DIGESTIVE DISEASE DAYS

2024

PROGRAMMA

8 en 9 september

DDD Online

NVGE
NEDERLANDSE VERENIGING
VOOR GASTRO-ENTEROLOGIE

DIGESTIVE DISEASE DAYS - DDD

Het programma van de DDD Online werd samengesteld met inbreng van de volgende verenigingen en secties:

Nederlandse Vereniging voor Gastro-enterologie
Nederlandse Vereniging voor Gastrointestinale Chirurgie
Nederlandse Vereniging voor Hepatologie
Nederlandse Vereniging van Maag-Darm-Leverartsen

Secties:
Sectie Gastrointestinale Endoscopie
Sectie Neurogastroenterologie en Motiliteit
Sectie Gastrointestinale Oncologie
Sectie Inflammatoire Darmziekten IBD
Sectie Kinder-MDL
Verpleegkundigen & Verzorgenden Nederland – MDL

INHOUDSOPGAVE **pag.**

Woensdag 8 september 2021

De nummers achter de abstracttitels verwijzen naar het paginanummer waar het abstract te vinden is

INHOUDSOPGAVE **pag.**

Donderdag 9 september 2021

De nummers achter de abstracttitels verwijzen naar het paginanummer waar het abstract te vinden is

WOENSDAG 8 SEPTEMBER 2021

Symposium – Sectie Inflammatoire Darmziekten **vanuit de Talkshow studio**

Voorzitters: *M. Duijvestein en F. van Schaik*

IBD beyond the basics

08.30	Introductie
08.35	Therapierefractaire proctitis *Dr. A.E. van der Meulen, MDL-arts, LUMC*
08.47	Discussie/vragen
08.52	Persisterende klachten als mucosaal herstel is bereikt *Dr. Z. Mujagic, MDL-arts, Maastricht UMC*
09.04	Discussie/vragen
09.09	Acute severe colitis - behandeling anno 2021. *Prof. dr. G. d'Haens, MDL-arts, Amsterdam UMC, locatie AMC*
09.21	Discussie/vragen en afsluiting
09.30	Einde van dit programma onderdeel. Het volgende programma start om 10.00 uur. Intussen kunt u de break-out sessie Sectie Inflammatoire Darmziekten volgen.

WOENSDAG 8 SEPTEMBER

NVMDL i.o. **vanuit de Virtual Room**

Voorzitters/moderatoren: Froukje van Hoeij en Clasine de Klerk

08.30 Tips & tricks van de expert m.b.t. het digitaal portfolio MDL
André Davidsz, VREST

Break-out sessie Sectie Inflammatoire Darmziekten

09.30 Immunosuppressie voor IBD tijdens een recente of actieve maligniteit
Dr. H.H. Fidder, MDL-art, UMC Utrecht
Dr. M.W.M.D. Lutgens, MDL-arts, Elizabeth TweeSteden Ziekenhuis

10.00 Einde van de sessie

Symposium – Sectie Neurogastroenterologie en Motiliteit **vanuit de Talkshow studio**

Voorzitter: *F.B. van Hoeij*

Niet blij met de nieuwe anatomie: post chirurgische motoriekproblemen

10.00 Complicaties na slokdarmresectie
Dr. M.D.P. Luyer, chirurg, Catharina Ziekenhuis, Eindhoven en
Prof. dr. B.L.A.M. Weusten, MDL-arts, UMC Utrecht / St. Antonius Ziekenhuis Nieuwegein

10.20 Complicaties na bariatrische chirurgie
Dr. F.M.H. van Dielen, chirurg, Máxima Medisch Centrum Eindhoven en
Dr. G.M.C. Masclee, MDL-arts i.o., Rijnstate, Arnhem

