual tumour from SUL fluctuations in complete responders. To define a cut-off value of delta%-SULmax for local recurrence a larger number of patients is needed.

TNM-staging of duodenal adenocarcinoma

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Background: Duodenal adenocarcinoma (DA) represents 50% of the small bowel adenocarcinomas. Patients usually present with aspecific symptoms, causing a significant delay in diagnosis, with an average of 6 months. Currently, it is unclear what would be the optimal diagnostic workup. DA has a dismal prognosis, with a 5-year survival of only 46% after curative resection and only 1% without resection. The presence of lymph node (LN) metastases is an important prognostic factor with a 5-year survival of 21% in patients with positive LNs compared to 65% in patients without.
Methods: In this retrospective study we describe the characteristics of DA on portal-venous CECT of 40 patients.
Results: The tumor was visible in 38 patients: isovascular in 61% (23/38), hypovascular in 34% (13/38) and hypervascular 5% (2/38). The tumor was located in the bulbus (4/38=11%), pars descendens/horizontalis (29/38=76%) or pars ascendens (5/38=13%). There were 11 patients with metastases, in liver, lung and peritoneum. In 29 patients suspicious LNs were identified on CECT.
More than half of the patients (21/38=55%) underwent a surgical resection. Four patients were planned for a resection, but revealed metastases or were locally irresectable during surgery.
Of the 21 resected patients the T-stage on CECT (TNM, 7th edition), which is based on the tumor invasion, was correct in 9 patients (9/21=43%), overestimated in 2 (2/21=10%) and underestimated in 10 (10/21=48%). The tumor size was also underestimated in most patients (11/21=52%) with a mean underestimation on CECT of 1.3cm compared to pathology. Especially in patients with isovascular tumors, which is the majority, the tumor is difficult to delineate.
Prediction of positive LNs is difficult. Of the 21 resected patients, 16 had suspicious LNs on CECT, but only 10 of these patients had positive LNs at pathology. Of the 5 patients without suspicious LNs on CECT 1 had positive LNs at pathology. The sensitivity, specificity, positive predictive value and negative predictive value were; 91%, 40%, 63% and 80% respectively.
In 21 patients an MRI was also performed, it was notable that the tumors visibility was very good on the HASTE and the extension could be determined better on MRI than on CECT in most cases.
Conclusion: CECT is probably not sufficient for staging of DA. LN metastases, which are very important for the prognosis, cannot reliably be detected with CECT. Compared to pathology CECT also underestimates the T-stage and size of the tumor, while literature shows that these are correlated with prognosis. Future research, concerning additional imaging modalities is needed to improve the staging of DA. We suggest that MRI or EUS can be potential candidates.

Preoperative biliary drainage in severely jaundiced patients with pancreatic head cancer; a retrospective cohort study.

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Background: Current guidelines recommend against routine preoperative biliary drainage (PBD) in patients with pancreatic head cancer if bilirubin levels are <250 µmol/l. Patients with higher bilirubin levels still undergo PBD despite the lack of clinical studies including these patients. To evaluate the rationale for a different PBD approach in high bilirubin patients, tumor characteristics, technical success and complication rates of PBD and surgery were compared in patients with a bilirubin level ≥250 and <250.

Methods: In this retrospective cohort study, patients diagnosed with resectable pancreatic head cancer and cholestasis (bilirubin ≥40) from 2008 until 2018 were identified in three hospitals. Analyses were performed in patients with a bilirubin level ≥250 versus <250 at diagnosis (1) and prior to PBD and surgery (2) to reflect the moment of clinical decision making (1) and the actual effect of bilirubin level on procedural outcomes (2). Multivariable logistic regression analyses were performed to identify independent predictors of postprocedural complications.

Results: A total of 244 patients were included, 191 with bilirubin <250 at diagnosis and 53 with bilirubin ≥250. PBD was performed in 64% (123/191) and 91% (48/53), respectively. Tumor characteristics did not differ between patients with bilirubin ≥250 versus <250. In patients undergoing PBD, no differences in technical success (83% vs. 81%, p=0.80) and complication rates (33% vs. 29%, p=0.60) were found between bilirubin ≥250 versus <250 at diagnosis.

Ultimately, 212/244 (87%) patients underwent surgery, of which 168 had a bilirubin level at diagnosis <250 and 44 ≥250. The rate of severe postoperative complications (Clavien Dindo ≥3) did not differ between patients with bilirubin ≥250 versus <250 at diagnosis (40% vs 30%, p=0.26).

In addition, when analyzing bilirubin levels ≥250 versus <250 directly prior to PBD and surgery, no differences in PBD technical success and complications and severe postoperative complications were found. Neither bilirubin level at diagnosis (included as a continuous variable) nor PBD could be identified as an independent predictor of postprocedural complications.

Conclusion: Tumor characteristics, PBD technical success and complications, and severe postoperative complications did not differ between patients with pancreatic head cancer and a bilirubin level ≥250 and <250. Although cautious interpretation of these retrospective data is mandatory, our study does not support a different approach regarding PBD in patients with severe jaundice and suggest omitting routine PBD in these patients either.

Peritoneal metastases of gastric cancer origin: incidence, treatment and survival of a nationwide cohort.

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Background: The peritoneum is a predilection site for gastric cancer metastases. Current standard treatment for gastric cancer patients with synchronous peritoneal metastases is palliative systemic chemotherapy. However, its efficacy is largely unknown. The aim of this study was to investigate incidence, treatment and survival patterns of gastric cancer patients with synchronous peritoneal metastases in The Netherlands.
Methods: All newly diagnosed gastric adenocarcinoma patients with synchronous peritoneal metastases between 1999 and 2017 were identified in The Netherlands Cancer Registry (NCR). Differences in treatment patterns over the years were compared using a chi-square test. Overall survival was analysed with Kaplan-Meier curves and the log-rank test.
Results: Between 1999 and 2017, 4137 patients with synchronous peritoneal metastases of gastric cancer origin were registered in the NCR. The annual number of registered patients gradually increased over the years from 114 patients in 1999 to 317 in 2017. For a majority of patients (64%) the peritoneum was the sole metastatic location. Median survival of the entire cohort increased from 3.9 months in 1999-2002 to 4.3 months in 2013-2017 ($p=0.042$). The use of systemic chemotherapy in this patient group increased from 16% in 1999-2002 to 46% in 2013-2017 ($p<0.001$). Median survival of patients treated with systemic chemotherapy increased from 7.3 months in 1999-2002 to 9.1 months in 2013-2017 ($p=0.006$). In contrast, median survival of patients *not* treated with systemic chemotherapy decreased from 3.4 months in 1999-2002 to 2.8 months in 2013-2017 ($p<0.001$).
Conclusion: Over the years, more gastric cancer patients with synchronous peritoneal metastases were registered in the NCR. This can be explained by more frequent usage of diagnostic laparoscopy during initial staging and by more sensitive radiologic modalities. The use of systemic chemotherapy increased over the years, as well as the median survival of patients treated with systemic chemotherapy. This probably reflects the introduction of more potent systemic treatment regimens (e.g. taxanes and trastuzumab).

Multiple primary tumors in patients with esophageal squamous cell carcinoma

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Background: Patients (pts) with primary esophageal squamous cell carcinoma (P-ESCC) may develop multiple primary tumors (MPTs) in the upper aero digestive tract (UADT). The MPT prevalence in these pts is reported to be high. Most studies, however, are performed in Asia. The aim of this study was to evaluate the prevalence of MPTs in the UADT in pts with P-ESCC in a Western population.
Methods: We performed a nationwide, retrospective cohort study in collaboration with the Netherlands Comprehensive Cancer Registry (IKNL). All pts, diagnosed between 2000 and 2016 with P-ESCC were included. Follow-up data were available until January 2018. No MPT screening programs were in place within this timeframe. Our primary endpoint was the MPT prevalence in the UADT in pts with P-ESCC. Secondary endpoints were; (1) MPT localization, (2) the proportion of pts with synchronous (within 6 months before and after diagnosis of P-ESCC) or metachronous (>6 months after diagnosis of P-ESCC) MPTs, and (3) risk factors associated with MPT development. Cox regression analysis was performed.
Results: A total of 9,058 pts were diagnosed with P-ESCC between 2000 and 2016 (male: 57.3%). Median age was 67 years (IQR 60-75). Initial ESCC tumor stage was high (stage III/IV) in the majority of pts (55.7%). Most pts were treated with radio- or chemoradiotherapy (n=3,975; 43.9%). A total of 545 MPTs were registered in 476 (5.3%) pts. Most MPTs were located in the head and neck region (49.5%), the lungs (40.2%) and stomach (6.6%). Of all MPTs, 329 (60.4%) were diagnosed synchronously and 216 (39.6%) metachronously. Of all pts who were alive 6 months after P-ESCC diagnosis (n=5,938), 191 pts (3.2%) developed metachronous MPT. The median time between P-ESCC diagnosis and metachronous MPT was 3.0 years (IQR 1.8-5.9). Of pts with metachronous MPT, MPT stage was high (stage III/IV) in 57.4%. These pts had a significantly worse 2-year survival than low stage MPT (stage I/II) (15.1% vs. 51.9%, $p<0.01$). The following factors were significantly correlated with MPT development: male sex (HR: 1.593 (95% CI 1.286-1.974); $p<0.01$), age <70 years (HR: 1.507 (95% CI 1.194-1.900); $p<0.01$), and low ESCC tumor stage (HR: 1.497 (95% CI 1.188-1.887); $p<0.01$).
Conclusion: Based on this nation-wide registry study a minimum of one out of twenty pts with P-ESCC develops an MPT. The majority of the registered MPTs were detected synchronously, screening from diagnosis of P-ESCC should therefore be recommended. Since pts with metachronous MPTs had more often high-stage MPTs and a worse survival compared to low-stage metachronous MPTs, we should screen for metachronous MPTs to detect MPTs at an earlier, and lower tumor stage.

An immunosuppressive PD-L1 positive tumour microenvironment marks oesophageal adenocarcinomas refractory to neo-adjuvant chemoradiotherapy.

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Background: Oesophageal adenocarcinoma is an aggressive cancer with a poor overall prognosis. For patients with a locally advanced resectable tumour and no distant metastases neo-adjuvant chemoradiotherapy (nCRT) followed by oesophageal resection is associated with better survival than surgery alone. However, a large proportion of patients still develop disease recurrence. The mechanism of poor response to nCRT is not yet understood. An effective antitumour immune response is critical for a successful tumour elimination. Therefore, an immunosuppressive tumour microenvironment may play an important role in failure of standard therapies.
The aim of this study was to characterise tumour microenvironment and immune infiltrate in oesophageal adenocarcinoma patients in relation to pathological treatment response to nCRT.
Methods: Surgical resection specimens were used from 65 patients with oesophageal adenocarcinoma treated with nCRT: 40 responders (Mandard tumour regression grade 2) and 25 non-responders (Mandard tumour regression grade 4 or 5). Tumour sections were stained with pSTAT1, CD3, CD8, FOXP3 and PD-L1 antibodies. Immunostained slides were scanned at high resolution and digital image analysis was performed using Halo software (version 2, Indica Labs, Corrales). Group differences were analysed using the chi-square test or the Mann-Whitney U test.
Results: Both responders and non-responders displayed active interferon gamma signalling in the tumour cells as judged by positive pSTAT1 staining, suggesting that tumour antigen presentation on MHC class I and tumour-specific stimulation of the immune system were common in both groups. Surprisingly, a significantly higher amount of CD3+ (mean 2332 versus 1295 cells/mm^2; p=0.002) and CD8+ (mean 924 versus 486 cells/mm^2; p=0.014) tumour infiltrating lymphocytes was seen in non-responders as compared to responders. Thus, differences cannot solely be explained by induction of T-cell infiltration in responders compared to non-responders. Also, the amount of FOXP3+ regulatory T-cells was similar in both groups (mean 224 versus 215 cells/mm^2; p=0.182). Significantly more non-responders were found to have PD-L1 expression in the tumour stroma than responders (48% versus 15%; p=0.006).
Conclusion: In tissue samples of oesophageal adenocarcinoma patients treated with neo-adjuvant chemoradiotherapy, the presence of an immunosuppressive tumour microenvironment was associated with absence of treatment response, suggesting that cancer immunotherapy may be a valuable alternative treatment option for this group of patients.

Localization of undetected residual tumor after neoadjuvant chemoradiotherapy in patients with esophageal cancer.

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Background: Aim of the preSANO-trial was to determine the accuracy of clinical response evaluations (CREs) after neoadjuvant chemoradiotherapy in patients with locally advanced esophageal cancer. After introduction of the 'bite-on-bite' biopsy-technique, most residual tumors were detected. Aim of the current study was to determine the location of residual tumors that were not detected during CREs and whether or not endoscopic (bite-on-bite) biopsies had the theoretical potential to detect these tumors.
Methods: In this side-study of the prospective preSANO trial, biopsies and resection specimens were independently revised by two GI-pathologists. All patients were included that had residual tumor in the resection specimen that was not detected during two clinical response evaluations, 6 and 12 weeks after completion of neoadjuvant chemoradiotherapy. In the resection specimen, the tumor regression grade was defined for each esophageal wall layer. It was determined how often submucosal tumors under a tumor-free mucosal layer were missed during CREs. Furthermore, biopsies taken during CREs were revised for the presence of submucosal tissue. This was defined as the presence of specific submucosal structures, *i.e.* submucosal glands and/or thick-walled vessel structures.
Results: Some 103 of 207 patients underwent clinical response evaluations followed by surgery. Residual tumor was not detected during CREs in 33 patients. Resection specimens of 28 of these patients were available for revision. The missed residual tumors were located in the mucosal layer of the esophageal wall in 64% of these patients. Residual tumors were located in the submucosal layer, under a tumor-free mucosal layer, in 29% of patients. One patient (4%) still had tumor under a tumor-free mucosal and submucosal layer. Specific submucosal structures were detected in two patients and it was uncertain whether submucosal tissue was present in six patients, while no specific submucosal structures were detected in 21 patients.
Conclusion: The majority of patients in whom residual tumor remained undetected during clinical response evaluations had tumor cells in the mucosal layer of the esophageal wall. Nearly one third of the patients had tumor in the submucosal layer under a tumor-free mucosal layer. Whether or not these submucosal tumors can be detected using endoscopic biopsies is uncertain. Further improvement of the accuracy of clinical response evaluations should focus on sampling of larger mucosal areas, for example by using brush techniques.

The association of perioperative quality-of-care parameters (textbook outcome) with long term outcome after esophagectomy for esophageal cancer

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Background: Despite current improvements in the multimodal treatment of esophageal cancer, surgery remains the key component of esophageal cancer treatment. Therefore, it is essential to optimize the surgical procedure and to pursue the highest surgical quality and perioperative care. Textbook outcome (TO) is a composite measure of ten desired perioperative parameters reflecting the quality of surgical care for patients undergoing an esophagectomy. The objectives of this study were to confirm the association of TO and overall long term survival, to investigate the relationship of TO and recurrence rates and to identify clinicopathological predictors for not achieving TO.
Methods: All patients with esophageal cancer who underwent a transthoracic or transhiatal esophagectomy with curative intent in two tertiary referral centers in The Netherlands between 2007-2016 were included. Patients with a carcinoma in situ, patients undergoing a salvage or emergency procedure and patients that applied for opt-out were excluded. Clinicopathological predictors for not achieving TO were identified using univariate and multivariate logistic regression. Survival was compared using Kaplan-Meier life-table estimates and cox regression.
Results: In total, 1057 patients were included. TO was achieved in 351 (33.2%) patients. Over time, the percentage of patients who achieved TO increased from 28.9% in 2007 to 37.5% in 2016. Body Mass Index (BMI) under 18.5, American Society of Anesthesiologists (ASA) score above one and age above 65 years were associated with a worse TO rate (OR 2.72 [1.02-7.24], ASA 2 OR 1.57 [1.13-2.17] and ASA 3+4 OR 2.33 [1.56-3.48], OR 1.387 [1.06-1.81], respectively), whereas neoadjuvant treatment predicted a better TO rate (OR 0.58 [0.41-0.81]). The median overall survival was 53 months (95% CI 42 – 63) for patients with TO and 35 months (95% CI 29 – 41) for patients without TO; resulting in an overall survival benefit of 18 months (HR 0.759, 95% CI 0.636 – 0.906, P = 0.002). The recurrence rates between TO and no-TO differed, but was not statistical significant (47.1% vs 42.8%, P = 0.177).
Conclusion: BMI less than 18.5, ASA-score higher than one and age older than 65 were characteristics associated with not achieving TO. Neoadjuvant therapy was associated with a better TO rate. Achieved TO resulted in a better overall five-year survival indicating the importance of pursuing TO, with extra attention to patients with clinicopathological risk factors for not achieving TO.

A propensity score matched cohort study to evaluate the association of lymph node retrieval with long-term overall survival in patients with esophageal cancer

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Background: Previous studies evaluating the association of LN yield and survival for patients with esophageal cancer treated with neoadjuvant chemoradiotherapy and resection, presented conflicting results and many may be influenced by confounding and stage migration. This study aimed to evaluate whether the quality indicator 'retrieval of at least 15 lymph nodes (LNs)' is associated with better long-term survival and more accurate pathological staging.
Methods: Data of esophageal cancer patients who underwent neoadjuvant chemoradiotherapy and surgery between 2011-2016 was retrieved from the Dutch Upper Gastrointestinal Cancer Audit. Patients with <15 LNs and ≥15 LNs were compared after propensity score matching based on patient and tumor characteristics. The primary endpoint was 3-year survival. To evaluate the effect of LN yield on the accuracy of pathological staging, pathological N-stage was evaluated and 3-year survival was analyzed in a subgroup of patients node-negative disease.
Results: In 2260 of 3281 patients (67%) ≥15 LNs were retrieved. In total, 992 patients with ≥15 LNs were matched to 992 patients with <15 LNs. The 3-year survival did not differ between the two groups (57% versus 54%, p=0.28). pN+ was scored in 41% of patients with ≥15 LNs versus 35% of patients with <15 LNs. For node-negative patients, the 3-year survival was significantly better for patients with ≥15 LNs (69% versus 61%, p=0.01).
Conclusion: In this propensity score matched cohort, 3-year survival was comparable for patients with ≥15 LNs, although increasing nodal yield was associated with more accurate staging. In node-negative patients, 3-year survival was higher for patients with ≥15 LNs.

Long-term quality of life after total gastrectomy versus Ivor Lewis esophagectomy

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Background: Surgical treatment for gastroesophageal junction (GEJ) cancers is challenging since both a total gastrectomy and an esophagectomy can be performed. Which of the two should be preferred is unknown given the scarce evidence regarding effects on surgical morbidity, pathology, long-term survival and health-related quality of life (HR-QoL). The aim of this study was to investigate the difference in long-term health-related quality of life in patients undergoing total gastrectomy versus Ivor Lewis esophagectomy in a tertiary referral center.
Methods: From 2014 to 2018, patients with a follow-up of at least one year after either a total gastrectomy or an Ivor Lewis esophagectomy for GEJ or cardia carcinoma completed the EORTC QLQ-C30 and EORTC QLQ-OG25 questionnaires. Problems with eating, reflux and nausea and vomiting were chosen as the primary HR-QoL endpoints. The secondary endpoints were the remaining HR-QoL domains, postoperative complications and pathology results. Multivariable linear regression was applied taking confounders age, gender, ASA classification and neoadjuvant therapy into account.
Results: 101 patients with a mean age of 63 years were included, 30 after gastrectomy and 71 after Ivor Lewis esophagectomy. The response rate was 80.2%. Median follow-up was two years (range 12-84 months). Patients after total gastrectomy reported significantly less choking when swallowing and coughing (β=-5.952, 95% CI -9.437 – -2.466; β=-13.084, 95% CI -18.525 – -7.643). Problems with eating, reflux and nausea and vomiting were not significantly different between the two groups. No significant difference was found in postoperative complications or Clavien-Dindo grade. Significantly more lymph nodes were resected in esophagectomy group (p=0.008), however, no difference in number of positive lymph nodes or radicality of surgery was found.
Conclusion: After a follow-up of more than one year choking when swallowing and coughing were less common in the total gastrectomy group. No significant difference was found in problems with eating, reflux or nausea and vomiting nor in postoperative complications or radicality of surgery. Based on this study no general preference can be given to either of the procedures for GEJ cancer. Patients may be informed about the HR-QoL domains that are likely to be affected by the different surgical procedures, which in turn may support shared decision making when a choice between the two treatment options is possible.