10.40 Discussie
Voorzitter en panelleden

11.00 Einde van dit programma onderdeel. Het volgende programma start om 11.30 uur.

Abstractsessie sectie Gastrointestinale Oncologie **vanuit de Virtual Room**

Voorzitters: *T.M. Bisseling en Y.J. van Herwaarden*

10.00 An objective risk prediction assay using automated multiplexed immunofluorescent staining accurately risk stratifies Barrett's Esophagus patients with low-grade dysplasia (p. 38)
A.M. Khoshiwal[1], N.F. Frei[1], R.E. Pouw[1], F. Ten Kate[2], C.A. Seldenrijk[3], J. Offerhaus[2], J.R. Goldblum[4], J.M. Davison[5], E. Montgomery[6], E. Bossart[7], R. Critchley-Thorne[7], J.J. Bergman[8]
[1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Pathology, Sint Antonius ziekenhuis, Nieuwegein, The Netherlands .[4]Dept. of Pathology, Cleveland clinic, Cleveland, USA.[5]Dept. of Pathology, University of Pittsburgh, Pittsburgh, USA.[6]Dept. of Pathology, University of Miami, Miami, USA.[7]Cernostics, Inc, Pittsburgh, USA.[8]Dept. of Gastroenterology, Amsterdam UMC, Amsterdam, The Netherlands.

10.06 Linked color imaging improves identification of early gastric cancer for both expert and non-expert endoscopists (p. 39)
K.N. Fockens[1], A.J. de Groof[1], J.A. van der Putten[2], T. Khurelbaatar[3], H. Fukuda[3], Y. Miura[3], T. Takezawa[3], H. Osawa[3], H. Yamamoto[3], J.J.G.H.M Bergman[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands.[2]School of Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands.[3]Dept. of Gastroenterology and Hepatology, Jichi Medical Center, Tochigi, Japan.

10.12 Risk factors of metachronous peritoneal metastasis after preoperative chemotherapy and potentially curative gastric cancer resection in the CRITICS trial (p. 39)

I.A. Caspers[1], K. Sikorska[2], A. E. Slagter[3], W.M. Meerskhoek-Klein Kranenbarg[4], C.J.H. van de Velde[4], P Lind[5], M Nordsmark[6], E.P.M. Jansen[3], M Verheij[7], J.W. van Sandick[8], A Cats[1], N.C.T. van Grieken[9] [1]Dept. of Gastroenterology, NKI Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [2]Dept. of Biometrics, NKI Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [3]Dept. of Radiation Oncology, NKI Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [4]Dept. of Surgery, LUMC, Leiden, The Netherlands .[5]Dept. of Medical Oncology, Stockholm Söder Hospital, Stockholm, Zweden. [6]Dept. of Medical Oncology, Aarhus university, Aarhus, Denemarken. [7]Dept. of Radiation Oncology, Radboud UMC, Nijmegen, The Netherlands .[8]Dept. of Surgery, NKI Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [9]Dept. of Pathology, Amsterdam UMC, Amsterdam, The Netherlands.

10.18 The prognostic value of tumor markers in patients with resectable gastric cancer receiving perioperative therapy in the CRITICS trial (p. 40)

A.E. Slagter[1], M.A. Vollebergh[2], I.A. Caspers[3], J.W. van Sandick[4], K. Sikorska[5], P.A. Lind[6], M. Nordsmark[7], H. Putter[8], J.P.B.M. Braak[9], E. Meershoek-Klein Kranenbarg[9], C.J.H. van de Velde[9], E.P.M. Jansen[1], A. Cats[3], H.W.M. van Laarhoven[10], N.C.T. van Grieken[11], M. Verheij[12] [1]Dept. of Radiotherapy, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [2]Dept. of Medical Oncology, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [3]Dept. of Gastroenterology, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [4]Dept. of Surgery, Antoni van Leeuwenhoek, Amsterdam, The Netherlands. [5]Dept. of Biostatistics, Antoni van Leeuwenhoek, Amsterdam, The Netherlands .[6]Dept. of Medical Oncology, Stockholm Söder Hospital, Stockholm, Sweden. [7]Dept. of Medical Oncology, Aarhus University, Nordre Ringgade 1, Denmark. [8]Dept. of Biostatistics, Leiden University Hospital, Leiden, The Netherlands. [9]Dept. of Surgery, Leiden University Hospital, Leiden, The Netherlands.[10]Dept. of Medical Oncology, Amsterdam University Medical Centers, Amsterdam, The Netherlands. [11]Dept. of Pathology, Amsterdam University Medical Centers, Amsterdam, The Netherlands. [12]Dept. of Radiotherapy, Radboud University Medical Center, Nijmegen, The Netherlands.