Difference in long-term quality of life between McKeown and Ivor Lewis esophagectomy

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Background: The therapy of esophageal cancers consist of (neo)adjuvant chemo(radio)therapy and surgery. Often different surgical approaches are possible such as transthoracic esophagectomy with a cervical anastomosis (McKeown) or an intrathoracic anastomosis (Ivor Lewis). Evidence is scarce on whether either of these approaches is better in terms of survival, perioperative morbidity, pathology results and quality of life. The purpose of this study was to investigate the difference in long-term health-related quality of life (HR-QoL) between McKeown and Ivor Lewis esophagectomy in a tertiary referral center.
Methods: Patients with mid-, distal esophageal, gastroesophageal (GEJ) or cardia carcinoma who have undergone a McKeown or an Ivor lewis esophagectomy in the period of 2003 – 2018 were included in this study. EORTC QLQ-C30 and EORTC QLQ-OG25 questionnaires were handed out during the outpatient clinic visits and a follow-up of at least one year was ensured. Problems with eating, reflux and nausea and vomiting were chosen as primary HR-QoL domain endpoints while the remaining HR-QoL domains, postoperative complications and pathology results were observed as secondary endpoints. Correction for confounders age and gender was performed.
Results: A response rate of 65% was reached. 147 patients were included in the McKeown group and 120 in the Ivor Lewis group. Mean age was 63.5 years and median follow-up was three years (range 12-137 months). No significant difference was found in problems with eating, reflux and nausea and vomiting. Significantly more problems with eating with others were found in McKeown group (β=10.435, 95% CI 4.474 – 16.395) and anastomotic leakage was significantly more common after McKeown esophagectomy ($p=0.004$). No significant difference was found in Clavien Dindo classification. During Ivor Lewis esophagectomy significantly more lymph nodes were resected ($p<0.001$), the number of lymph node metastases and the R0 resection rate did not differ between groups.
Conclusion: No major differences in long-term HR-QoL were found in patients with mid-, distal esophageal, GEJ or cardia carcinoma following McKeown or Ivor Lewis esophagectomy. Problems with eating with others and anastomotic leakages were more common after McKeown esophagectomy, however, Clavien Dindo classification and radicality of surgery were similar between the two groups. Results of this study could assist the patient during the decision-making process prior to the surgery.

The impact of transthoracic and transhiatal esophagectomy on long-term quality of life according to EORTC QLQ-C30 and EORTC QLQ-OG25 questionnaires.

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Background: Treatment of esophageal cancers is challenging. Besides (neo)adjuvant chemo(radio)therapy different surgical approaches are possible such as transhiatal (THE) or transthoracic esophagectomy (TTE) with a cervical or intrathoracic anastomosis. Studies have been performed to establish evidence which is the preferred procedure in terms of postoperative morbidity, survival and short- and long-term health-related quality of life (HR-QoL). The aim of this study was to evaluate long-term HR-QoL in patients undergoing THE versus TTE esophagectomy in a tertiary referral center.
Methods: All patients after THE or TTE for distal esophageal or gastroesophageal junction carcinoma performed between 2003 and 2016 received EORTC QLQ-C30 and EORTC QLQ-OG25 questionnaires. All questionnaires with a follow-up of more than two years after surgery were analysed. Three HR-QoL domains were chosen as primary endpoints: problems with eating, reflux and nausea and vomiting. The secondary endpoints were the remaining HR-QoL domains, postoperative complications and pathology results. The results were corrected for possible confounders such as age and gender.
Results: The questionnaire response rate was 47.6%, with 56 patients in the THE group and 134 in the TTE group. The mean age was 63.5 years and a median follow-up of 3.7 years (range 24-137 months) was reached. No significant difference was found in any of the HR-QoL domains or postoperative complications between the two groups. Significantly more lymph nodes were resected in the TTE group ($p<0.001$). No difference was found in the lymph node metastases or radicality of surgery between the two groups.
Conclusion: After a long follow-up of more than two years no differences in HR-QoL or postoperative complications were found between patients with distal esophageal or gastroesophageal junction carcinoma undergoing THE or TTE esophagectomy. Based on this study we conclude that long-term quality of life should not influence the decision making for surgical approach between THE and TTE esophagectomy.

Conditional survival in patients with resectable esophageal cancer

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Background: Most provided survival rates in current literature are static, calculated from the day of surgery. But as time proceeds after surgery, the risk of death in esophageal cancer patients changes. Conditional survival accounts for the time already survived after surgery and may be informative in addition to conventional estimates during follow-up. The aim of this study was to assess conditional survival in esophageal cancer patients and to design a nomogram predicting the conditional probability of survival for esophageal cancer patients after surgery.
Methods: Consecutive patients with esophageal cancer who received neoadjuvant chemoradiation followed by an esophagectomy between January 2004 and 2019 were included in this retrospective study. Patients with distant metastases, who underwent salvage surgery, or who died within 30 days after resection due to complications were excluded. Conditional survival was defined as the probability of surviving "y" years after already surviving for "x" years. The used formula was: $CS_{(x|y)} = S_{(x+y)}/S_{(x),}$ with $S_{(x)}$ representing the overall survival at "x" years. Cox proportional hazard models were used to evaluate predictors for overall survival, based on the coefficients of this model, a nomogram was constructed to predict 5-year survival directly after surgery and given 1-, 2-, 3- and 4-years survival after surgery. C-statistic was calculated with optimism adjusted for by bootstrapping.
Results: 660 patients were included in this study. The median overall survival was 46.4 months (95%CI 39.1 – 53.8). The probability to achieve 5-year overall survival after resection increased from 46% directly after surgery to 55%, 67%, 79% and 88% per additional year survived. ypN-stage was the strongest predictor for overall survival in multivariable analysis (HR 2.53, 95%CI 1.90 – 3.36; HR 3.17, 95%CI 2.27 – 4.43 and HR 6.50, 95%CI 4.28 – 9.87, respectively for ypN1, ypN2, ypN3 with ypN0 as reference, all p<0.001), followed by pulmonary complications (HR 1.16, 95%CI 1.88 – 0.002, p=0.002), cardiac comorbidity (HR 1.27, 95%CI 1.01 – 1.60, p=0.040) and ypT-stage (HR for ypT2-3 in relation to ypT0 1.461, 95%CI 1.02 – 2.09, p=0.039). The nomogram predicts 5-year survival using these predictors and number of years already survived with a C-statistic of 0.70.
Conclusion: The proposed nomogram showed an accurate prediction of survival in patients after esophageal cancer surgery, taking the years already survived after surgery into account. This nomogram can be helpful in counselling patients in the follow-up after surgery.

C-reactive protein as a marker for anastomotic leakage after esophageal surgery

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Background: Anastomotic leakage following an esophageal resection for esophageal cancer is a severe complication, leading to more post-operative morbidity or even death. CRP is commonly used by surgeons to raise suspicion of anastomotic leakage and other infectious complications, but optimal cut-off values and diagnostic accuracy are undetermined. The aim of this prospective observational cohort study was to determine the accuracy and optimal cut-off values of CRP to predict anastomotic leakage and to determine if there is an association between the level of CRP and the severity of anastomotic leakage.
Methods: Consecutive patients with an esophageal carcinoma scheduled for an esophagectomy with gastric tube reconstruction between April 2016 and October 2018 were included. CRP was measured routinely on post-operative days 3, 5 and 7. Anastomotic leakage was assessed and severity was scored according to the ECCG classification. Anastomotic leakage was confirmed if a defect or leakage of oral contrast was seen on a CT-scan or by endoscopy or if saliva was draining form the neck incision. The diagnostic accuracy of CRP was assessed by receiver operator curve analysis. Youden's index was adopted to determine the cut-off value in receiver operator curve analysis with highest sensitivity and specificity for predicting anastomotic leakage.
Results: 200 patients were included in this study of which 12.4% developed anastomotic leakage. The mean difference of level of CRP between patients who developed anastomotic leakage and patients who did not, was 55.0 mg/L (95%CI 18.9 – 91.1) on postoperative day 3, 77.0 mg/L (95%CI 41.9 – 111.6) on postoperative day 5 and 68.4 mg/L (95%CI 28.5 – 108.3) on postoperative day 7 ($p=0.003$, $p<0.001$, and $p=0.001$, respectively). Postoperative day 5 showed the highest area under the receiver operator curve (0.801), and an optimal cut-off value of 120 mg/L. This resulted in a sensitivity of 71%, specificity of 82% and a positive predictive value and negative predictive value of 30% and 96% respectively. Severity of anastomotic leakage and level of CRP were not significantly correlated with each other on postoperative day 3, 5 and 7 ($p=0.204$, $p=0.092$ and $p=0.161$ respectively).
Conclusion: CRP on postoperative day 5 is a feasible marker to predict anastomotic leakage, using a cut-off value of 120 mg/L, resulting in a negative predicting value of 96% and a specificity of 92%. When CRP exceeds 120 mg/L on postoperative day 5 a CT scan should be considered. However, clinical presentation should also be considered when deciding on further management.

Transthoracic versus Transhiatal esophagectomy for esophageal cancer: a nation-wide propensity score matched cohort analysis

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Background: Chemoradiotherapy (CRT) followed by resection has been the standard therapy for resectable (cT1-4aN0-3M0) esophageal carcinoma in the Netherlands since 2010. The optimal surgical approach remains a matter of debate. The current study aims to compare transthoracic and transhiatal esophagectomy concerning morbidity, mortality and quality of the surgical resection in a propensity score matched nation-wide cohort study.
Methods: Data was acquired from the Dutch Upper GI Cancer Audit. Patients who underwent esophagectomy with curative intent and gastric tube reconstruction for mid/distal esophageal or esophagogastric junction carcinoma (cT1-4aN0-3M0) from 2011-2016 were included. Patients with missing baseline data and patients undergoing emergency surgery or a hybrid procedure were excluded. Patients who underwent a transthoracic (TTE) or transhiatal (THE) esophagectomy were compared after propensity score matching.
Results: After propensity score matching, 1532 patients were included for analysis. The transthoracic approach yielded more lymph nodes (TTE median 19, THE median 14; p<0.001). There was no difference in the number of positive lymph nodes, however, the median (y)pN-stage was higher in the TTE group (p=0.044). The TTE group experienced more chyle leakage (9.7% vs 2.7%, p<0.001), more pulmonary complications (35.5% vs 26.1%, p<0.001) and more cardiac complications (15.4% vs 10.3%, p=0.003). The TTE group required a longer hospital stay (median 14 vs 11 days, p<0.001), ICU stay (median 3 vs 1 day, p<0.001) and had a higher 30-day/in-hospital mortality rate (4.0% vs 1.7%, p=0.009). Subgroup analysis on anastomotic level showed that the TTE group with intrathoracic anastomosis had a significantly lower recurrent nerve lesion incidence (0.5%) compared to TTE with cervical anastomosis (7.4%, p=<0.001) and THE (5.9%, p=<0.001). The higher 30-day/in-hospital mortality in the transthoracic group was mainly caused by the TTE with cervical anastomosis (4.6%), however, only the difference of early mortality between the TTE with cervical anastomosis and the THE group (1.7%) reached statistical significance (p=0.006).
Conclusion: TTE provided a more extensive lymph node dissection which resulted in a higher N-stage, at the cost of increased morbidity and short-term mortality. Although results in high-volume centers are often superior, these data reflect nationwide results. Future research should investigate if a more extensive lymph node dissection leads to an improved long-term survival.

Timing of pancreatoduodenectomy after biliary drainage in patients with periampullary cancer in The Netherlands

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Background: Obstructive jaundice is a frequent symptom in patients with periampullary cancer. Preoperative biliary drainage (PBD) is indicated in patients with cholangitis, severe jaundice (serum bilirubin >250μmol/L), intended neoadjuvant chemotherapy and with extended waiting time for definitive surgical treatment due to logistic reasons. Several studies suggest to delay surgery until 4-8 weeks after PBD to allow for recovery of the liver and immune function but consensus is lacking. The aim of this study is to investigate the relation between time from PBD to pancreatoduodenectomy and (major) postoperative outcomes in patients who underwent resection for periampullary cancer.
Methods: Anonymized data from patients who underwent pancreatoduodenectomy after PBD for periampullary cancer between Jan 2017 and Dec 2018 were extracted from the mandatory, nationwide, Dutch Pancreatic Cancer Audit. Patients who underwent (radio)chemotherapy prior to pancreatoduodenectomy were excluded. Patients were stratified by time from PBD to surgery into group: A short (<4 weeks), B intermediate (4-8weeks), C long (>8weeks). The primary outcome was the rate of major postoperative complications, defined as any complication classified as Clavien-Dindo grade ≥3 within 30 days after surgery. Secondary outcomes were the rate of PBD-related complications and overall complications. PBD-related complications were pancreatitis, cholangitis, perforation, bleeding, stent occlusion or exchange. Overall complications included PBD-related complications and major postoperative complications. A logistic regression analysis was performed, adjusted for age, gender, BMI, ASA-score, texture of the pancreas and PD diameter, to assess the association between time from PBD to pancreatectomy and major postoperative complications.
Results: In total, 539 patients were included after PBD prior to pancreatoduodenectomy, group A 221 (41%), B 251 (47%), and C 67 (12%) patients, respectively. The median time between PBD and surgery was 56 days (range 5-555 days). The rate of PBD-related complications was 15%, with similar outcomes in the 3 patient groups (A 13% vs. B 16% vs. C 16%; *P*=0.697). Major postoperative complication (Clavien Dindo ≥3) rate was 26% and did not differ between the three groups (A 25% vs. B 25% vs. C 38%; *P*=0.096). The 30-day mortality rate was 2.2%. The overall complication rate was 69%, with similar outcomes in the 3 patient groups (A 67% vs. B 71% vs. C 70%; *P*=0.574). In the multivariable analysis, the duration of PBD was not associated with a greater risk of major postoperative complications.
Conclusion: The risk for major postoperative complications after pancreatoduodenectomy is not influenced by the interval between PBD and the surgical procedure.

Textbook outcome as a novel quality measure in pancreatic surgery: a nationwide analysis

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Background: Quality assurance through auditing is becoming increasingly popular in surgery but requires objective assessment of surgical outcome. Textbook Outcome (TO) is a multidimensional measure, reflecting the 'ideal' surgical outcome but has never been used in pancreatic surgery.
Methods: Patients who underwent pancreatoduodenectomy (PD) or distal pancreatectomy (DP) for all indications between 2014-2017 were evaluated. Data were obtained from the Dutch Pancreatic Cancer Audit (DPCA), a mandatory nationwide registry. An international survey (24 experts, 10 countries, 4 continents) was conducted to reach consensus on the definition of TO in pancreatic surgery. Univariable and multivariable logistic regression was performed to identify predictors of TO. Between-hospital variation in TO rates were compared using observed-versus-expected rates, based on casemix-adjustment.
Results: Overall, 3341 patients were included, of whom 2633 (79%) underwent PD and 708 (21%) underwent DP. Based on the survey (92% response rate), TO was defined by the absence of postoperative pancreatic fistula, bile leak, postpancreatectomy hemorrhage (all ISGPS grade B/C), severe complications (Clavien-Dindo grade III or higher), readmission and in-hospital mortality. The overall proportion of patients that achieved TO was 60.3%; 58.3% for PD and 67.4% for DP. On multivariable analysis, only class ASA 3 and 4 predicted a worse TO rate after PD (OR 0.59 [0.44-0.80] and OR 0.19 [0.04-1.02]), whereas a dilated pancreatic duct (>3mm) was associated with an improved TO rate (OR 2.70 [2.05-3.57]). For DP, a benign/premalignant diagnosis and the absence of neoadjuvant therapy was associated with a better TO rate (OR 1.48 [1.02 – 2.14] and OR 2.17 [1.03 – 4.59], respectively). When comparing institutions, the observed-versus-expected rate for achieving TO varied from 0.70 to 1.50 per hospital after adjustment for casemix.
Conclusion: Textbook Outcome is a novel quality measure in pancreatic surgery. The rate of TO varied considerably between pancreatic centers in the Netherlands, demonstrating the potential for improvement using quality assurance programs.

Predicting the risk of not receiving adjuvant chemotherapy after pancreatic cancer surgery: a nationwide analysis

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Background: Although factors for not receiving adjuvant chemotherapy after pancreatic ductal adenocarcinoma (PDAC) resection have been reported in smaller and older retrospective studies, conclusive evidence is lacking, especially for postoperative complications.
Methods: All patients who underwent a pancreatic resection for PDAC between 2014-2017 were registered in the Dutch Pancreatic Cancer Audit and included in this analysis. The association between patient, tumor and center characteristics, postoperative complications, and omission of and time to adjuvant chemotherapy were analyzed with multivariable logistic regression models.
Results: Overall, 1306 patients were included, of whom 312 patients (23.9%) experienced major postoperative complications (Clavien Dindo ≥3) and 46 (3.5%) died during hospital admission. Of 1260 patients without in-hospital mortality, 387 patients (30.7%) did not receive adjuvant chemotherapy. Major postoperative complications (OR 0.439), especially grade B/C pancreatic fistula (OR 0.516) and post-pancreatectomy hemorrhage (OR 0.541), were independent predictors for not receiving adjuvant chemotherapy. Other predictors were older age at resection (OR 0.957), ECOG performance status grade 2 (OR 0.598), annual volume <40 (OR 0.507) and poor tumor differentiation grade (OR 0.623).
Conclusion: Almost a third of patients will not receive adjuvant chemotherapy after pancreatic cancer surgery. Postoperative complications are the strongest predictor for not receiving adjuvant chemotherapy, followed by elderly age, and lower annual volume of the surgical center. Given the nature of most predictors, with the known difficulty to prevent surgical complications, neoadjuvant treatment may be the best strategy to increase the use of chemotherapy in pancreatic cancer surgery and, thereby, improve treatment outcome.

Transcriptomic profiles of peroperative anastomotic samples of patients developing colorectal anastomotic leakage show a distinct signature

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Background: Anastomotic leakage (AL) is a severe complication in about 10% of patients that undergo a colorectal resection with the creation of an anastomosis. AL is associated with prolonged hospital stay, reintervention, intensive care admission, permanent ostomies and even death. Many factors, like patients' comorbidity and chronic use of immune suppressive agents, are associated with the development of AL. However, much remains unknown about the underlying biological processes involved in the development of AL. The aim of this study is to elucidate the biological processes behind the development of AL on the transcriptomic level.
Methods: Samples of circular stapled anastomoses of the colon (i.e. the 'donuts') were collected from patients who participated in the C-seal trial. In this multicenter trial patients underwent an elective colorectal resection with the creation of an anastomosis. Primary endpoint of this study was AL requiring intervention. Gene expression profiles were created for the collected samples with the Illumina NextSeq500 sequencing platform. Differential gene expression analysis was performed with Deseq2 package (v1.21.22) in R (v3.4.3). On the ranked list of differentially expressed genes, gene set enrichment analysis (GSEA) was performed utilizing several databases from the *Molecular Signature Database*(MSigDB).
Results: After quality control of extracted RNA and sequencing results, we continued analysis with 91 samples. Out of these samples, 22 samples were from patients that developed AL and 69 from patients that did not. Differential expression analysis showed that 533genes were significantly ($P < 0.05$) upregulated and 1,655 downregulated in AL samples compared to non-AL samples. GSEA showed 46 significantly upregulated pathways in patients developing AL, mainly associated with energy metabolism. Moreover, 1,604 downregulated pathways were significantly downregulated, mainly associated with the immune system.
Conclusion: This study shows differences in the colon tissue at transcriptomic level at the time of creation of the anastomosis between patients that develop AL and patients that do not. These results can be used for future (peroperative) identification of patients that are at risk for the development of AL. It can also be used to adjust peroperative or even preoperative treatment in order to reduce this serious adverse event.

Incidence, risk factors, treatment and survival of ovarian metastases from colorectal origin: a Dutch population-based study

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Background: Ovarian metastases from colorectal cancer are rare and show poor survival. This nationwide study aimed to provide insight into the incidence, risk factors, treatment and survival of this disease.
Methods: Data from the Netherlands Cancer Registry was used. All newly diagnosed female CRC patients between 2008 and 2016 were included. Treatment was categorized as follows: HIPEC; resection of the primary tumor; palliative treatment; and no treatment. Overall survival (OS) was investigated by use of Kaplan-Meier and multivariable Cox regression analyses.
Results: Of the 53.883 female patients with colorectal cancer, 11.343 (21.1%) had metastases at time of diagnosis. Among them, 471 (4.2%) had ovarian metastases. Among the patients with ovarian metastases, 27.2% underwent CRS-HIPEC; 38.4% underwent primary tumor resection; 25.3% received palliative treatment and 9.1% received no treatment. Median OS of all patients with ovarian metastases was 17.5 months. In patients undergoing cytoreductive surgery followed by hyperthermic intraperitoneal chemotherapy (CRS-HIPEC), OS was significantly higher than in patients only undergoing resection (with or without adjuvant systemic therapy) (median OS 34.1 vs. 17.5 months, adjusted HR 0.44, [0.33 – 0.66]). After adjustment for patient and tumor characteristics, there were no differences in OS between patients undergoing palliative treatment and patients undergoing primary resection (median OS 12.6 months vs. 17.5, adjusted HR 0.96, [0.66 – 1.40]).
Conclusion: Synchronous ovarian metastases from CRC are associated with a poor survival of 17.5 months in this cohort. Patients that underwent CRS-HIPEC showed almost double overall survival time compared to patients that underwent primary tumor resection alone (34.1 months vs 17.5 months).

The effect of neoadjuvant short-course radiotherapy and delayed surgery versus chemoradiation on postoperative outcomes in advanced rectal cancer patients: a propensity score matched audit-based study

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Background: In frail patients short-course radiotherapy and delayed surgery (SCRT-delay) is recommended as an alternative to chemoradiation (CRT) for the treatment of locally advanced rectal cancer (LARC). The heterogeneity of this patient group and the lack of data impede the design of evidence-based guidelines. With the increasing aging population, more evidence is needed to justify the choice of neoadjuvant treatment in frail patients. Furthermore, previous trials suggest that SCRT-delay is an adequate neoadjuvant treatment for intermediate to high risk rectal cancer. This study investigated differences in postoperative outcomes between SCRT-delay and CRT in patients with LARC.
Methods: This was an observational study with data from the Dutch ColoRectal Audit (DCRA). LARC patients who underwent surgery (2014-2017) after an interval of ≥6 weeks were included. Missing values were replaced by multiple imputation. Propensity score matching (PSM) was applied to create comparable groups. Differences were analyzed using Chi-square test for categorical variables, independent sample t-test for continuous variables and Mann-Whitney U test for non-parametric data.
Results: 2,926 patients were included. After PSM, the SCRT-delay group as well as the CRT group comprised 238 patients. Patients in the SCRT-delay group were older and had more comorbidities. They more often underwent abdominoperineal resection. SCRT-delay less often resulted in a pathological complete response. There were no differences in postoperative (surgical) complications.
Conclusion: Despite their age and comorbidities, postoperative complications were not increased in the SCRT-delay group. Considering surgery-related complications, SCRT-delay is a good alternative neoadjuvant treatment option for frail LARC patients. However, more data on local recurrence and survival is needed.

Safety of Same-Day Discharge after Appendectomy: a Systematic Review.

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Background: After appendectomy for acute appendicitis patients are usually hospitalized for 1 or 2 days. Shortening length of stay may reduce costs and improve patient satisfaction. The aim of this study was to assess the safety of same-day discharge (SDD) after appendectomy.
Methods: A systematic review was conducted according to the PRISMA guidelines. A literature search of EMBASE, Ovid MEDLINE, Web of Science, Cochrane central and Google scholar was conducted from inception to January 8, 2019. Two reviewers independently screened the literature. Studies addressing same-day discharge after appendectomy for acute appendicitis were included if they reported data on the predefined outcomes. Same-day discharge (SDD) was defined as discharge on the day of surgery without overnight stay. Main outcomes were hospital readmission, postoperative complications and unplanned hospital visits. The Newcastle-Ottawa Scale was used to assess methodological quality and risk of bias.
Results: Of 1759 articles screened, 23 studies met inclusion criteria: 16 comparative and 7 non-comparative observational studies. Twelve of 16 comparative studies were judged at low risk of bias. None reported significantly higher rates of readmission, complications or unplanned visits after SDD compared to control groups. Meta-analysis was only justified for a limited number of studies, due to clinical and methodological heterogeneity. Meta-analyses with pooled data from 3 and 4 studies demonstrated no significant difference in readmission (RR 1.14, 95% CI 0.38 to 3.37) or complication rates (RR 1.11, 95% CI 0.64 to 1.90) between SDD protocol patients and historical controls. The included non-comparative studies presented similar outcome rates for SDD patients.
Conclusion: The available evidence suggests that same-day discharge is safe without increased risk of readmission, complications or unplanned hospital visits. Same-day discharge may therefore be encouraged in carefully selected patients. Further studies are needed to confirm its safety and demonstrate the effect on costs and treatment satisfaction.

Psychological distress and quality of life following positive faecal occult blood testing in colorectal cancer screening

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Background: The aim of this study was to measure the psychological consequences of participating in colorectal cancer screening, and examine variation between groups according to histopathology result.
Methods: Questionnaires were conducted prospectively in patients aged 55-75 with a positive Faecal Immunochemical Test (FIT). Four different questionnaires were used: the Psychological Consequences Questionnaire, the 6-item Cancer Worry Scale, the Decision Regret Scale, and the 36-item Short-Form. These questionnaires respectively measure screen-specific anxiety, cancer worry, distress on screening participation and health related quality of life. Questionnaires were sent before colonoscopy, after histopathology result notification after colonoscopy, and after 6 months.
Results: A total of 1066 participants responded. The overall mean PCQ score declined from 5.8 before colonoscopy to 4.9 after colonoscopy, and was 4.3 after six months. Participants with cancer had a higher anxiety level (mean PCQ 9.7, ± SD 7.3) compared to those who had an advanced adenoma (4.9 ± 5.4), non-advanced adenoma (4.8 ± 6.0) or no abnormalities (3.3 ± 5.0) ($p<0.001$) after colonoscopy, with a significant decline after six months ($p=0.004$). In the no-cancer groups, PCQ scores did not decrease over time. After six months, 17% of participants with no cancer experienced high level of cancer worry (CWS $\geq$ 10) but only 5% reported high level of regret on screening participation (DRS > 25). A good global quality of life was reported in participants with no cancer; patients with cancer reported a decrease in physical and emotional functioning after six months.
Conclusion: A positive FIT is associated with screen-related anxiety and cancer-specific worries up to six months after colonoscopy. Yet, despite some distress, participants displayed no regret on participating in the CRC screening program.

Intestinal motility distal of a deviating ileostomy after rectal resection with the construction of a primary anastomosis: results of the prospective COLO-MOVE study.

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Background: No consensus exists regarding the use of preoperative bowel preparation for patients undergoing a low anterior resection (LAR) and currently, most patients are prepared with mechanical bowel preparation (MBP). Several comparative studies however, show similar outcomes when a single time enema (STE) is compared to MBP, without bearing the risk on adverse side effects associated with MBP. It is hypothesized that results are comparable due to a decrease in intestinal motility following diverting ileostomy construction (DI). The aim of this study is to investigate whether colonic motility distal of the DI is indeed decreased following LAR with the construction of a primary anastomosis and a DI.
Methods: Patients undergoing a LAR resection with primary anastomosis and DI construction were given a STE 2 hours pre-operatively. Radio-opaque markers were inserted in the efferent loop of the DI during surgery, and plain abdominal X-rays were made during the first, third, fifth and seventh postoperative day to visualize colonic motility.
Results: Thirty-nine patients who underwent a LAR with the construction of a primary anastomosis and DI between February 2016 and March 2019 were included. Radio-opaque markers were situated in the right colon in 100%, 100% and 97.1% of the patients during respectively the first, third and fifth postoperative day. One patient had its most distal marker situated in the left colon during day five. In none of the patients, the markers were seen distal of the anastomosis.
Conclusion: Colonic motility is decreased in patients who undergo a LAR resection with the construction of an anastomosis and DI. Therefore, STE seems to be a valid alternative for MBP in patients receiving a DI in the context of LAR with primary anastomosis.

Long term follow-up of rectal cancer patients with a complete response followed in a wait-and-see approach, is there an increased risk for metastasis?

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Background: Patients with a regrowth in a wait-and-see-program are reported to have a higher risk for metastases. This is probably related to an inherent higher risk of incomplete responders, but it cannot be excluded that metastases can arise from the regrowth. The aim of this study was to evaluate the risk of distant metastasis in wait-and-see patients with a clinical(near)complete response (cCR) after neoadjuvant chemoradiation (CRT) for rectal cancer, according to local regrowth and timing of inclusion.
Methods: Patients were included in a wait and see program between 2004 and 2019 when a three modality approach with digital rectal examination, endoscopy and MRI showed a (near) cCR. Patients were followed with frequent endoscopy and MRI every 3 months during the first year, and every 6 months thereafter. Oncological outcomes was assessed with Kaplan-Meier curves and a log rank test.
Results: We analyzed 313 patients with a median FU of 39 months (range 2-158) of which the majority (n=191) were prospectively analyzed. 52% (n=161) patients had an immediate cCR at restaging and 47%(n=147)patients had a near cCR during restaging with a cCR after reassessment of 3 months. 19% of the patients developed a local regrowth within 3 years (n=57, 49 luminal, 3 nodal, 5 both luminal and nodal). 9 patients with local regrowth developed distant metastasis (20%, 95%CI 62-90) within 3 years compared to 11 patients with distant metastasis without LR (5%, 95%CI:92-98) (p <0,001). 7/9 patients developed a local regrowth first before detection of metastasis, 1 patient developed local regrowth and metastasis simultaneously and 1 patient developed metastasis 6 months prior to detection of local regrowth. Patients with a near CR and local regrowth tend to develop more metastasis compared to immediate complete responders who had a local regrowth. 3-year overall survival in patients with local regrowth was 93%(95%CI:80-98) vs. 97%(95%CI:94-99) in patients without local regrowth (p=0.25).
Conclusion: Rectal cancer patients selected for a wait-and-see-program who develop a regrowth have a higher risk of developing distant metastasis, especially in near CR. It is hypothesized that this is related to tumour biology but it remains unsure if metastasis arise from a regrowth. Overall survival outcomes in patients with and without regrowth did not differ significantly.

Highly variable follow-up in patients who refrain from additional surgery after endoscopic resection of a high-risk T1 colorectal carcinoma in the Netherlands.

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Background: The incidence of submucosal invasive (T1) colorectal cancers (CRCs) has increased with the implementation of the national screening program. In case of endoscopic resection of a T1 CRC with histological risk factors for an adverse outcome, the guidelines advise adjuvant surgical segmental resection. For various reasons (comorbidity, low risk of residual cancer, risk of surgery), an additional resection may not be carried out and patients wish to have regular follow-up. A standard protocol is unavailable. In this national survey, an inventory has been made of the surveillance strategy for these patients.
Methods: Dutch gastroenterologists and surgeons participating in the Dutch T1 CRC Working group were asked to participate in an online survey. They were questioned on demographics, baseline staging after detection of a T1 CRC, and follow-up protocols for patients who wish a surveillance strategy instead of adjuvant surgical resection.
Results: 69/130 (53%) physicians (87% gastroenterologist) participated in the survey. In case of an unexpected malignancy after polypectomy, 36/69 (52%) performed full oncological staging, the remainder only in case of high-risk features in the endoscopically removed specimen. Pathology criteria used to determine high risk status were; lymphovascular invasion (100%), resection margin not free/indeterminable (93%), poor differentiation (90%), malignancy ≤ 1 mm from resection margin (78%), tumor budding grade 2/3 (57%), and submucosal invasion depth >1000 µm (47%). We recorded 61 different surveillance strategies in 63 participants, using 19 different combinations of diagnostic tests. Most common used combinations were endoscopy only (n=9); endoscopy and rectal MRI (n=8); endoscopy, rectal MRI, liver ultrasound, chest X-ray and CEA (n=7) and endoscopy, rectal MRI, abdominal CT and CEA (n=6). Endoscopy was used in all schedules. 48/63 (76%) used MRI for a rectal T1 CRC. 30/63 (48%) used abdominal CT and 22/63 (35%) abdominal ultrasound for surveillance. 23/63 performed chest imaging, 60% used serum CEA. Mean follow-up time was 36 months (95% CI 31.5-40.5) for endoscopy, 26 months (95% CI 20.0-31.6) for rectal MRI an 30 months (95% CI 21.7-37.7) for abdominal CT. The interval between surveillance investigations differed from 3-monthly in the first year to >1 year. Peaks were seen at 3, 6, 12, 24, 36 and 48 months for each modality. Most physicians experienced none (27/69), or 1-3 (28/69) recurrences.
Conclusion: There is a high inter-practitioner variety in the follow-up of patients with an endoscopically resected high-risk T1 CRC who refrain from adjuvant surgery. A prospective study to evaluate the efficacy and safety of strict surveillance is needed.

Performance of proposed algorithms for establishing risk of adverse outcome in T1 colorectal carcinoma

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Background: Recently, two simplified prediction models have been published to select patients for adjuvant surgery after endoscopic resection of T1 colorectal cancer (CRC). The Scottish model identified low-risk cases based on completeness of resection (margin >0.1 mm) and absence of lymphovascular invasion (LVI). The French model identified low-risk cases based on a resection margin of ≥1 mm. Considering a 1.7% mortality rate for oncological surgical resection of T1 CRC, both models showed promising results. However, they were never externally validated.
Methods: In this study, we investigated two proposed algorithms along with the Dutch guideline for prediction of adverse outcome in T1 CRC after endoscopic resection. We defined adverse outcome as lymph node metastasis (LNM) at baseline or any recurrence at follow-up. Cases were derived from a Dutch multicenter retrospective observational cohort of patients with an endoscopic resection of a T1 CRC diagnosed from 2014-2017. Risk classification by the Dutch algorithm included absence of LVI, good/moderate differentiation and a resection margin of >1 mm as low-risk factors. Endpoints were the percentage of low-risk cases identified, sensitivity and specificity for each model.
Results: In 754 endoscopically treated T1 CRCs (median follow-up 20 months, IQR 13-28), 250 patients (33.1%) had secondary surgery. A total of 55 (7.3%) patients had an adverse outcome. LNM was present in 40 (5.3%) and recurrence in 17 (2.3%) patients (2 patients with LNM also developed recurrence). The Dutch, Scottish and French models identified 256 (35%), 394 (68%), and 347 (70%) patients as low-risk respectively. Sensitivity and specificity were 92.5% & 36.6%, for the Dutch model, 77.1% & 71.1%, for the Scottish model and 67.7% & 72.4%, for the French model. This corresponded with 4 (0.5%), 8 (1.4%), and 11 (2.2%) missed cases with an adverse outcome in the total cohort for the Dutch, Scottish and French model respectively. Within the predicted high-risk groups, 49 (10%), 27 (15%), and 23 (15%) patients truly had an adverse outcome, while 437 (59%), 157 (27%) and 128 (26%) of all cases were false-positive, respectively.
Conclusion: For endoscopically treated T1 CRCs the analyzed models could adequately identify cases at low risk for adverse outcome in a large cohort. These results show that a stringent model, such as the Dutch model, has the highest sensitivity, but leads to 59% of patients being referred for surgery without any benefit. Less stringent models such as the Scottish and French models may result in an absolute reduction of unnecessary surgery referrals of up to 33%, and with missed adverse outcomes at the mortality level of adjuvant surgery.

The sensitizing anti-tumor effect of interferon-bèta to gemcitabine treatment in human pancreatic cancer cells in vitro

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Background: Patients with resectable pancreatic cancer are indicated for adjuvant gemcitabine, even though the response rate is less than 20%. New therapeutic options are necessary to improve the tumor response to gemcitabine treatment. We aimed to investigate whether interferon-bèta (IFN-β) could increase the sensitivity of human pancreatic cancer cells to gemcitabine treatment.
Methods: Three human pancreatic cancer cell lines (BxPC-3, CFPAC-1, and Panc-1) were used to assess the chemosensitizing effects of IFN-β *in vitro.* Cells were pre-treated for 4, 12, 24 or 72 hr with (100-1000 IU/ml) IFN-β, followed by 72 hr (0.1-5 ng/ml) gemcitabine. The effect of drug treatment on cell growth was determined by measuring the total amount of DNA per well. Cytotoxic and cytostatic effects were calculated as the surviving fraction and mean colony size. Cell cycle analysis was performed and quantitative RT-PCR was used to measure the expression of nucleotide metabolism enzymes of gemcitabine.
Results: Gemcitabine and IFN-β inhibited cell growth in a dose-dependent manner. IFN-β pre-treatment increased the sensitivity to gemcitabine treatment in all three cell lines, with 4-, 14- and, 1.6-fold lower EC_{50} values in BxPC-3, CFPAC-1, and Panc-1, respectively (all $P<0.001$). The maximal inhibitory effect of 0.5 ng/ml gemcitabine increased with 35%, 71%, and 8% in BxPC-3, CFPAC-1, and Panc-1, respectively ($P<0.001$, $P<0.001$, and $P=0.01$, respectively). Findings were confirmed when assessing colony formation. IFN-β increased the percentage of cells in the S-phase in BxPC-3 and CFPAC-1 with respectively 12% and 7% ($p<0.001$ and $p<0.05$, respectively). Thereby, IFN-β upregulated expression of genes involved in the intracellular uptake of gemcitabine (*hCNT1* with 252% in BxPC-3, and 223% in CFPAC-1; *hCNT3* with 127% in CFPAC-1; all $p<0.001$).
Conclusion: Combined treatment of IFN-β with gemcitabine may provide us a new approach to increase chemosensitivity in patients with pancreatic cancer. (Pre-) clinical studies are warranted to assess this efficacy *in vivo*.