10.24 High recurrence rates of advanced neoplasia after endoscopic resection or surgical treatment. a retrospective cohort study (p. 41)

M.E.W. Derks[1], M. te Groen[1], C.P. Peters[2], G. Dijkstra[3], A.C. de Vries[4], T.E.H. Römkens[5], C.S. Horjus[6], N.K. de Boer[7], L.A.A.P. Derikx[1], F. Hoentjen[1] [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Centre, Nijmegen, Nederland, [2]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centre, Amsterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, University Medical Centre Groningen, Groningen, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Erasmus Medical Centre, Rotterdam, The Netherlands .[5]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Hospital, Den Bosch, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centre, Vrije Universiteit Amsterdam, Amsterdam, Nederland.

10.30 Oncological and functional outcome of elderly rectal cancer patients treated with contact x-ray brachytherapy (p. 42)

P.A. Custers[1-3], B.M. Geubels[1], I.H. Huibregtse[2], F.P. Peters[3-5], E.G. Engelhardt[4], G.L. Beets[1], C.A.M. Marijnen[3-5], M.E. van Leerdam[2-6], B. van Triest[3] [1]Dept. of Surgery, Netherlands Cancer Institute, Amsterdam, The Netherlands.[2]Dept. of Gastroenterology, Netherlands Cancer Institute, Amsterdam, The Netherlands.[3]Dept. of Radiation Oncology, Netherlands Cancer Institute, Amsterdam, The Netherlands.[4]Division of Psychosocial Research and Epidemiology, Netherlands Cancer Institute, Amsterdam, The Netherlands.[5]Dept. of Radiation Oncology, Leiden University Medical Centre, Leiden, The Netherlands.[6]Dept. of Gastroenterology and Hepatology, Leiden University Medical Centre, Leiden, Nederland.

10.36 Polypectomy of residual adenomas after neoadjuvant therapy in rectal cancer (p. 43)
D. Jou-Valencia[1], J.J. Harlaar[1], K. van der Linde[2], S.A. Koopal[1], C. Hoff[1], [1]Dept. of Surgery, Medisch Centrum Leeuwarden, Leeuwarden, The Netherlands.[2]Dept. of Gastroenterology and Hepatology, Medisch Centrum Leeuwarden, Leeuwarden, Nederland.

10.42 Pitfalls in de diagnostiek van perihilair cholangiocarcinoom
D. de Jong, PhD, Erasmus MC, Rotterdam

11.00 Einde van dit programma onderdeel. Het volgende programma start om 11.30 uur.

Discussiesessie MLDS **vanuit de Talkshow studio**

Alcoholpreventie. wat het MDL-veld kan leren van de antirooklobby'

11.30 Discussiesessie: 'Alcoholpreventie: de rol van de MDL-arts en wat het MDL-veld kan leren van de antirooklobby'.

Na een inleiding met feiten en cijfers over alcoholgebruik gaan onderstaande gasten onder leiding van een moderator in discussie over het thema alcoholpreventie. Hierbij zal ook het Netwerk Alcoholproblematiek, een multidisciplinair programma om alcoholproblematiek bij patiënten te verminderen in het Jeroen Bosch-ziekenhuis, aan bod komen.

Gasten zijn:
- Lennart Booij, sessievoorzitter
- Drs. Wanda de Kanter, longarts, voorzitter Stichting Rookpreventie Jeugd;
- Drs. Ninette van Hasselt, hoofd van het Expertisecentrum Alcohol en het programma Alcohol bij het Trimbos-instituut
- Dr. Bart Takkenberg, MDL-arts, Amsterdam UMC, locatie AMC
- Dr. Andrea Rozema, Senior onderzoeker/ onderzoekscoördinator, Tilburg University (Tranzo)
- Bernique Tool, directeur MLDS, vice-voorzitter Samenwerkende Gezondheids-Fondsen
- Drs. Charles Wijnker, waarnemend directeur-generaal Volksgezondheid niet covid zaken, ministerie van VWS

Organisatoren van de sessie
MLDS
Nederlandse Vereniging voor Gastroenterologie (NVGE)
Nederlandse Vereniging voor Hepatologie (NVH)
Nederlandse Vereniging van Maag-Darm-Leverartsen (NVMDL)
Alliantie AlcoholPreventie voor de Gezonde Generatie (MLDS en KWF)

12.30 Einde van dit programma onderdeel, mogelijkheid tot volgen satelliet symposia vanaf 13.00 uur. Vanaf 14.00 uur wordt het DDD programma hervat.