ARX, a novel biomarker for metastatic risk in pancreatic neuroendocrine tumors can be determined in endoscopic ultrasound fine needle aspiration. A call for further validation.

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Background: The endocrine transcription factors ARX and PDX1 were recently reported as strong prognosticators for the risk of liver metastases in non-functional pancreatic neuroendocrine tumors (NF-PanNETs). Since tumor size is currently the only pre-operative marker used to decide whether or not to operate, additional pre-operative prognostic biomarkers of behavior would be relevant. However, the use of such markers on cytology specimens would be critical.
Methods: 19 endoscopic fine needle aspiration paraffin cytology blocks and 13 corresponding surgical specimens with the diagnosis PanNET were collected together with clinicopathological factors. Presence of tumor cells was confirmed on hematoxylin and eosin stained slides. Consecutive tissue sections were used for immunohistochemical staining of ARX, PDX1 and Synaptophysin and scored by two blinded observers.
Results: Of 19 FNA blocks, 9 were ARX+, 2 PDX1+, 8 double positive. Sensitivity and specificity in cytology for ARX and PDX1 immunohistochemistry were 100% and 100%, and 100% and 75% respectively using the surgical specimen as reference. There was a 100% inter-observer agreement (Kappa 1). 5 cases metastasized to the liver, all ARX positive, 2 were both ARX and PDX1 positive.
Conclusion: ARX and PDX1 are markers that can reliably be interpreted between pathologists. There was a 100% concordance in ARX expression between cytology and surgical specimens. PDX1 had 2/13 false positive cases in cytology. In contrast to ARX, PDX1 is also expressed in pancreatic acinar and ductal cells, and more abundantly in duodenum and islets, explaining potential false positive PDX1 staining due to contamination. Two of the metastatic PanNETs were in the double positive group, ARX might therefore better be used as a sole marker of malignant behavior, especially because its interpretation seems more reliable in cytology.

Methodology of Pancreatic Juice Collection from the Duodenum for Biomarker Discovery and Early detection of Pancreatic Cancer

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Background: For Pancreatic cancer (PC), early detection of high-grade precursor lesions is the only chance of cure. Surveillance by imaging, in individuals with an increased risk to develop PC, does not enable timely detection. Hence, there is an urgent need for reliable biomarkers. Pancreatic juice (PJ) is a promising candidate biomarker source as it is in direct contact with the ductal epithelial lining from which PC arises.
We aimed to determine the technique and duration of duodenal PJ collection after secretin stimulation that results in highest yield of cfDNA, exosomes, miRNA, proteins and cells (organoid growth).
Methods: PJ from patients suspected of sporadic PC and individuals under surveillance for hereditary predisposition of PC (FPC) was collected from the duodenum during EUS after secretin stimulation. For each subject, 2 collection techniques (i.e. suction by a through-the-scope catheter positioned close to the ampullary orifice or the endoscopic channel) and 2 time periods (i.e. first and second 4 min.) were compared. The yield of DNA, cfDNA/gDNA-ratio and %mutated KRAS were compared. Exosomes were isolated from PJ and analyzed (Nanoparticle Tracking Analysis; NTA). Total protein, cytokine and (pancreas specific) PLA2G1B concentrations were quantified (Lowry assay; ELISA). Organoids were grown (Broutier et al.[2]) from cellular content of PJ to assess applicability for personalized medicine. For statistical analysis, either a Friedman's or Wilcoxon signed-rank test was performed.
Results: Presence of pancreatic content was confirmed by PLA2G1B in all PJ collection methods (32 samples, 8 individuals), with exception of 6 FPC samples (collected with cathether). Collection through the endoscopic channel during the second time period resulted in the highest yield of DNA ($p=0.017$, $p=0.039$), albeit cfDNA/gDNA ratio was highest in the first 4 min. ($P=0.002$). Mutated KRAS was detected in all samples (% mutated KRAS: 0.09-1.01); indiscriminate of collection technique or duration. Exosomes (size range: 81.6-244.6 nm, 2 FPC kindreds) were present in all 8 analyzed samples, and yields were highest in samples collected with a catheter. The overall protein concentration of PJ collected through the endoscopic channel during the first 4 min. was highest (64 samples, $p=0.02$). IL-6, IL-13, TNF-α, IL-8, IL10, IFN-γ and TGF-β concentrations did not differ between the collection methods. 16/65 (25%) PJ samples grew into organoids (85% in first 4 min.).
Conclusion: We show feasibility of DNA, exosome and protein quantification and organoid growth from pancreatic juice. Duodenal collection at EUS 4 min. after secretin injection resulted in a high yield of cfDNA, exosomes, proteins and organoids.

Mycobacterium avium subspecies paratuberculosis seropositivity is associated with a more complicated disease course in both Crohn's disease and ulcerative colitis and might be linked to immunomodulating genes

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Background: The role of *Mycobacterium Avium* subspecies *Paratuberculosis* (MAP) in Crohn's disease (CD) is controversial. Due to similarities between CD and Johne's disease, chronic enteritis in cattle caused by MAP, its role in CD etiology has been studied repeatedly. CD patients seem more prone to MAP than controls. Whether MAP acts as causative agent, inflammatory trigger or secondary invader remains elusive. Over 200 genetic loci have been identified in IBD, but genetic determinants of MAP exposure are poorly studied. Moreover, whether MAP exposure affects CD disease course is unclear. In this study, we explore genetic determinants of MAP exposure and the association of MAP with IBD course.
Methods: Detailed clinical characteristics, serum and DNA were obtained from 847 patients with IBD, as well as serum samples from 53 healthy controls. MAP serology was determined with two conjugates (Protein A:IgA, IgE, IgG1,2,4 and IgM, Protein G:IgG1-4) to measure antibody response to MAP antigens (Protoplasmic MAP antigen and 3 recombinant antigens). Cut-off values according to Bernstein et al. were used to determine seropositivity. Logistic regression models were used to explore associations between MAP and IBD course. Patients were genotyped with the Illumina Global Screening Array, genetic data were imputed to the Haplotype Reference Consortium reference panel.
Results: Patients with IBD had similar rates of MAP seropositivity as controls (*P*>0.2). Baseline characteristics were comparable between seropositive and seronegative patients. Disease location, behavior and extent weren't associated with seropositivity (*P*>0.1). Multivariate analyses identified prot. A seropositivity as risk factor of more complicated disease course in CD (biological use [OR 2.2;95%CI1.0-4.8]) and UC (surgery [OR 2.0;95%CI1.0-4.0]). Using GWAS, 50 genetic loci were associated with seropositivity at a suggestive genome-wide significance level ($P<5x10^{-5}$). One of these loci (rs7901290[*P*=8E-7;OR=1.9]) harbors the *CAMK1D* gene, involved the regulation of granulocytes. Another associated locus (rs1001792[*P*=4E-7;OR=1.9]) harbors the *TNFRSF10B* gene, associated with and apoptosis induction.
Conclusion: IBD patients had similar MAP seropositivity rates as healthy controls. Seropositivity showed no association with IBD location. However, seropositivity for prot. A, representing mucosal and acute phase immunoglobulins, was identified as a risk factor of more complicated disease in both CD and UC. GWAS shows suggestive associations between seropositivity and immunomodulating genes. Future studies using Ig isotype-specific tests are needed to validate these findings and explore interactions between genetic susceptibility, MAP exposure and IBD.

Bacteroides fragilis is more prevalent in Crohn's disease exacerbations while strengthening the intestinal epithelial barrier in a strain-dependent manner

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Background: Crohn's disease (CD) is a chronic relapsing inflammatory gastro-intestinal disease with a high disease burden. Evidence is increasing that intestinal barrier dysfunction and microbial dysbiosis play a role in onset and course of CD. Among others, *Bacteroides fragilis* has been associated with CD. In addition, *B. fragilis* toxin (Bft) was found to disrupt the intestinal epithelial barrier *in vitro* and Ubiquitin was found as potential virulence factor, acting on host immune response. This study aims to investigate the role of *B. fragilis* in the pathophysiology of CD, focusing on prevalence and intestinal epithelial barrier function.

Methods: To investigate the presence of *B. fragilis*, Bft and Ubiquitin, we selected 183 CD patients from our extensive IBD South Limburg cohort. Disease activity was determined by faecal calprotectin (<100µg/g=remission; ≥250µg/g=exacerbation). Faecal DNA was investigated by qPCR and analysed using Chi-square test.

To examine the impact of *B. fragilis* on barrier function, we cultured and isolated six *B. fragilis* strains with various genetic profiles of *bft* and *ubiquitin*. Differences in coding sequences and secreted metabolites were examined by whole-genome sequencing (MiSeq) and Nuclear Magnetic Resonance (NMR) Spectroscopy, respectively. Next, culture supernatant and outer membrane vesicles (OMVs) were isolated and luminally applied to Caco-2 cell monolayers. After 24h incubation, the difference in transepithelial electrical resistance (TEER) was determined.

Results: *B. fragilis* prevalence was 15% higher ($p<0.023$) in active CD compared to remission. *Bft* and *ubiquitin* prevalence was comparable in both groups. Interestingly, TEER results demonstrate that supernatant of *bft* positive strains increased TEER ($p<0.001$) compared to *bft* negative strains or vehicle control, suggesting an improved epithelial integrity. However, isolated OMVs of all strains did not show any alterations in TEER. *bft* positive and negative strains cannot be discriminated by other known coding sequences than *bft* and Metalloprotease II. NMR analysis did not reveal clear differences in metabolic profiles between the supernatants of the strains.

Conclusion: This study confirms in a large well-defined patient cohort that *B. fragilis*, but not *bft* or *ubiquitin* positive strains specifically, is more prevalent in active CD, suggesting that it might play a role in exacerbations. Surprisingly, *B. fragilis* components did not impair the epithelial barrier and components of *bft* positive strains even improved intestinal barrier function, which warrants further investigation. This unexpected finding stresses the relevance of extending current research on the functional role of relevant microorganisms.

Systemic iron deficiency is associated with activation of the HIF-1a pathway in the intestinal mucosa of patients with Inflammatory Bowel Disease

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Background: Many patients with IBD exhibit extra-intestinal disease symptoms and anemia is the most common hematological manifestation affecting up to two thirds of the patients. IBD-associated anemia is considered to be the result of a combination of iron deficiency anemia (IDA) and anemia of chronic disease (ACD). Iron homeostasis is intimately associated with oxygen metabolism in the intestinal mucosa, which is regulated by the Hypoxia-inducible factor 1a (HIF-1α) pathway. Here, iron (Fe^{2+}) is a critical cofactor to the hydroxylase reaction that targets the HIF-1α protein to degradation in the presence of oxygen. Therefore, an interplay between Fe^{2+} levels and the HIF-1α pathway regulates oxygen sensing and may be a crucial mechanism underlying IDA in IBD patients. In this study, we hypothesize that IBD patients with IDA present a higher intestinal mucosal activation of HIF-1α pathway than patients with normal systemic iron levels.

Methods: Biopsies were collected from both ileum and colon and evaluated for their inflammatory status. In addition, serum laboratory parameters of iron metabolism close to biopsy dates (hemoglobin, MCV, free iron, ferritin, TYBC, transferrin, transferrin saturation) were documented. Based on serum iron status and inflammation, patients were categorized into either a group having 'normal' iron status (n=81) or a group having systemic IDA (n=29). RNA sequencing data (n=167 entries) from intestinal biopsies of 110 IBD patients were retrospectively analyzed for 18 HIF-1α pathway genes, including *HIF1A*, *HIF2A*, HIF-hydroxylases (*EGLN1*, *EGLN2*) and HIF-1α target genes (*EGLN3*, *CA9*, *PDK1*, *SLC2A1*, *MUC3*, *TFF3*, *A2BAR*, *SLC29A1*, *ADK*, *HAMP*, *SLC11A2*, *HMOX1*, *TFRC* and *TF*), some of which are involved in iron metabolism, and analyzed for differential expression with iron status.

Results: The HIF-1α pathway was activated in inflamed ileal and colonic tissue compared to adjacent non-inflamed tissue. Moreover, IBD patients with systemic IDA showed increased expression of HIF-1/2α target genes in inflamed tissue, with significantly elevated mucosal levels of ileal *SLC11A2* (P<0.05) and *PDK1* (P<0.05) and colonic *TFRC* (P<0.05) levels. mRNA levels of *HIF1A*, *HIF2A* and the HIF-hydroxylases *EGLN1* and *EGLN2* were not different between patients with or without IDA.

Conclusion: IBD patients with systemic iron deficiency show differential expression of HIF-1α target genes *SLC11A2*, *PDK1*, *SLC2A1* and *TFRC* as compared to patients with a normal iron status. These preliminary data suggest an association of systemic iron status in IBD and activation of the HIF-1α pathway in the intestinal mucosa. These data reveal a possible disease mechanism involved in IBD-associated anemia that can be modulated by treatment.

Activating FXR specifically in the liver protects against DSS colitis

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Background: The intestinal barrier protects the host against exposure to bacteria and toxins present in the lumen. Goblet cells in the epithelial lining secrete mucins, which form a hydrated gel known as the mucus barrier. IBD patients suffering from chronic intestinal inflammation, and various IBD models display a compromised mucus barrier. In addition, ablation of Muc2, encoding mucin, results in colitis development and colon cancer.
We showed before that activating the bile acid receptor FXR by the semi-synthetic ligand INT-747 leads to amelioration of colitis in wild type (WT) mice, but not in FXR total knockout (KO) mice. We now generated liver- and intestinal-specific FXR knockout mice to study which organ is responsible for the protective effect. We hypothesize that hepatic bile acid secretion determines the gut microbiome composition and thereby the mucus barrier integrity, crucial to prevent inflammation and maintain gut health.
Methods: DSS-colitis was induced in liver-specific, intestinal-specific and total body FXR KO mice and in WT controls. DSS was supplied in the drinking water for 7 days. Mice received daily an oral gavage with INT-747. Rectal bleeding was investigated as marker of inflammation. Among others, bile composition, intestinal permeability, colonic gene expression, microbial composition and mucus barrier characteristics were determined.
Results: In line with previous findings, activation of FXR reduced inflammation, as shown by lower rectal bleeding scores in WT mice. This effect was FXR specific since total FXR KO mice were not protected. Remarkably, intestinal-specific FXR KO mice showed reduced rectal bleeding scores upon INT-747 treatment, demonstrating that intestinal FXR is not responsible for the protection against inflammation. In contrast, the liver-specific FXR KO mice were not protected against DSS induced colitis, and activating liver FXR specifically could thus reduce colonic inflammation.
Gene expression profiles showed that knocking out FXR in the liver has a more drastic effect on the colon gene expression than knocking out FXR in the intestine itself. The differentially expressed genes in colons of the liver-specific KO mice were mainly involved in inflammation and differentiation.
The antimicrobial genes Reg3g and Reg3b were downregulated in the colons of intestinal-specific KO mice, but upregulated in the colons of liver-specific KO mice compared to WT, suggesting differences in the gut microbiome and the mucus barrier, which is currently under investigation.
Conclusion: Activating liver FXR can protect against DSS induced colitis.

Levels of serum free thiols are superior to fecal calprotectin in predicting endoscopic disease activity in Inflammatory Bowel Disease

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Background: Oxidative stress is considered to play a pivotal role in the pathogenesis of Inflammatory Bowel Diseases (IBD). Serum free thiol groups (R-SH) reliably reflect systemic oxidative stress, since they are readily oxidized by reactive species. In this study, we aimed to establish concentrations of serum free thiols in IBD and assessed their potential utility as a discriminating biomarker for different grades of endoscopic disease activity.
Methods: Serum free thiol concentrations were measured in 78 IBD patients (31 patients with Crohn's disease (CD) and 47 patients with ulcerative colitis (UC)) and 50 healthy controls, adjusted for serum albumin. Albumin-adjusted serum free thiols were analyzed for associations with clinical and biochemical disease parameters. Endoscopic disease activity was assessed by the Simple Endoscopic Score for CD (SES-CD) and Mayo endoscopic subscore for UC, that were merged to create an IBD composite endoscopy score. Nonparametric ROC estimation with cross-validated areas under the curves (AUCs) was used to assess the discriminative value of serum free thiols regarding the degree of endoscopic disease activity (n=54) and to compare this to fecal calprotectin (n=28) in patients for which those data were available.
Results: Mean serum free thiol concentrations were significantly decreased in both CD and UC as compared to healthy controls (19.4±3.1 and 17.8±3.4 vs. 21.1±1.9 μmol/g of albumin, $P<0.001$). Albumin-adjusted serum free thiols significantly inversely associated with age ($r = -0.49$, $P<0.01$), platelet counts ($r = -0.29$, $P<0.01$) and fecal calprotectin levels ($r = -0.32$, $P<0.05$). Patients with severe endoscopic disease activity demonstrated significantly lower serum free thiol concentrations compared to patients having mild disease activity (16.2±3.1 vs. 20.4±3.4 μmol/g of albumin, $P<0.01$). Finally, serum free thiols highly accurately discriminated between mild and moderate-to-severe disease activity, better than fecal calprotectin (FC) levels (AUC=0.87, $P<0.001$ vs. AUC=0.76, $P<0.05$, respectively). After cross-validation, serum free thiols maintained their predictive accuracy (AUC=0.89, $P<0.001$).
Conclusion: Serum free thiols are reduced in IBD as compared to healthy controls and strongly correlate with the degree of endoscopic disease activity. Quantifying systemic redox status in IBD may be a promising, minimally invasive strategy to monitor IBD disease activity. Future studies are warranted to further explore free thiols as potential biomarker for IBD disease activity in larger, prospective patient cohorts and serially assess their predictive value in relation to disease course and therapeutic interventions.

Validation of biomarkers for Crohn's disease using peripheral blood cells .

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Background: ILCs are involved in maintaining the integrity of epithelial tissues during homeostasis and are important in the repair of epithelial tissues upon damage, as seen during inflammation. ILCs precursors (pILCs) are present in peripheral blood from healthy individuals. These pILCs are not activated and express the CD62L lymph node homing receptor allowing them to migrate from the bloodstream to lymph nodes, similar as naive T cells do. We hypothesize that pILCs can become activated when lymph nodes drain an inflammatory area, upon which they will lose CD62L expression. Upon entry into the blood circulations, activated CD62L$^-$ILCs can be found within the PBMC fraction. Thus we expect that the increase of CD62L-ILC and the concomitant reduction of pILCS in the blood can act as a biomarker for active inflammation in the gut.
Methods: Within this project, PBMCs from 100 patients with IBD will be analyzed every 3 months using Flow cytometry and Mass cytometry.
Results: The first analysis by FACS has shown that the number of pILCs in peripheral blood from Crohn's patients with active disease has indeed been reduced. Furthermore, the percentage of CD62L$^+$ pILCs in patients with inactive disease is comparable to healthy controls.
Conclusion: We are now setting up an extensive CyTOF panel of 39 parameters to further explore the suitability of the activation status of ILCs as a valid biomarker in larger groups of patients.

Indefinite dysplasia predicts advanced colorectal neoplasia in patients with inflammatory bowel disease undergoing colonoscopic surveillance

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Background: The clinical significance of indefinite dysplasia (IND) among patients with inflammatory bowel disease (IBD) undergoing colonoscopic surveillance for colorectal neoplasia (CRN) is poorly defined. Current guidelines for prevention of colorectal cancer in patients with IBD do not offer specific recommendations for management of IND.
Methods: We conducted a retrospective cohort analysis (2001-2017) to define the risk of developing advanced CRN (ACRN, high-grade dysplasia or colorectal cancer), CRN (low-grade dysplasia [LGD] or ACRN), or colectomy among patients with IND. Eligibility criteria included: confirmed colonic IBD with duration ≥ 8 years or concomitant primary sclerosing cholangitis, no prior history of ACRN or colectomy, and participation in CRN surveillance. We analyzed 1) time to ACRN, CRN and colectomy (Kaplan Meier analysis) and 2) independent predictors of (A)CRN after adjusting for relevant confounders including severity of inflammation (Cox regression analysis with time-changing covariates).
Results: We included 492 patients, yielding 2149 person-years of follow-up. Fifty-three (10.8%) patients were diagnosed with IND without prior or synchronous LGD. Compared to patients without dysplasia (NoD), patients with IND had a significantly higher risk of ACRN (adjusted HR 6.85; 95% CI 1.78–26.4) and CRN (adjusted HR 3.25; 95%CI: 1.50–7.05), but not colectomy (p=0.78). Compared to IND, LGD was associated with a significantly higher risk of ACRN (p=0.05). Following a diagnosis of NoD, IND, and LGD, the incidence rates of ACRN were 0.4%, 3.1% and 8.4% per patient-year, respectively.
Conclusion: In this retrospective cohort analysis from a tertiary IBD referral center with consistent histopathologic grading of dysplasia, IND was associated with an increased risk of (A)CRN. These findings warrant external validation and a reappraisal of the CRN surveillance guidelines if confirmed.

Intestinal stenosis in Crohn's disease show a generalized upregulation of genes involved in collagen processing and recognition that could serve as novel anti-fibrotic drug targets

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Background: Crohn's disease (CD) is complicated by intestinal fibrosis that causes symptomatic stenosis in 70 % of patients. Pharmacological therapies against intestinal fibrosis are not available. We have investigated whether pathways involved in collagen processing (such as post-translational modification) are upregulated in intestinal fibrosis, and if so, which targets in the pathways can be inhibited in order to modulate the excessive extracellular matrix formation.
Methods: Human fibrotic and non-fibrotic terminal ileum was obtained from patients with CD undergoing ileocecal resection due to stenosis. Genes involved in the modification or degradation/binding of collagen were analyzed using a custom-made microfluidic card-based low-density array. A literature search was performed to find potential anti-fibrotic drugs that target proteins/enzymes involved in collagen synthesis, its degradation and its recognition.
Results: mRNA expression of collagen type I (*COL1A1,* 0.75±0.16 vs. 56.92±33.09, *P*=0.02, 76-fold) and III (*COL3A1,* 2.45±0.73 vs.41.82±97.04, *P*=0.02 58-fold) was increased in the fibrosis-affected part. mRNA expression of proteins involved in both intra- and extracellular post-translational modification of collagens (prolyl- and lysyl hydroxylases, lysyl oxidases, chaperones) and expression of collagen-degrading enzymes (MMPs and cathepsin K) or collagen receptors were also upregulated in the fibrosis-affected part. A literature search on these upregulated genes revealed several potential anti-fibrotic drugs.
Conclusion: Expression of genes involved in post-translational modification of collagen in intestinal fibrosis affected terminal ileum of patients with CD reveals a plethora of drug targets. Inhibition of post-translational modification and/or processing of collagens might attenuate fibrosis formation in the intestine in CD. Which compound has the highest potential will depend on a combination anti-fibrotic efficacy and safety, especially since some of the enzymes play key roles in the physiology of collagen.

MELD score changes and clinical outcome following DAAs in HCV-infected patients with cirrhosis

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Background: Treatment with direct-acting antivirals (DAAs) has shown potential to improve MELD scores and clinical outcome in patients with hepatitis C virus (HCV) related cirrhosis. However, it remains unclear how MELD score changes relate to clinical outcome following DAAs. We aimed to assess the event-free survival, and its relation to changes in MELD score, after DAA-induced SVR.
Methods: All consecutive patients with chronic HCV infection and cirrhosis treated with DAAs in 4 international hepatology clinics were included in this cohort study. Primary endpoint was clinical disease progression, defined as decompensation, hepatocellular carcinoma, liver transplantation or death. Cox regression analyses were performed stratified for CTP status at baseline, and change in MELD (ΔMELD) calculated after 6 months.
Results: 876 patients were included with a median (IQR) follow-up of 25 (17-33) months. Median (IQR) age was 59 (54-65) years and 152 (17%) had genotype 3. At baseline, 728 (83%) patients had CTP-A cirrhosis and 148 (17%) patients had CTP-B/C. SVR was attained in 655 (90%) CTP-A patients and 120 (81%) CTP-B/C patients. Clinical disease progression was experienced by 95 CTP-A patients and 90 CTP-B/C patients. Among patients with SVR, cumulative event-free survival was 92% and 45% at 24-months, in patients with CTP-A and CTP-B/C respectively (p<0.001). Multivariable Cox analyses showed SVR was independently associated with a reduced event-free survival (adjusted hazard ratio [aHR] 0.35, 95%CI 0.22-0.57, P<0.001) in patients with CTP-A cirrhosis. This association was not significant in patients with CTP-B/C cirrhosis (aHR 0.77, 95% CI 0.45-1.34, P=0.36). Among SVR patients with CTP-B/C, median (IQR) MELD at baseline was 13 (11-15) and median (IQR) ΔMELD 6 months after DAA start was -0.11 (-1.30-1.51), with 19 (18%) of patients showing a ΔMELD ≤-2. Compared to ΔMELD >-2 and <2, ≥2 points decline was not associated with an improved event-free survival (aHR 1.06, 95% CI 0.52-2.16, P=0.86). Patients with ≥ 2 points MELD increase had a significantly decreased event-free survival (aHR 2.23, 95%CI 1.18-4.18, P=0.013).
Conclusion: In this international cohort of patients with chronic HCV infection and cirrhosis, DAA-induced SVR was associated with a reduced occurrence of clinical disease progression in patients with CTP-A. In patients with CTP-B/C cirrhosis, a clinically relevant decrease in MELD score (≥2 points) was not associated with an improved clinical outcome.

The observed clinical outcome following DAA-induced SVR among patients with HCV-cirrhosis is better than their predicted outcome without SVR

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Background: Long-term randomized placebo-controlled trials on cirrhosis-related complications and mortality are lacking in patients with chronic hepatitis C virus (HCV) infection. Consequently, the clinical efficacy of antiviral therapy has been based on results of cohort studies comparing those with sustained virological response (SVR) to those without SVR. Similar analyses in cohort treated with direct-acting antivirals (DAAs) are hampered by the fact that only a minority (<10%) of patients do not attain SVR. Therefore, to substantiate the impact of successful DAA therapy, we aimed to assess the observed event-free survival among patients with cirrhosis and DAA-induced SVR in comparison to their predicted survival in case SVR would not have been attained.

Methods: All consecutive patients with chronic HCV infection and compensated cirrhosis treated with DAAs in 4 international hepatology clinics were included in this cohort study. The primary endpoint was clinical disease progression, defined an event of decompensation, hepatocellular carcinoma (HCC), liver transplantation or death. The observed survival free of clinical disease progression was based on Kaplan Meier analyses. The predicted event-free survival was based on a previously developed and validated objective risk score, including age, platelets, AST/ALT ratio, gender and HCV genotype (C-statistic of 0.80).

Results: A total of 728 patients with CTP-A cirrhosis were included with a median (IQR) follow-up of 25 (18-32), during which 95 patients experienced clinical disease progression. 470 (65%) patients were male and 116 (16%) had HCV genotype 3. At baseline, the median (IQR) age was 59 (54-65) years, the median (IQR) platelets were 122 $x10^9$/L (85-172), and median (IQR) AST/ALT ratio was 0.98 (0.76-1.25). SVR was attained in 656 (90%) patients, of whom 67 experienced clinical disease progression. The observed survival for SVR patients was 97.6%, 94.8% and 85.8% at 1, 2 and 3 years of follow-up, respectively. In comparison, the median predicted survival in case these patients would not have attained SVR patients was lower with 92.5%, 84.0% and 76.2% at 1, 2 and 3 years of follow-up. The observed and median predicted survival in patients without SVR was 87.1% and 90.2% at 1 year, 73.0% and 79.5% at 2 years, and 58.3% and 70.1% at 3 years of follow-up.

Conclusion: In this international cohort of patients with chronic HCV infection and cirrhosis, the observed rate of clinical disease progression following SVR was substantially lower as would be expected in case of ongoing HCV infection. These results highlight the potential clinical impact of DAA-induced SVR.

Improved survival prediction and comparison of prognostic models for patients with hepatocellular carcinoma treated with sorafenib

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Background: The 'Prediction Of Survival in Advanced Sorafenib-treated HCC' (PROSASH) model aimed to address the heterogeneous survival of patients with hepatocellular carcinoma (HCC) treated with sorafenib in clinical trials, but lacked validation in daily clinical practice. This study aimed to validate, compare and optimize this prognostic model.
Methods: A retrospective analysis was performed in patients treated with sorafenib for HCC at 5 tertiary European centres. Patients were classified according to the PROSASH model. In addition, an optimized model (PROSASH-II) was developed using the data of 4 centres (training set) and tested in an independent dataset (validation set). These models for overall survival (OS) were then compared with existing prognostic models.
Results: A total of 920 patients with a median OS of 8.3 months (95% CI 7.6-9.2) were available for this study, divided in a training (n=615) and validation set (n=305). The PROSASH model could be validated in 445 patients in whom clear differences between the 4 risk groups were observed (OS 16.9-4.6 months). The optimized PROSASH-II model incorporated 6 parameters that were independently associated with OS: the serum albumin, bilirubin and alpha-fetoprotein, and macrovascular invasion, extrahepatic spread and the largest tumour size on imaging. Both PROSASH and PROSASH-II showed improved discrimination (C-index 0.62 and 0.63, respectively) compared with existing prognostic scores (C-index ≤0.59).
Conclusion: In HCC patients treated with sorafenib, individualized survival prediction and risk group stratification using baseline clinical parameters may be improved with the PROSASH and PROSASH-II prognostic models.

Changes in total and regional liver function after selective internal radiation therapy (SIRT) for hepatocellular carcinoma

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Background: Studies assessing the impact of selective internal radiation therapy (SIRT) on the total and regional liver function in patients with hepatocellular carcinoma (HCC) are sparse. This study aimed to 1) assess the changes in total and regional liver function in these patients using hepatobiliary scintigraphy (HBS) and 2) determine the predictive value of HBS for post-SIRT liver failure.
Methods: Patients treated with SIRT for HCC between 2011 and 2018, underwent ^{99m}Tc-mebrofenin HBS with SPECT/CT before and 6 weeks after SIRT with yttrium-90. The corrected mebrofenin uptake rate (cMUR) was measured for the total liver, and for treated and non-treated liver regions. The primary outcome was the change in total liver and regional cMUR following SIRT. Additionally, pre- and post-SIRT cMUR were compared between patients with and without post-SIRT liver failure.
Results: A total of 31 HCC patients were included in this study, all Child-Pugh-A and mostly with intermediate (71%) or advanced stage (26%) HCC. Twenty-seven patients had pre- and post-SIRT HBS available, of whom 20 underwent a lobar SIRT. The $cMUR_{total}$ declined from 5.8 to 4.5 %/min/m^2 ($p<0.001$). Patients developing liver failure (n=11) showed a trend towards a lower $cMUR_{total}$ after the SIRT (3.3 vs 4.9 %/min/m^2, $p=0.057$). Lobar SIRT induced a decline in $cMUR_{total}$ (5.3 to 4.6 %/min/m^2, $p=0.002$) and a decrease in cMUR of the treated liver region (2.9 to 1.7 %/min/m^2, $p<0.001$), without an increase of the contralateral lobe (2.4 to 2.0 %/min/m^2, $p=0.478$).
Conclusion: In patients treated with SIRT for HCC, HBS detected a decrease in total liver function and loss of function in the treated liver region. The function of the non-treated liver region remained stable. In this pilot study, there were no pre-SIRT differences in total or regional cMUR between patients with and without post-SIRT liver failure.

Hepatitis B core related antigen levels predict recurrence-free survival in patients with HBV associated early stage hepatocellular carcinoma: results from a Dutch long-term follow-up study

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Background: Prognosis of HBV associated hepatocellular carcinoma (HCC) remains poor due to high rates of recurrence and progression of underlying liver disease. Antiviral therapy is effective at inhibiting HBV DNA replication but does not influence intrahepatic cccDNA replication and its associated oncogenic processes. The new biomarker hepatitis B core related antigen (HBcrAg) strongly correlates with intrahepatic cccDNA replicational activity. We aimed to study the relationship between HBcrAg levels and outcome in HBV associated HCC.
Methods: Patients diagnosed with HBV associated HCC from 2000 through 2018 at our tertiary referral hospital in the Netherlands were enrolled. Serum HBcrAg levels were measured using Lumipulse G HBcrAg assay on a LUMIPULSE G1200 analyzer the time of diagnosis, and analyzed for association with overall and recurrence-free survival, adjusted for BCLC stage and other established predictors, both in the overall population and in those with early stage HCC (BCLC stage 0 and A).
Results: A total of 122 patients were enrolled, of whom 53 (42%) were Caucasian and 36 (30%) Asian. Median follow-up was 23.11 months (IQR 5.68 – 68.53 months), and the 1-, 3-, 5- and 10-year overall survival rates were 62%, 41%, 37% and 25%. Patients had BCLC 0-A/B/C/D stage in 56/36/10/20.
In the overall population BCLC stage was the strongest predictor of survival ($p<0.0001$), whereas HBcrAg levels did not predict outcome (adjusted HR: 1.074, 95%CI: 0.898-1.284, $p=0.436$).
Among patients with early stage HCC (BCLC 0 or A, n=56), 39 received local therapy and 14 received a liver transplant. HBcrAg levels at the time of HCC diagnosis were independently associated with overall survival (adjusted HR 1.528 (95% CI: 1.024-2.282) $p=0.038$) and recurrence-free survival (adjusted HR 2.010, 95% CI: 1.144-3.531), adjusted for age, gender, Child-Pugh score, HBsAg levels and concomitant antiviral therapy.
Conclusion: Serum HBcrAg levels are independently associated with (recurrence-free) survival in patients with early stage HBV associated HCC, with better (recurrence-free) survival in patients with lower levels of HBcrAg. As HBcrAg is a measure for persistent intrahepatic replication activity, our findings underscore the need for novel therapies that achieve functional cure instead of HBV DNA suppression alone.

Prevalence and risk factors for duodenal perforation due to migrated biliary plastic stents

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Background: Transpapillary biliary drainage by stent placement through endoscopic retrograde cholangiography (ERC) is a well-established treatment for bile duct obstruction. Migrated-stent-induced duodenal perforation (MSDP) can be a potentially life-threatening complication. The actual prevalence of MSDP is however unknown and risk factors are unclear. We aimed to analyze the prevalence, risk factors and clinical course of MSDP.
Methods: All consecutive patients who underwent an ERC with biliary plastic stent placement between January 1st 2014 and December 31st 2017 in our center were retrospectively analyzed. General patient characteristics, ERC indication and biliary stricture and stent characteristics were collected in all patients. For patients with a MSDP, date of perforation, clinical presentation, type of treatment and treatment outcome were reviewed.
Results: A total of 2487 ERCs were performed in 1228 patients (mean age 59 years, 59% male). In 630 patients (51%) a biliary plastic stent was placed; in 304 patients (25%) one or more stents were placed for perihilar strictures.
A total of 14 MSDPs were diagnosed in 13 patients (mean age 63 years, 79% male). All perforations occurred in patients with a perihilar stricture. The overall prevalence of MSDP was 1,1% in all patients who underwent an ERC, 2,2% for patients who underwent ERC with biliary stent placement and 4,6% for patients with a stent for perihilar stricture.
Perforation did not occur with stents shorter than 12 cm (median length 15 cm, IQR 12-15 cm). Perforation occurred both with 7 and 10 French stents (21% and 79% resp.) and with either center or duodenal bend type stents (42% and 58% resp.). The stenosis was malignant in 8 patients (57%). In 57% of perforated stents the proximal tip was deployed in the left intrahepatic ducts. Median time to diagnosis of MSDP was 13 days (IQR 4-66 days). In 10/13 patients MSDP was clinically suspected due to presentation with abdominal pain, fever and/or laboratory abnormalities. 3/13 patients were asymptomatic and MSDP was diagnosed at elective stent retrieval. Treatment was either by stent removal, endoscopic closure with an over the scope clip or surgery in respectively 36% (n=5), 57% (n=8) and 7% (n=1) of the MSDPs. 2/13 patients died due to ongoing abdominal sepsis despite repeated interventions.
Conclusion: This is the first study to report on the prevalence of MSDP in patients who undergo ERC. Despite the overall low risk of MSDP, it represents a potentially life threatening complication of ERC after transpapillary drainage for perihilar biliary strictures. The risk of MSDP needs to be acknowledged for this indication and warrants consideration in symptomatic patients after ERC.

Nationwide practice and outcome of preoperative biliary drainage using metal or plastic stents in patients with pancreatic ductal adenocarcinoma

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Background: In patients with resectable pancreatic ductal adenocarcinoma (PDAC) and biliary obstruction, early surgery is the preferred treatment. In patients with severe jaundice, neoadjuvant therapy, delayed surgical treatment, and acute cholangitis endoscopic biliary drainage (EBD) is often indicated. Self-expanding metal stents (SEMS) are strongly recommended for EBD, because of lower rates of stent dysfunction, cholangitis and endoscopic re-interventions as compared to plastic stents. We aimed to assess the implementation of SEMS use in daily clinical practice in patients with resectable PDAC undergoing EBD and the relation between SEMS, drainage related- and postoperative complications.
Methods: We performed a nationwide, retrospective cohort study including all patients with PDAC who underwent EBD prior to pancreatoduodenectomy in the mandatory Dutch Pancreatic Cancer Audit (2017 and 2018). Missing data (range 0.-10.4%) were imputed by multiple imputation techniques in which 15 dummy sets were created. Multivariable logistic regression models with adjustment for patient characteristics (sex, age, BMI, and ASA score) were performed to assess the association between type of stent and drainage related- or post-operative complications.
Results: In total, 585 patients, with a mean age of 68 years, were included and 321 (55%) were male. EBD was mostly performed with plastic stents (331, 57%) compared to SEMS (254, 43%). Overall, drainage-related complications were comparable between patients with SEMS (18%) and plastic stents (19%). Cholangitis occurred less often in patients with SEMS compared to plastic stents (5% vs. 11%, p=0.029). Post-ERCP pancreatitis occurred in 9% and 8% in patients with SEMS and plastic stents, respectively. In multivariable logistic regression, adjusted for patient characteristics, SEMS was associated with lower odds of cholangitis (OR 0.394, 95% CI 0.176-0.881). Postoperative pancreatic fistula occurred less often in patients with SEMS compared to plastic stents (10% vs. 19%, p=0.011) and this effect remained after adjustment for patient characteristics in multivariable logistic regression (OR 0.568 95% CI 0.324-0.995).
Conclusion: This nationwide study shows that biliary drainage with SEMS placement is insufficiently implemented in the Netherlands despite explicit European guideline recommendations. Importantly, this nationwide study confirmed that those patients, drained with a SEMS, had a reduced rate of cholangitis and clinically relevant postoperative pancreatic fistula. Therefore, preoperative biliary drainage using SEMS should be strongly promoted and this may be facilitated by a nationwide implementation programme.

Does standard use of propofol-based sedation instead of midazolam and fentanyl improve cannulation rates and complication rates of diagnostic endoscopic retrograde cholangiopancreatography?