Meet the Epert – Oncologie **vanuit de Virtual studio**

Voorzitter: *V.M.C.W. Spaander*

Innovatie in detectie

11.30 Fluorescentie endoscopie
Prof. dr. W.B. Nagengast, MDL-arts, UMC Groningen

12.00 Sentinal node navigated chirurgie techniek
Prof. dr. B.L.A.M. Weusten, MDL-arts, UMC Utrecht

12.30 Einde van dit programma onderdeel, mogelijkheid tot volgen satelliet symposia vanaf 13.00 uur. Vanaf 14.00 uur wordt het DDD programma hervat.

Deze sessie is vrij toegankelijk voor alle deelnemers aan de DDD. Er is gelegenheid tot het stellen van vragen via de Q&A functie, deze vragen kunt u gedurende de sessie al inbrengen.

Satelliet symposia

13.00 **Lifestyle en IBD: meet the experts**

Satelliet symposium verzorgd door de firma Janssen-Cilag. Tijdens de uitzending kunt u via de Q&A vragen stellen aan de volgende sprekers:
Dr. Annemarie de Vries, MDL-arts, Erasmus MC
Dr. Jeanine Roeters van Lennep, Internist, Erasmus MC
Prof. Dr. Liesbeth van Rossum, internist, Erasmus MC
Dr. Vincent de Jonge, MDL-arts, Albert Schweitzer Dordrecht

13.30 **Evoluties in IBD patiëntenzorg; aanpassen aan veranderingen**

Satelliet symposium verzorgd door de firma Galapagos.
Tandem talk:
Prof. dr. Severine Vermeire (UZ Leuven) en prof. dr. Marieke Pierik (MUMC)

14.00 Start DDD-programma

Symposium NVGIC **vanuit de Talkshow studio**

Voorzitters: *D.E. Hilling en A.L. Vahrmeijer*

Imaging technieken in de upper & lower GI

14.00 Fluorescentie endoscopie oesofagus en rectum voor o.a. respons beoordeling na neoadjuvante therapie
Prof. dr. W.B. Nagengast, MDL-arts, UMC Groningen

14.20 ICG perfusie upper GI
Dr. M.I. van Berge Henegouwen, Amsterdam UMC, loc. AMC
J.J. Joosten, promovendus, Amsterdam UMC

14.40 ICG perfusie colorectaal/toekomst
Dr. D.E. Hilling, chirurg, Erasmus MC Kanker Instituut, Rotterdam
Dr. A.L. Vahrmeijer, chirurg, Leids Universitair Medisch Centrum

15.00 Einde van dit programma onderdeel. Het volgende programma start om 15.30 uur. Intussen kunt u Postersessie 1 volgen.

Abstractsessie sectie Inflammatoire Darmziekten **vanuit de Virtual Room**

Voorzitters. *D.P. van Asseldonk en S.J.H. van Erp*

14.00 Baseline Hypertrophy of the Submucosa at intestinal ultrasound predicts Failure of Treatment in patients with ulcerative colitis (p. 44)
F. de Voogd[1], M. Duijvestein[1], C. Ponsioen[1], M. Löwenberg[1], G. D'Haens[1], K. Gecse[1], [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands.

14.06 Serological biomarkers of type I, III and IV collagen turnover for detection and future progression of stricturing and penetrating Crohn's disease (p. 45)
A.R. Bourgonje[1], M. Alexdottir[2], A.T. Otten[1], R. Loveikyte[3], A.C. Bay-Jensen[2], H.M. van Dullemen[1], M.C. Visschedijk[1], E.A.M. Festen[1], R.K. Weersma[1], M.A. Karsdal[2], K.N. Faber[1], J.H. Mortensen[2], G. Dijkstra[1] [1]Dept. of Gastroenterology and Hepatology, Universitair Medisch Centrum Groningen, Groningen, The Netherlands. [2]Dept. of Gastroenterology, Nordic Bioscience, Herlev, Denemarken. [3]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands.