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Background: The use of propofol sedation in ERCP's varies widely and guidelines do not advise propofol sedation above midazolam and fentanyl. It has been proven that cooperation, desaturation prevalence and recovery time is in favor of propofol sedation. We aimed to compare cannulation and complication rates by type of sedation: propofol sedation or midazolam with fentanyl.
Methods: We performed a retrospective, observational single-center study in a teaching hospital. Regular propofol sedation for non-elective ERCP's started in our hospital in April 2016 and became standardized since August 2017. All ERCP's conducted between 1st of July 2015 and 31st December of 2017 for biliary indication were included, patients with prior papillotomy were excluded. Patient characteristics, ERCP characteristics and outcomes were collected from medical records and the local ERCP database. The following outcomes were considered in the analysis: CBD cannulation, in patient stay duration, complications (post-ERCP pancreatitis, cholangitis, cholecystitis, and bleeding), reERCP within 1 year, re-admission within 30 days and CT-scan within 30 days.
Results: 580 ERCP's were included in 361 patients. 188 ERCP's were excluded for a non-virgin papilla, leaving 392 ERCP's for analysis, of which 49.5% under propofol sedation. Median age at ERCP was 67, indication was 70% stone related and 23% stenosis, 6% other. With propofol sedation there was a significant higher cannulation rate of 91.3% versus 78.7% in the midazolam and fentanyl sedation group (OR 2.83; P = <0.001), which resulted in a lower reERCP-rate in the propofol group within a year of 19.5% versus 31.0% (OR .540; P = 0.009). We could not prove due lack of power that the complications (post-ERCP pancreatitis, cholangitis, cholecystitis and bleeding) on themselves improved by propofol sedation, although when combined we had a complication rate of 6.2% in the propofol sedation group comparing to 12.4% with midazolam and fentanyl sedation (OR 0.464; P = 0.034).
Conclusion: Cannulation rates in ERCP with propofol sedation compared to midazolam and fentanyl sedation are significantly higher and there were less combined complications in this study with historical controls. Therefore we suggest that propofol sedation is the first choice in sedation for ERCP.

Cumulative sum analyses guiding improvement of team performance in EUS guided tissue acquisition of solid pancreatic lesions in community hospitals

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Background: Endoscopic ultrasound (EUS) guided tissue acquisition (TA) is a complex multistep procedure involving efforts of both endosonographers and cytopathologists. Published outcomes on the quality and yield of EUS guided TA are skewed towards high-volume academic institutions. For community hospitals, in which the majority of these procedures are performed, these data are unknown. Rate of adequate sample (RAS) (the proportion of tissue samples sufficient for cytopathological evaluation) is the only quality indicator solely reflecting the work of the endosonography team. The ASGE guideline described a performance target of 85% for RAS (1). Cumulative SUM (CUSUM) analysis is a method that can be used for quality control (2). For EUS CUSUM has been used to evaluate learning curves of trainees (3). Aim of this study is to investigate whether CUSUM might be a good method to visualize and evaluate the quality of daily practice EUS guided TA of solid pancreatic lesions in community hospitals.
Methods: In Rotterdam region, The Netherlands, a group of five community hospitals formed an EUS interest group (QUEST). With three annual meetings and a regional symposium the goal of QUEST is to improve the quality of EUS in community hospitals. For this particular study, in each hospital retrospective data was collected of EUS-FNA/FNB procedures performed in the year 2014. In January 2015, a prospective registration of all consecutive EUS procedures with FNA/FNB started. CUSUM was used to identify changes in quality.
Results: A total of 103 retrospective procedures and 372 prospective procedures were included. Values of RAS improved statistically significantly after the formation of QUEST (80% retrospectively and 93% prospectively (95%CI 6 – 22, p <0.01)). With CUSUM analysis the learning curve shows a downwards slope in 2014 (retrospective series) and crosses the lower decision limit during that year. The formation of QUEST (January 2015) marked a turning point with the curve showing an upwards slope crossing the upper decision limit in December 2017. CUSUM learning curves also revealed differences in quality between the five hospitals in QUEST showing relevant positive improvements after team formation, especially for those hospitals initially underperforming.
Conclusion: CUSUM showed to be a valid method to measure quality of EUS guided TA of solid pancreatic lesions. It provides continuous feedback on the development (or maintenance) of TA quality and can also be used to compare hospitals. We conclude that after the formation of the QUEST group, RAS of the participating community hospitals is comparable to the ASGE guideline.

Diagnostic yield and agreement on fine needle specimens from solid pancreatic lesions: comparing the conventional smear technique to liquid-based cytology

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Background: The traditional 'smear technique' for the processing and assessment of endoscopic ultrasound (EUS) guided tissue samples is sensitive to artifacts. Collection specimens in a liquid based medium (LBC) may be a solution. We compared the diagnostic value of smears to LBC for specimens collected through EUS-fine needle aspiration (FNA), in the absence of an on-site pathologist (ROSE).
Methods: Consecutive patients, who required EUS-FNA of a solid pancreatic lesion were included in seven hospitals in the Netherlands, and followed for at least 12 months. Specimens of the first pass were split into two smears and a vial for LBC (using ThinPrep and/or Cell block). Smear and LBC were compared in terms of diagnostic accuracy for malignancy, sample quality, and diagnostic agreement on amongst three (cyto)pathologists.
Results: Diagnostic accuracy for malignancy was higher for LBC (82% (58/71)) than smear (66% (47/71), p=0.035), but did not differ when smears were compared to ThinPrep (71% (30/42), p=0.564) or Cell block (62% (39/63), p=0.605) individually. Artefacts were less often present in ThinPrep (57% (24/42), p=0.024) or Cell block samples (40% (25/63), p<0.001) than smears (76% (54/71)). Agreement on malignancy was equally good for smears and LBC (κ=0.71 versus κ=0.70, p=0.099), but much lower for ThinPrep (κ=0.26, p=0.012) than smears.
Conclusion: LBC provides a higher diagnostic accuracy than and a comparable agreement to the conventional smear technique for EUS-FNA of solid pancreatic lesions in the absence of ROSE. Therefore, LBC may offer a good alternative for the smear technique, especially in EUS-centers lacking ROSE.

Long-term overall survival after endoscopic mucosal resection for esophageal high-grade dysplasia and early adenocarcinoma: a nationwide registry linkage study

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Background: Endoscopic therapy, particularly endoscopic mucosal resection (EMR), is recommended by current guidelines for patients with esophageal high-grade dysplasia (HGD) or early adenocarcinoma (EAC). Long-term outcome data based on large cohorts is limited. Our objective was to evaluate the long-term efficacy of EMR for esophageal HGD/EAC in a large population-based cohort. We also investigated factors associated with long-term overall survival.
Methods: Registered patients in the period 2005-2015 with HGD/EAC of the esophagus or gastroesophageal junction treated with EMR were identified from the Netherlands Cancer Registry (NCR). Clinical data, including age at diagnosis, year of treatment, surgical resection and vital status were retrieved from the NCR. Through record linkage with the nationwide Dutch Pathology Registry (PALGA), additional pathological data was obtained. Patients with no available pathology reports of the EMR specimen were excluded. The primary outcome was overall survival. Secondary outcomes were number of en-bloc resections, R0-resections (margins free from HGD/EAC) and proportion having undergone surgical resection
Results: A total of 898 primary EMR procedures for HGD/EAC were included. The mean age at diagnosis was 67 [±10.5] years, median follow-up time 4.8 [IQR 3.0-6.8] years. Local tumor stage after primary EMR was 12% HGD (pTm1), 68% intramucosal (pTm2-3) and 21% submucosal (pTsm1-3) EAC, with 10-year overall survival rates of 73%, 58% and 49%, respectively ($p<0.001$). In total, 118 patients (21%) had an en-bloc EMR with 42% complete resection rate. Following piecemeal EMR (mean specimens 3.3 [±2.6], R0-resection of the vertical margins was 73%. R0-resections increased over time from 53% in 2005 to 75% in 2015. After radical EMR without lymphovascular invasion, 28/558 (5%) underwent surgical resection during follow-up (4% intramucosal vs 14% submucosal EAC, ($p<0.001$). Factors associated with overall survival were pTsm1-3 (HR 2.5, 95 CI% 1.4–4.4), pTm2-3 (HR 1.9, 95 CI% 1.1–3.3), presence of signet ring cells (HR 1.7, 95 CI% 1.0–2.7), lymphovascular invasion (HR 1.6, 95 CI% 1.0–2.5), R1-resection (HR 1.5, 95 CI% 1.1–2.0), age (HR 1.1, 95 CI% 1.0–1.1) and surgical resection (HR 0.5, 95 CI% 0.3–0.8).
Conclusion: EMR is a highly effective treatment for esophageal HGD/EAC with an excellent long-term survival in daily clinical practice. Pathologic factors, i.e. depth of tumor invasion, presence of signet ring cells and lymphovascular invasion, were the strongest predictors of poor overall survival.

Long-term outcomes after endoscopic treatment for Barrett's neoplasia in 641 patients in a centralized care setting in the Netherlands: recurrent neoplasia is rare and neosquamous biopsies do not contribute to its detection.

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Background: Radiofrequency ablation (RFA) with or without endoscopic resection (ER) is the standard of care for treatment of early neoplasia in Barrett's esophagus (BE). We aimed to report durability outcomes based on a large cohort of patients with uniform treatment and follow-up (FU) in a centralized care setting.
Methods: Endoscopic therapy for BE neoplasia in NL is centralized in 10 expert centers with jointly trained endoscopists and pathologists, a joint protocol and quarterly meetings. In an ongoing registry, we collected treatment/FU data from all pts treated >2008. Treatment indications were BE with low/high grade dysplasia (LGD/HGD) or early adenocarcinoma (EAC). Visible lesions were removed by ER, followed by RFA until complete remission of intestinal metaplasia (CR-IM). Initially 4Q biopsies (Bx) were obtained from normal squamous epithelium (NSE) and cardia at every FU endoscopy. These were abandoned in 2013 and 2016 respectively.
Results: In total, 641 pts with median BE C2M4 achieved CR-IM. Over a total FU of 2,747 person years (median 4 yrs and 4 endoscopies per pt), 625 pts (98%) had sustained CR-neoplasia (SCR-N). The overall annual recurrence risk was 0.6%/yr. Based on 205 pts with FU >5yrs, the risk remained similar after 5 yrs (0.7%/yr). In total, 16 pts (2%) developed recurrent neoplasia after median 30mo (IQR 23-42). A more severe baseline histology significantly increased recurrence risk (HR 3.1, 95%-CI 1.1-8.2). In 13 pts (81%), CR-N was re-achieved after endoscopic treatment for LGD (3), HGD (4) or EAC (6), but 3 pts (0.5% of all) eventually progressed to advanced cancer (2 metastatic disease, 1 submucosal cancer). All 3 cases were at baseline identified as highly complicated due to multifocal HGD/EAC and/or severe reflux stenosis. All recurrences were detected as visible non-flat lesions or by Bx from recurrent BE or cardia. None of the 5,992 NSE Bx which were obtained, contributed to detection of recurrence. Abandoning NSE sampling in 2013 saved approximately 10,000 Bx in our cohort. Cardia Bx were obtained in 1,687 endoscopies, with LGD (0.2%), IM (7%) or no abnormalities (93%). In total, 69 patients (11%) had IM in a normal appearing cardia at some time point; this was reproduced in a minority and none progressed to dysplasia.
Conclusion: RFA with or without ER has remarkably low rates of neoplastic recurrence after CR-IM, with an annual recurrence risk comparable to that in a non-dysplastic BE surveillance population. The vast majority of recurrences are detected at early stages and amendable for curative endoscopic treatment. Our data support more lenient FU intervals with emphasis on careful endoscopic inspection, whilst NSE biopsies can be abandoned.

Individual's preferences and predicted uptake for esophageal cancer screening tests - a labeled discrete choice experiment

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Background: Screening for EAC and its precursor Barrett's esophagus could possibly reverse the increasing incidence of EAC. Currently, new screening tests as non-endoscopic cell collection devices and circulating and exhaled biomarkers are under development with promising results. However, a key factor driving the success or failure of a screening program is patients' willingness to undergo a screening procedure. We therefore aimed to determine the preferences of individuals and to predict uptake for EAC screening programs using various screening tests.
Methods: A labeled discrete choice experiment questionnaire was sent by postal mail to 1500 individuals aged 50 to 75 years who were randomly selected from two municipal registries. Individuals were repeatedly asked to choose between scenarios on the basis of sedated upper endoscopy (sEGD), unsedated transnasal endoscopy (uTNE), non-endoscopic cell collection device (sponge on a string), breath analysis, and a blood test combined with various levels of test sensitivity and test specificity. A multinomial logit model was used to estimate individuals' preferences for each attribute level and to calculate relative importance scores of each attribute and expected rates of uptake.
Results: Of 1500 individuals, 460 (30.7%) completed the questionnaire (55.9% male; mean ±SD age 62.1±6.8). Individuals preferred screening to no screening. Test sensitivity had the highest impact on respondents' preferences, accounting for 47.3%, followed by screening modality (32.6%).
Most respondents preferred giving blood samples (42.1%) and breath analysis (36.9%) to non-endoscopic cell collection devices (7.0%), uTNE (3.9%), or sEGD (10.0%). Individuals are willing to give up 25.9% sensitivity and 66.8% specificity to undergo a breath test instead of sEGD. The average expected predicted uptake was 70.7% (95%CI 69.2–72.2), which could increase to 92.2% (95%CI 91.2–93.2) using a test with maximal test sensitivity and specificity. Cancer worries (β 1.71; P=0.001) and upper endoscopy (β 1.26; P=0.01) experience were significantly associated with screening participation.
Conclusion: This DCE suggests a substantial interest for EAC screening in the general population. Test sensitivity and screening procedure were the key factors influencing screening uptake. Non-invasive screening tests (breath and blood testing) were the most preferred alternatives. Understanding individuals' preferences for EAC screening tests helps to further design the optimal screening programs by selecting the screening tests that maximize attendance and further reduce morbidity and mortality from EAC.

Visual estimation of colorectal polyp size in a colon model

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Background: Correct estimation of colorectal polyp size is important for surveillance policy, to estimate malignant potential and to plan the method of removal[1]. In relation to smaller polyps, size estimation is of major importance in the 'resect-and-discard' strategy[2]. Currently, the gold standard of polyp size determination is the pathological measured diameter, but often is relied on visual (endoscopic) rating of polyp size. Literature shows that this visual estimation is frequently inaccurate when compared to the pathological report[3,4]. We aimed to assess factors which could hypothetically influence the accuracy of visual polyp size and volume estimation in a colon model.
Methods: We created a colon model with artificial polyps of different size, shape and volume, which were photographed using an Olympus video colonoscope (Olympus EVIS EXERA III, CF-HQ190L) at fixed distances of 1, 3, and 5cm. The pictures were presented to 15 endoscopists of three different centers, who were asked to estimate polyp diameter and volume. Polyp diameters were categorized into ≤5mm, 6-9mm and ≥10mm, as these were considered clinical relevant categories[1,2]. Level of agreement between the visually estimated diameter category and the true (measured) diameter category was assessed using the Kappa test. Agreement in volume estimation was assessed using intraclass correlation.
Results: The Kappa for agreement of the correct category of polyp diameter was 0.41 (95% confidence interval (CI) 0.33-0.48), which equals a fair to moderate agreement[5]. Agreement did not substantially improve with experience, with a Kappa of 0.42 (95% CI 0.33-0.51) in the experienced group (>48 months of endoscopic experience) versus 0.39 (95% CI 0.26-0.51) in the less experienced group. Moderate agreement was observed between estimated and true polyp volume (intraclass correlation 0.69, CI 0.63-0.74). Subanalysis showed that the best distance to estimate polyp diameter was at 3cm (Kappa of 0.45, versus 0.37 at 1cm and 0.40 at 5cm). Polyps photographed at 1cm were consequently estimated larger than those photographed at 3 and 5cm, for diameter as well as volume.
Conclusion: In this study using a colon model with artificial polyps we found fairly disappointing results in estimation of polyp size (both diameter and volume). Our data suggests that endoscopists tend to overestimate polyp size at short endoscopic distance and underestimate polyp size at larger distance. Three centimeters seems to be the ideal endoscopic distance for optimal polyp size estimation.
Novel techniques are needed to more accurately assess polyp size during endoscopy.

High seroconversion rate to trivalent influenza vaccine during ustekinumab treatment in Crohn's disease: results from a prospective cohort study

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Background: Influenza vaccination may be less effective in patients with inflammatory bowel disease treated with immunosuppressive therapy, especially with combined use of anti-TNFα agents and immunomodulators. However, little is known regarding the effects of anti-IL-12/23 therapy on the efficacy of vaccination. Therefore, the aim of this study was to investigate the immune response to the 2018-2019 inactivated trivalent influenza vaccine (TIV) in Crohn's disease (CD) patients treated with ustekinumab (UST) as compared to CD patients treated with adalimumab (ADA) and healthy controls (HC).
Methods: A prospective open-label study was conducted to examine the immunogenicity of the 2018/2019 inactivated TIV in adult CD patients treated with UST. Patient details, disease characteristics and vaccination history were recorded. Age and gender matched CD patients treated with ADA and healthy controls were included as control populations. Blood samples were drawn at 3 time points, T0: before vaccination, T1: 4 to 6 weeks after vaccination and T3: 3 months after vaccination. Hemagglutinin inhibition (HI) assays for all 3 influenza vaccine strains (A/Michigan/2015/H1N1; A/Singapore/2016/H3N2, B/Victoria) were performed simultaneously on all study samples.
Results: A total of 15 CD patients treated with UST, 14 CD patients treated with ADA and 20 healthy controls (HC) were included and received TIV between October and December 2018. Post-vaccination seroprotection rates (HI titer ≥1:40) were high in all 3 study groups, no significant differences between study groups were observed. Seroconversion rates (≥4-fold increase in HI titer compared to pre-vaccination) for strain A/H3N2 were significantly higher at both time points in UST group as compared to ADA group (T1; p = 0.015, T3; p = 0.019) and HC (T1; p = 0.038, T3; p = 0.029). Geometric mean titres (GMT) at T1 and T3 were lower for all strains in ADA group, as compared to UST group and HC, and significantly lower for the A/H3N2 strain in ADA group as compared to HC (T1; p= 0.032, T3 p = 0.015). After correcting for high titers at baseline using Beyer's method, mean fold increase (MFI) in titers at T3 for A/H3N2 strain was significantly lower in ADA group as compared to HC (p = 0.026) and UST group (p = 0.017). MFI for the B/Victoria strain was high in UST group and significantly higher than in ADA group (T1; p = 0.008, T3; p = 0.009).
Conclusion: Seroconversion rate to the seasonal trivalent influenza vaccination during ustekinumab treatment in CD patients is high, in contrast to the reduced rate observed for adalimumab. Patients treated with ustekinumab can be effectively vaccinated with the trivalent influenza vaccine.

High disease burden drives indirect costs in inflammatory bowel disease: the WORK-IBD study

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Background: The disease burden in inflammatory bowel disease (IBD) patients is substantial and results in high costs. Economic analyses evaluating indirect costs (incurred from work productivity (WP) loss) focused mainly on absence from work (absenteeism), while more than 30% of IBD patients have on the job productivity loss (presenteeism).
Aims & methods: The aim of the WORK-IBD study was to determine predictors for WP loss and severe fatigue and estimate yearly indirect costs. IBD patients who attended the outpatient clinic at 2 academic and 2 non-academic hospitals between May and August 2017 were invited. WP and fatigue were measured using WPAI and MFI (0-100) questionnaires. Severe absenteeism, presenteeism and overall WP loss were defined as ≥50% absenteeism, presenteeism and overall work impairment (absenteeism and presenteeism). Annual indirect costs were based on hourly wage, WP loss, contract hours and 47 workweeks. Fatigue score above the 95th percentile of the general population was defined as severe fatigue. Factors with $p<0.1$ in univariable analyses were entered into multivariable regression analyses.
Results: Out of 1590 patients, 768 (48%) responded and 536 were included (58% female, 53% Crohn's disease). Severe absenteeism, presenteeism and overall WP loss was reported by 36 (7%), 85 (16%) and 115 (22%), corresponding with median annual costs of €0 (0-0), €0 (0-8430) and €1905 (0-10537). Patients with disease activity and active perianal disease had an increased risk for WP loss (OR 6.6, 95% CI 3.6-12.1 and OR 3.7, 95% CI 1.5-8.7), resulting in higher annual costs versus patients with quiescent disease and no active perianal disease (€13338 vs 0, $p<0.01$ and €14363 vs 2382, $p<0.01$). Mesalazine users had a lower risk (OR 0.2, 95% CI 0.0-0.8) and comprised the lowest annual costs (€0 (0-6734)) compared to other treatment groups (€1143 (0-8767) immunomodulators, €3811 (0-15244) anti-TNF mono- and combination therapy, €5603 (0-15771) vedolizumab, €10350 (3049-28201) ustekinumab and €762 (0-9146) without maintenance treatment). Risk factors for severe fatigue (reported by 252 (47%)) were active disease (OR 3.6, 95% CI 1.9-6.8) and arthralgia (OR 1.8, 95% CI 1.0-3.3), whereas mesalazine use was associated with a lower risk (OR 0.3, 95% CI 0.1-0.8). WP loss and costs were higher in patients with severe fatigue (median (IQR) 30% (0-60) vs 0% (0-10), $p<0.01$ and 7622 (0-16859) vs 0 (0-4215), $p<0.01$).
Conclusion: Disease activity, active perianal disease and severe fatigue are risk factors for WP loss in IBD, leading to high indirect costs. Mesalazine use is associated with a reduced risk for WP loss and lower costs, which is likely reflecting a less severe disease course.

Gut feelings: Implementation and Validation of Participatory Narrative Inquiry (PNI) to improve quality of life and explore the role of diet and life style factors in Inflammatory Bowel Disease (IBD) patients.

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Background: Current treatment of Inflammatory Bowel Diseases (IBD) is focused on pharmaceutical intervention. Composite targets are based on clinical symptoms and endoscopic remission. However, patients often experience a favourable effect on symptoms from changes in life style, such as alternative diets. Currently, patient information about these effects is not being used, due to lack of a validated method to systematically collect and analyse these data. Standard quantitative methods use predesigned questions, with as limitation that valuable insights might be unnoticed. Participatory Narrative Inquiry (PNI) is a partially quantitative, qualitative and narrative method where patients are invited to share their personal experience on their disease. In the Gutfeelings project, supported by the Maag Lever Darm Stichting, we aim to implement and validate PNI to collect, analyse and structure patient expertise to enhance information sharing between patients and to reveal insights that are valuable for personal and scientific follow-up research.

Methods: In collaboration with patients, doctors and researchers, questions were designed in an open format. Through an online platform, patient stories, together with information about age, sex and disease type, were anonymously collected and consequently, in collaboration, analysed and structured for patterns and trends. An overview was made of recurring topics.

Results: A total of 74 anonymous stories of patients with Crohn's disease or ulcerative colitis were collected. Both diseases were equally represented and patients between age 20-70 participated, of which 75% was female. Recurring factors that contributed to improvement of quality of life were, in order of occurrence: rest and balance, alternative diet, regular medical treatment, psychosocial factors, physical activity and patient autonomy. Other factors that affected patient wellbeing include use of CBD-oil or smoking. Factors were either adjustable, or external influences.

Conclusion: The PNI method provides a structure to reveal new insights in factors that influence the wellbeing of patients with IBD. External factors highly influence the quality of life. Besides regular pharmaceutical treatment, patients benefit from altered diets and managing stress, and moreover, they value autonomy in their treatment. Obtained data imply that in-depth research is needed on diet and dietary supplements. Stories about change in diet were too diverse to structure and more specific research on nutrition is needed. As a follow up on the Gutfeelings project, Voedinghelpt.nl will specifically gather stories about the role of nutrition in IBD during the coming months.

Riboflavin suppresses inflammation and attenuates Crohn's disease symptoms (RISE-UP study)

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Background: Crohn's disease (CD) is characterized by chronic intestinal inflammation and dysbiosis in the gut. Riboflavin (vitamin B_2) has anti-inflammatory, anti-oxidant and microbiome-modulatory properties. Here, we analyzed the therapeutic potential of riboflavin in CD and its effect on markers of inflammation, oxidative stress and the gut microbiome.
Methods: In this prospective clinical intervention study, 70 CD patients were included and divided into one group with low and one group with high disease activity at baseline (defined by faecal calprotectin (FC) cut-off value: 200 µg/g). Patients received 100 mg riboflavin (DSM, Nutritional Products Ltd.) daily for 3 weeks. Clinical disease activity (Harvey-Bradshaw Index: HBI), serum biomarkers of inflammation and redox status (plasma free thiols), and gut microbiome taxonomical composition and functionality (fluorescent *in-situ* hybridization, FISH, and metagenomic shotgun sequencing, MGS), were analyzed before and after riboflavin intervention.
Results: Riboflavin supplementation significantly decreased serum levels of inflammatory markers. In patients with low disease activity IL-2 decreased, while in patients with high disease activity C-reactive protein (CRP) and tumor necrosis factor-α (TNF-α) were reduced, and free thiols significantly increased after supplementation. Moreover, HBI was significantly decreased by riboflavin supplementation. Riboflavin supplementation led to decreased *Enterobacteriaceae* in patients with low FC levels as determined by FISH, however, MGS analysis showed no effects on diversity, taxonomy or metabolic pathways of the gut microbiome.
Conclusion: Three weeks of riboflavin supplementation suppresses systemic inflammation and attenuates systemic oxidative stress in CD, concomitant with relief of clinical symptoms. FISH analysis showed decreased *Enterobacteriaceae* in quiescent CD, though this was not observed in MGS analysis. Our data demonstrates that riboflavin supplementation has beneficial effects in CD.

Reverse switching to originator infliximab in patients with inflammatory bowel diseases

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Background: In current clinical practice, most patients with inflammatory bowel disease (IBD) treated with originator infliximab (IFX) have been switched to biosimilar IFX because of lower costs and seemingly similar effectiveness. Over a one-year follow-up 7%-26% of the patients discontinued biosimilar IFX treatment, which is comparable to originator IFX. Common reasons for discontinuation of biosimilar IFX treatment are (subjective) loss of response or side effects. As a result of newly experienced side effects or loss of response while on biosimilar IFX, patients are occasionally switched back to treatment with originator IFX. However, not much is known regarding switching back to originator IFX.
Here we assess the prevalence of and the specific reasons for switching back to originator IFX within 52-weeks after an initial conversion from originator IFX to a CT-P13 biosimilar in IBD patients. Additionally, we evaluated whether reinitiating originator IFX led to the desired effect.
Methods: In this retrospective, multicentre cohort study, data of IBD patients from two tertiary care centres and two large general hospitals in the Netherlands were collected. Adult IBD patients were eligible for inclusion if they had been switched from IFX originator to a CT-P13 biosimilar and had a follow up time of at least 52 weeks after initial conversion. Reasons for switching back were categorised into side effects or loss of response to the biosimilar.
Results: A total of 254 IBD patients were switched (165 Crohn's disease, 52 ulcerative colitis and 2 IBD-unclassified). Reverse switching occurred in 35/254 (13.8%) of the patients after a mean of 23.6 weeks. Reverse switchers were more often female (48.9% versus 68.6%, p = 0.02) than those who stayed on biosimilar treatment. Thirty-two patients (91.4%) switched back to the originator because of newly experienced side effects and three (8.6%) because of loss of response on biosimilar IFX. Most frequently reported side effects were skin reactions (37.1%; 13/35), an increase in IBD related symptoms (37.1%; 13/35) of patients and fatigue (25.7%; 9/35). Three patients had by calprotectin (>250 mg/L) objectified loss of response on IFX biosimilar. In 75% (24/32) of the patients experiencing side effects and 100% (3/3) of the patients with loss of response, re-switching led to the desired effect.
Conclusion: Switching back to originator IFX seems effective in patients with IBD, who experience side effects or loss of response after switching from originator to biosimilar IFX. Switching patients back to originator IFX may therefore be justified in case patients experience new side effects or loss of response after switching to a biosimilar IFX.

The Relation between Infliximab Trough Levels and Disease Activity in Children with Inflammatory Bowel Disease

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Background: In children with inflammatory bowel disease (IBD), unlike in adults, limited data about the effect of infliximab (IFX) pharmacokinetics on disease activity are available. The primary aim of our study was to define the relation between infliximab trough levels (IFX-TL) and clinical and biomarker remission.
Methods: A multicentre, retrospective study was performed. Children between 6 and 18 years old, who were diagnosed with IBD and received maintenance IFX at one of the four participating centres, were included. Available IFX-TLs were compared to clinical and biomarker remission and mucosal healing. Clinical disease activity was measured by the weighted Paediatric Crohn's Disease Activity Index (wPCDAI) and the Paediatric Ulcerative Colitis Activity Index (PUCAI) for Crohn's disease (CD) and ulcerative colitis (UC) respectively. Clinical remission was defined by scoring ≤10 points on the wPCDAI or PUCAI. Biomarker remission was defined as C-Reactive Protein (CRP) ≤5 mg/L and Erytrhocyte Sedimentation Rate (ESR) <20 mm/h. Mucosal healing was defined as faecal calprotectin (FCP) <250 mg/kg.
Results: A total of 378 IFX-TL samples from 81 patients (53 CD, 26 UC, 2 indeterminate colitis) were collected and analysed. In 52 patients, IFX-TLs were measured 14 weeks after the start of induction treatment. Median follow-up was 15 months [interquartile range 7-36]. At 14 weeks, median IFX-TLs were higher in children with clinical remission (8.1 vs. 3.8 mg/l, *p=0.016*) and with biomarker remission (6.6 vs. 3.4 mg/l, *p=0.04)* compared to those with active disease. We found an optimal IFX-TL cut-off point of ≥4.6 mg/l to achieve clinical remission at week 14, with a sensitivity of 81% and a specificity of 58%. During maintenance therapy, FCP levels were significantly lower in patients with clinical remission compared to those with active IBD (136 vs. 541 mg/kg, *p<0.01)*. Formation of antibodies to IFX (ATI) was seen in 9 patients, who all failed IFX therapy.
Conclusion: The results of this large, multicentre paediatric cohort study, demonstrate that high IFX-TLs at 14 weeks and low FCP levels during maintenance therapy are associated with clinical remission. Formation of ATI is a predictor for IFX therapy failure. These findings suggest that therapeutic drug monitoring may be of use in the monitoring of infliximab treatment in children with IBD.

Improvement of fatigue and quality of life in patients with quiescent inflammatory bowel disease after a personalised exercise program: a pilot experience

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Background: Chronic fatigue significantly impacts the quality of life (QoL) of patients with inflammatory bowel disease (IBD). During quiescent disease, 40% of patients suffer from chronic fatigue. Optimal treatment strategies are lacking, though in other chronic diseases exercise has been proven successful. Therefore, we aimed to assess the effect of an exercise program on fatigue and QoL in patients with quiescent IBD and chronic fatigue.
Methods: We performed a pilot study with 25 IBD patients (Crohn's disease and ulcerative colitis) in clinical remission and faecal calprotectin >100 suffering from fatigue, based on a score of ≥35 on the checklist individual strength fatigue (CIS-F). Cardiorespiratory fitness was assessed using a cardiopulmonary exercise test (CPET) on a cyclo ergometer with maximum power and maximum oxygen uptake (VO2 max) as the main outcome parameters. The personalised exercise program consisted of 1 hour sessions, with an aerobic interval- and progressive resistance training at a level adjusted to each patient. The program contained 3 sessions per week for 12 consecutive weeks. Before and after completion of the exercise program, fatigue was measured with the CIS-F and QoL with the 32-item IBD questionnaire, that have a potential score range (worst – best) of 140 – 20 and 32 – 224 respectively.
Results: 21 of 25 patients had Crohn's disease, with a mean (±SD) age of 45 (±2.6) years and BMI of 25 (±3.2). At time of inclusion, patients' median (IQR) faecal calprotectin was 13 (5.0 – 31) µg/g. The exercise program was completed by 22 (88%) patients. Their mean (±SD) fatigue level significantly improved from 105 (±17) to 66 (±20) after the program ($p<0.001$). Patients' QoL improved from 156 (±21) to 176 (±19) after the program ($p<0.001$). When exploring the subdomains of the QoL score a significant improvement was seen in emotional (58 ±12 to 69 ±9.1, $p=0.003$), systemic (19 ±3.9 to 24 ±4.7, $p<0.001$) and social function (25 ±5.4 to 30 ±3.9, $p<0.001$). Bowel symptoms did not change (53 ±7.7 vs 55 ±7.3, $p=0.208$) during the study period. The CPET showed an increase of patients' mean maximum power per kg from 2.4 (±0.5) to 2.7 (±0.5) ($p=0.002$). The VO2 max per kg did not significantly improve with a median (IQR) VO2 max per kg of 28 (25 – 31) before and 31 (27 – 33) after the exercise program ($p=0.077$).
Conclusion: Our results show that a personalised exercise program can lead to a significant decrease of fatigue and improvement of QoL in patients with quiescent IBD and chronic fatigue.

Endoscopic full-thickness resection is feasible for T1 colorectal cancers - a Dutch nationwide prospective cohort study

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Background: For T1 colorectal cancer (CRC) endoscopic resection is an attractive alternative to surgical resection due to lower morbidity and mortality. However, conventional polypectomy often leads to suboptimal histologic risk assessment. Exact risk stratification with certainty about resection margin status and the presence of histologic risk factors for lymph node metastasis (LNM) is crucial for further decision making. endoscopic full-thickness resection (eFTR) could serve as a valid diagnostic and therapeutic treatment option for T1 CRC. We aimed to determine technical success, clinical success and safety of eFTR for T1 CRCs.

Methods: In our prospective cohort of eFTR procedures performed between September 2015 and April 2019 in 21 Dutch hospitals, we evaluated all T1 related procedures. This included primary treatment with optical diagnosis of T1 CRC and secondary treatment after previous (potentially) incomplete resection. To determine technical success, we studied the number of macroscopic complete *en bloc* resections. Other outcomes were clinical success (R0 resection with tumor-free resection margins and possibility of discrimination between high-risk and low-risk T1 CRCs) and adverse events. A lesion was defined high-risk if one of following risk factors was present: poor differentiation, lymphovascular invasion, deep submucosal invasion (Sm 2-3) or incomplete resection (R1/Rx resection).

Results: We included 247 procedures. Indications were primary resection for suspected T1 CRCs (n=81) and re-resection after previous incomplete resection of T1 CRCs (n=166). Technical success of all procedures was achieved in 85.4% (211/247). No histopathology was obtained in 6.1% (15/247), because the lesion could not be reached or retracted into the cap. In the remaining 232 cases amenable to eFTR, R0 resection rate was 88.8% (206/232). Final histopathology confirmed residual adenocarcinoma in 33.2% (77/232). Subgroup analysis showed adenocarcinoma in 85.5% (65/76) after primary resection and in 7.7% (12/156) after previous incomplete resection. Discrimination between high-risk versus low-risk T1 CRC was achieved in 97.4% (75/77). Low-risk T1 CRC was identified in 22.1% (17/77) and high-risk T1 CRC in 75.3% (58/77). Additional surgery was performed in 41.4% (24/58) of the high-risk cases, of which 87.5% (21/24) had no residual cancer or LNM. The overall adverse event rate was 8.5% (21/247), with emergency surgery in 2.4% (6/247).

Conclusion: eFTR is feasible for T1 CRCs, both as primary treatment and secondary treatment after previous incomplete resection. eFTR delivers optimal histology for risk assessment, avoiding surgery in most cases. Further studies on long term outcomes are needed.

Adjuvant full-thickness resection for uncertain radicality of an endoscopically removed T1 colorectal cancer without other risk factors for lymph node metastasis: is it safe from an oncological point of view?

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Background: Local full-thickness colorectal wall resections (FTR) is sometimes used for endoscopically removed T1 colorectal carcinomas (CRCs) with irradical (R1) or uncertain (Rx) resection margins, but without other histological risk factors. Although FTR of the scar is becoming increasingly popular as completion therapy, the oncological safety has never been established. We therefore investigated the prevalence of lymph node metastasis (LNM) in patients treated with adjuvant surgical resection (ASR) of endoscopic macroscopically radical resected Rx/R1 T1 CRCs without lymphovascular invasion (LVI) or poor differentiation.

Methods: We combined data from the prospective SCAPURA-trial (2015-2019) and the Dutch retrospective T1 CRC databases (period 2000-2014 and 2014-2017). Data were collected on polyp characteristics (size, location, morphology), type of endoscopic resection, hisological assessment, type of surgery and patient characteristics. Eligibility criteria for this study were: 1) a macroscopically radical endoscopic resection; 2) Rx/R1 or R0 ≤ 1 mm; 3) absent or unknown LVI or poor differentiation; and 4) ASR. Endpoint was the presence of LNM. Subgroup statistical analysis was performed with Chi-squared test.

Results: Of 3130 patients with a T1 CRC, 288 (mean age 66 years, ASA I-II 86%, 44% female) met the criteria. In 19/288 (6.6%) patients with ASR, residual cancer was detected at the scar, of which 4/19 (21%) showed LNM. Of the remaining 269 patients, 24 (8.9%) showed LNM. This risk of LNM was comparable between the 3 independent cohorts; 5/60 (8.3%) in the SCAPURA cohort, 8/146 (5.5%) T1 CRC database (period 2000-2014) and 11/64 (17.4%) (period 2014-2017). Data on LVI was missing in 15.7%, 70.1% and 4.2% respectively. The risk for LNM was similar for rectum and colon (6.1% vs. 9.3%, p=0.538), and piecemeal v.s. en bloc resection (8.3% v.s. 10.2%; p= 0.601). Finally, to study potential selection bias towards more high risk patients in the ASR group, we compared baseline characteristics to a FTR only group of 96 patients (mean age 66 years, ASA I-II 78%, 51% female). We could not detect important differences between both groups which could explain this unexpected high number of LNM in the ASR group. Residual cancer in the scar was detected equally (6.6% v.s. 5.1%), and there was an equal distribution of piecemeal resections (34% vs 27%). The ASR group showed however more T1 CRCs located in the proximal colon.

Conclusion: Completion FTR after endoscopic resection of a R1/Rx T1 CRC without LVI or poor differentiation is associated with a 8% risk of LNM. Completion FTR should therefore be accompanied with intensive follow-up.

Intermuscular dissection for deep submucosal invasive cancer in the rectum

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Background: As endoscopic submucosal dissection (ESD) dissects through the submucosa, it is often impossible to obtain a radical deep resection margin in case of deep invasion in the submucosa (Sm2-3). With accumulating evidence that deep submucosal invasion is not an independent predictor of lymph node metastasis, technical adjustments are needed to obtain an R0 resection. Dissecting between the circular and the longitudinal layers of the m. propria (intermuscular dissection), could provide the necessary radical deep margin.
Methods: In this prospective cohort, 15 rectal tumors with optical features of deep submucosal invasion were treated with an intermuscular dissection. Brief description: circumferential incision of the mucosa is followed by careful circumferential myotomy of the circular muscle layer, until the longitudinal muscle fibres were visualized. Then the intermuscular space was dissected. The primary endpoints were the feasibility of performing intermuscular dissection, the ability to obtain an R0 resection, and the complication rate. Technical success was defined as an *en bloc* resection of the lesion. R0 resection was defined as free deep and lateral resection margins confirmed by histology.
Results: Between December 2018 and April 2019, 15 patients (73% male, mean age 67 yrs SD ± 11 yrs) with a lesion with suspicion of deep submucosal invasion (mean size 28 mm (range 16 to 50 mm) in the rectum were treated with an intermuscular dissection. Optical diagnosis with NBI showed a Hiroshima C1 pattern in 1 (7%), C2 in 2 (13%) and C3 in 12 (80%) cases. Technical success was achieved in 13/15 (87%) cases. In the 2 failed cases, it was impossible to discriminate and lift the intermuscular space. An R0 resection was achieved in 11/13 (85%) technically successful cases. Two cases had a positive deep resection margin. The depth of submucosal invasion was Sm1 in 1 (7%), Sm2 in 3 (23%), Sm3 in 8 (61%), and T2 in 1 (7%) cases. Lymphovascular invasion was observed in 7/13 (54%) cases, high-grade tumor budding in 4/12 (25%), and G3 differentiation in 1/13 (7%). One patient developed fever postoperatively without need for intervention. In total 6/13 (46%) cases had no histological risk factor other than deep invasion. A wait-and-see follow-up strategy was applied in 7/13 (54%) cases, surgery in the remaining cases. No residual carcinoma was detected at the scar in the surgical specimens.
Conclusion: Endoscopic intermuscular dissection (EID) seems a promising and safe new technique to remove deep submucosal invasive T1 carcinomas in the rectum, with a technical success rate of 87% and an R0-resection rate of 85%.

Factors involved in endoscopists' choice for prophylactic clipping after EMR, a discrete choice experiment.

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Background: Delayed bleeding (DB) after endoscopic mucosal resection (EMR) of flat and sessile colorectal adenomas occurs in up to 10% of patients. Recently, a multicenter study reported a significant decrease in DB after prophylactic clipping (PC) in right sided colonic lesions >2cm. As PC is associated with significant costs, its use is considered not cost-effective for small (<2cm) and left sided polyps. The practice of PC is not yet widely adopted in guidelines and clinical practice. Our aim was to determine which predefined variables contribute to using PC in an international group of endoscopists. --
Methods: The survey was conducted in 428 gastroenterologists of the Dutch Association of Gastroenterology and Hepatology. Additionally, 69 international experts were contacted and invited to forward the survey to other colleagues with EMR experience. Relevant variables hypothesized to influence decision-making for PC were selected by a panel of four experts and included previous DB, anticoagulant use, polyp size, morphology, location, intra-procedural bleeding and visible vessel(s). Respondents answered ten sets of three hypothetical case scenarios built with these variables, each time choosing only one scenario for PC. If they wouldn't use PC in any of the cases, a 'none' option could be chosen. Part-worth utility scores and importance weights were calculated for each level of the variables with Hierarchical Bayes regression analysis and compared between subgroups using a T-test.
Results: The survey was completed by 190 endoscopists with experience in EMR from 17 different countries. In total, 6.8% of respondents would not use PC in any of the simulated situations, whereas 30.9% never chose the 'none' option in the survey. Except for polyp type (flat, sessile, mixed type), all tested variables were significant in the decision-making for PC with $P<0.01$. The most important factor was anticoagulant use, accounting for 22.5% in decision-making, followed by intra-procedural bleeding (16.3%), polyp size (16.2%), polyp location (15.9%), visible vessel(s) (13.5%) and previous DB (10%). Small polyps <2 cm were considered eligible for PC by 14% of the responders in the presence of high-weighing factors such as anticoagulant use. No significant differences in importance weights were found between high and low to moderately experienced EMR endoscopists.
Conclusion: PC after EMR is commonly considered useful by endoscopists, usually based on known risk factors for DB. Anticoagulant use was the most important factor in decision-making to perform PC, independent of the experience of the endoscopist. Nonetheless, although not considered cost-effective, 1 in 7 endoscopists also apply PC for adenomas <2 cm.

A complete colonoscopy is necessary for patients with appendiceal serrated polyps: results of a nationwide pathology database

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Background: Small series suggest that although appendiceal serrated polyps (SP) are rare, these might be an indicator for serious colon pathology. There are currently no guidelines how to proceed after the incidental discovery of a SP in the appendix after an appendectomy. Our objective is to determine if there is an increase of colorectal (pre)malignant lesions in patients with an appendiceal SP.
Methods: Reports of all appendiceal SPs were retrieved from the Dutch Pathology Registry (PALGA) from 1983 to 2016. Subsequently, all additional (prior and subsequent) reports on colorectal lesions including SPs, conventional adenomas and colorectal carcinoma (CRC) of these patients were retrieved. Advanced adenoma was defined as either (tubulo)villous histology or high grade dysplasia or, when available, a size larger than 10 mm. Subgroup analysis of patients with a suspected appendicitis was performed.
Results: In total, 846 patients were diagnosed with an appendiceal SP. Hyperplastic polyps were most common (n=515, 61%), followed by sessile serrated lesions (n=230, 27%). SPs not otherwise specified and traditional serrated adenomas were infrequent (n=99, 12% and n=2, <1%, respectively).
In 245 patients (29%) additional colorectal lesions were diagnosed; 82 patients (10%) even had ≥5 lesions and polyposis (≥ 10 lesions) occurred in 34 patients (4%). At least 138 patients (16.3%) had an advanced adenoma as additional colorectal lesion. Five patients had evidence of serrated polyposis syndrome (SPS) and an additional 13 patients were suspected of SPS based on the pathology reports, together 2.1%. Synchronous CRC was diagnosed in 19% of the patients (n=159). Metachronous CRC occurred in 7% (n=59), mainly as prior malignancy (n=35, 71%).
Subgroup analysis of patients with suspected appendicitis identified 282 patients of which 50 patients (17.7%) received follow-up colonoscopy with discovery of additional colorectal lesions. In 12 patients (4.2%) an advanced adenoma was detected and in 2 patients a CRC. The median age of these patients at time of SP diagnosis was 53.7 (range 10–94) and 24.5% of patients was ≤40 years old.
Conclusion: In the largest study of appendiceal SPs we demonstrate that in 29% of these patients additional colorectal (pre)malignancies are present. In patients in which the appendix was removed due to suspected appendicitis this was at least 18%. These results warrant a complete colonoscopy for each patient with the diagnosis of an appendiceal SP to screen for additional relevant colorectal lesions.

Substantial and sustained improvement of serrated polyp detection after a simple educational intervention - Results from a prospective controlled trial

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Background: Serrated polyps (SPs) are an important cause of postcolonoscopy colorectal cancers (PCCRs) which is likely a result of suboptimal SP detection during colonoscopy. Educational interventions aiming to increase adenoma detection have been demonstrated to be very effective, but no such interventions have been developed to increase SP detection. We assessed the long-term effect of a simple educational intervention focusing on optimizing SP detection.
Methods: An educational intervention, consisting of two 45-minute training sessions on serrated polyp detection, was given to endoscopists in 9 Dutch hospitals; one session in 2014 and one in 2017. Hundred randomly selected and untrained endoscopists from other hospitals were selected as control group. Our primary outcome measure was the proximal SP detection rate (PSPDR) in trained vs. untrained endoscopists within all FIT-positive colonoscopies these endoscopists performed from 2014 to 2018 in the national population screening program.
Results: Seventeen trained and 100 untrained endoscopists were included, who performed 11,305 and 51,039 colonoscopies, respectively. PSPDR was equal at baseline (9.3% vs. 9.3%, p=.48). After training, the PSPDR of trained endoscopists gradually increased to 15.6% in 2018. This was significantly higher than the PSPDR of untrained endoscopists, which remained stable around 10% (p=.018). This corresponded to an odds ratio of 1.49 (95%CI 1.07-2.07) for the detection of proximal SPs in case a colonoscopy was performed by one of the trained endoscopists. The effect of the training was most markedly seen in endoscopists with a below-average PSPDR (≤6%) at baseline: all endoscopists with below-average PSPDR at baseline improved to an average PSPDR (6-12%) after the first training session. In addition, 57% of endoscopists with average PSPDR at baseline, improved to an above-average PSPDR (>12%) after the first training session. The second training session resulted in further improvement of 24% of endoscopists, all of whom fell in the range of average PSPDR *before* training session two, but in the range of above-average PSPDR *after* training session two.
Conclusion: Our results show that long-lasting improvement in SP detection can be achieved with a relatively simple educational intervention. Endoscopists with a low PSPDR at baseline benefitted most from our intervention, which supports introduction of PSPDR monitoring in daily practice in order to identify and target low-performers for training.

Educating dyspeptic patients reduces need for upper gastrointestinal endoscopy with > 40%: a multi-center randomized controlled trial

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Background: Upper gastrointestinal (GI) endoscopy is frequently performed in dyspeptic patients. Diagnostic yield is low and clinical implications are limited. Therefore, dyspeptic patients are exposed to an avoidable invasive procedure. Symptom comprehension and lifestyle modifications potentially reduce patients' need for upper GI endoscopy.
Methods: Our aim was to study whether education of dyspeptic patients by e-learning reduces upper GI endoscopies in patients referred for direct-access upper GI endoscopy. We performed a multi-center, randomized, controlled trial in dyspeptic patients aged 18-70 years, referred for open-access upper GI endoscopy. We excluded patients with alarming features or family history of upper GI malignancy. We recruited patients from four district hospitals in the Netherlands and randomly assigned (1:1 ratio) patients to receive either e-learning education (intervention) or endoscopy (control). Primary outcome was the difference in proportion of cancelled upper GI endoscopies at 12 weeks. Secondary outcomes included symptom type and severity (PAGI-SYM), dyspepsia-related quality of life (SF-NDI) and health anxiety (SHAI). NCT03205319.
Results: We randomized a total of 119 patients (median age 48 yrs [IQR:37-56], male 40%, Western European ethnicity 90%, use of acid-suppressive drugs 74%, previous upper GI endoscopy 24%). There were no baseline differences between study groups (intervention n=62; control n=57) with respect to symptom type/severity, quality of life and health anxiety. At 12 weeks, 61% of patients in the intervention group had cancelled endoscopy, vs. 14% of controls (RR 0.44 [95% CI 0.31-0.62], p <0.001). No gastrointestinal malignancy was detected.
Conclusion: E-learning education of dyspeptic patients effectively and safely reduces 47% of upper GI endoscopies. Education by e-learning may be broadly implemented in clinical practice to improve efficient use of upper GI endoscopies.

TRPM8 and TRPA1 mRNA expression in colonic biopsies of patients with irritable bowel syndrome and healthy volunteers.

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Background: Transient Receptor Potential (TRP) channels are involved in peripheral nociceptive mechanisms and neuroimmune interactions contributing to visceral hypersensitivity – a hallmark of irritable bowel syndrome (IBS). TRP Ankyrin 1 (TRPA1) has pronociceptive properties and is sensitized by inflammatory mediators. TRP Melastatin 8 (TRPM8) activation, is likely protective against nociception and inflammation. In a cohort of IBS patients and controls, our aims were to: 1) measure TRPM8 and TRPA1 mRNA transcript expression, 2) correlate expression levels with GI symptoms, and 3) explore regional differences in colonic expression.
Methods: Sigmoid biopsies were collected from 30 IBS patients (Rome III) and 23 healthy controls. Additional proximal colon biopsies were obtained in 24 of the 30 patients. TRPM8 and TRPA1 mRNA levels were analyzed in duplicate by quantitative reverse-transcriptase–polymerase-chain-reaction (Biorad), using primers from Biolegio and normalized to GAPDH. Symptoms were assessed using the gastrointestinal-symptom-rating-scale and a 14-day diary. Data were analyzed by linear regression and Wilcoxon signed-rank tests. Results are expressed as relative mRNA values using the $-2^{\Delta Ct}$method.
Results: Sigmoid expressions of both TRPM8 and TRPA1 were significantly upregulated in IBS patients versus controls, $p<0.0005$ and $p<0.0001$, respectively, corrected for age and gender. Interestingly, TRPM8 expression in the proximal IBS colon was significantly higher compared to sigmoid, whereas TRPA1 expression in the IBS sigmoid was significantly higher than in the proximal colon, both $p<0.0001$. In IBS patients, expression did not correlate with symptom severity.
Conclusion: These results demonstrate for the first time that sigmoid TRPM8 and TRPA1 mRNA levels are significantly higher in IBS patients compared to healthy subjects. These findings are important because TRPM8 up-regulation can play a role in anti-inflammatory mechanisms and TRPA1 is implicated in preclinical models of visceral pain. Further investigation is warranted to ascertain the functional relevance of these findings.

Smartphone-based symptom assessment using the Experience Sampling Method provides insight into patient specific stress-abdominal pain interaction in Irritable Bowel Syndrome

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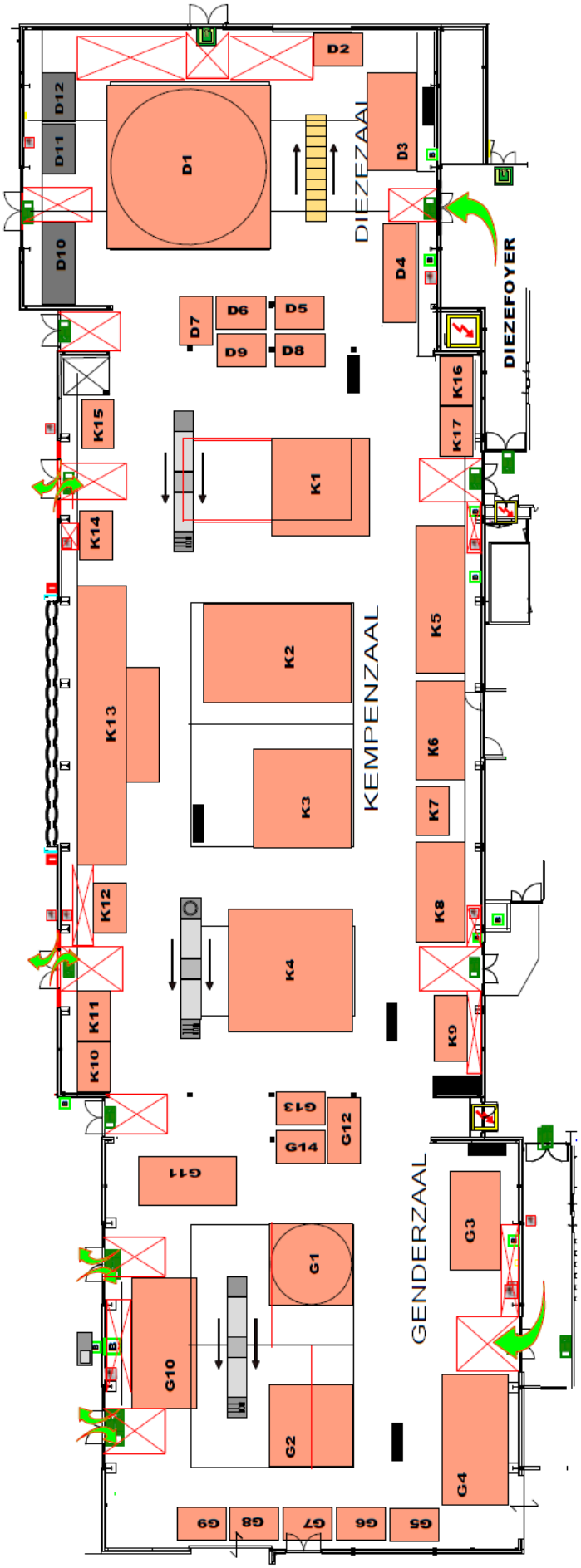
Background: Gastrointestinal symptoms in irritable bowel syndrome (IBS) have been correlated to psychological factors, such as anxiety, depression and stress. Most studies used retrospective symptom assessment, which hampers considering temporal fluctuations. Real-time symptom assessment might reveal the interplay between abdominal and affective symptoms more reliably in a longitudinal perspective. The aim of this study was to evaluate the association between stress and abdominal pain, using the Experience Sampling Method (ESM) as a real-time and repeated measurement method.
Methods: Thirty-seven Rome-IV IBS patients (IBS; 26 female; mean age 36.7) and 36 healthy subjects (HC; 24 female; mean age 31.1) completed a structured electronic ESM during seven consecutive days. Abdominal pain and stress were scored on an 11-point Numeric Rating Scale by using ESM at a maximum of ten random moments during the day.
Results: Abdominal pain scores were 2.21 points higher in IBS compared to HC ($p<0.001$), whereas stress levels did not differ significantly (B: 0.250, $p=0.406$). In IBS, a 1-point increase in stress was associated with, on average, 0.10 points increase in abdominal pain ($p=0.017$). In HC, this was only 0.02 ($p=0.002$). Stress levels at t=-1 (*i.e.*lagged scores) were not a significant predictor for abdominal pain at t=0 in both groups, and vice versa.
Conclusion: We demonstrate that real-time stress scores are positively associated with concurrent abdominal pain scores in IBS, but not in HC, whereas abdominal pain scores could not be predicted by preceding stress levels, and vice versa, suggesting an in-the-moment rather than a longitudinal association. Furthermore, our results point towards a difference in response to stress and not a difference in experienced stress per se. This study underlines the importance of considering the individual flow of daily life when evaluating symptom patterns in IBS and supports the use of real-time measurement when interpreting potential influencers of abdominal symptoms.



Genderzaal	
G 1	Boston Scientific Nederland BV
G 2	Gilead Sciences Nederland BV
G 3	MSD
G 4	Mylan BV
G 5	Angiocare BV
G 6	Medix Publishers BV
G 7	Meditec BV
G 8	Teva Nederland BV
G 9	Prion Medical BV
G 10	Dr. Falk Pharma Benelux BV
G 11	Pfizer PFE BV
G 12	B.Braun Medical BV
G 13	Truvion Healthcare BV
G 14	Added Pharma

Kempenzaal	
K 1	PENTAX Nederland BV & Hitachi Medical systems Nederland BV
K 2	Ferring BV
K 3	Janssen - Cilag BV
K 4	Takeda Nederland BV
K 5	FMH Medical BV
K 6	Tramedico BV
K 7	Avanos Medical Ibc / Halyard Health
K 8	Norgine
K 9	Lamepro BV
K 10	Cook Medical
K 11	Biogen Netherlands BV
K 12	Stinnow
K 13	Olympus Nederland BV 7x2 +
K 14	Zambon Nederland BV
K 15	W.L.Gore & Associates
K 16	Mermaid Medical
K 17	Mediplast

Diezezaal	
D 1	AbbVie
D 2	Selinion Medical
D 3	RVC BV
D 4	Cobra Medical BV
D 5	Fresenius Kabi BV
D 6	Laborie / MMS
D 7	Sananet Care BV
D 8	Bayer BV
D 9	Vifor Pharma BV
D 10	Crohn en Colitis Ulcerosea Vereniging Nederland
D 11	Alvleeskliervereniging
D 12	Ingeborg Kuys Healthcare communications