14.12 Colitis-associated advanced neoplasia is associated with insufficient adherence to surveillance guidelines (p. 46)
M. te Groen[1], M.E.W. Derks[1], C.P. Peters[2], G. Dijkstra[3], A.C. de Vries[4], T.E.H. Römkens[5], C.S. Horjus[6], N.K. de Boer[7], M.E. de Jong[1], L.A.A.P. Derikx[1], F. Hoentjen[1] [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Centre, Nijmegen, The Netherlands.[2]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centre, Amsterdam, The Netherlands.[3]Dept. of Gastroenterology and Hepatology, University Medical Centre Groningen, Groningen, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Erasmus Medical Centre, Rotterdam, The Netherlands. [5]Dept. of Gastro-enterology and Hepatology, Jeroen Bosch Hospital, Den Bosch, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centre, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.

14.18 Factors independently associated with fatigue in IBD: results from the baseline dataset of the PREdiCCt study (p. 47)
L.A.A.P. Derikx[1], C.W. Lees[2], PREdiCCt writing group[2] [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands.[2]Dept. of Gastroenterology, Edinburgh IBD unit, Western General Hospital, Edinburgh, UK..

14.24 Neither Inflammatory bowel disease nor immunosuppressants are associated with an increased risk for severe COVID-19. An observational Dutch cohort-study (p. 48)
L.P.L. Gilissen[1], S.G.H. Heinen[2], L. Rijpma-Jacobs[3], E. Schoon[3], R. Schreuder[3], A. Wensing[3], M.C.M. van der Ende-Van Loon[3], J.G. Bloemen[4], J.M. Stapelbroek[5], A. Stronkhorst[3] [1]Dept. of Gastroenterology and Hepatology, Catharina Hospital Eindhoven, Eindhoven, The Netherlands. [2]Dept. of Research & Development, Catharina Hospital, Eindhoven, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Surgery, Catharina Hospital, Eindhoven, The Netherlands .[5]Dept. of Pediatrics, Catharina Hospital, Eindhoven, The Netherlands.

14.30 Care for recently diagnosed inflammatory bowel disease patients: Lessons learned from a patient-centred, mixed-method study (p. 49)
L.W. van Erp[1], M.K. Neijenhuis[1], W. Heida[1], J. Derwig[2], C.E. Geleijns[2], M.J.M. Groenen[1], P.J. Wahab[1], [1]Dept. of Gastroenterology and Hepatology, Rijnstate ziekenhuis, Arnhem, The Netherlands.[2]Dept. of Medical Psychology, Rijnstate ziekenhuis, Arnhem, The Netherlands.

14.36 Development and implementation of a remote monitoring tool for real-world assessment of mild, moderate and severe infectious complications in Inflammatory Bowel Disease patients (p. 50)
A. Rezazadeh Ardabili[1], D.S.J. Wintjens[1], Z Mujagic[1], M. Cilissen[1], L.P.S. Stassen[2], J.J.L. Haans[1], D.M.A.E. Jonkers[1], M.J. Pierik[3] [1]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center+, Maastricht, The Netherlands.[2]Dept. of Surgery, Maastricht University Medical Center+, Maastricht, The Netherlands.[3]Dept. of Gastroenterology, Maastricht University Medical Center+, Maastricht, The Netherlands.

14.42 Validation of a novel point-of-care finger prick test for C-reactive protein, infliximab and adalimumab in patients with inflammatory bowel disease (p. 51)
A. Volkers[1], M. Löwenberg[1], K. Bray[2], B. Bahur[2], M. Braad[1], Y. Abeling[1], K. Gecse[1], M. Duijvestein[1], C. Ponsioen[1], G. D'Haens[1,] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]ProciseDx, San Diego, VS.

14.48 Algemene Ledenvergadering Sectie IBD

15.00 Einde van dit programma onderdeel. Het volgende programma start om 15.30 uur. Intussen kunt u Postersessie 1 volgen.

Postersessie 1

Voorzitters. *P. van der Veek*

15.00 Complication rate after early detachment of T-Fasteners after Percutaneous Radiologic Gastrostomy (p. 52)
S.T. Bac[1], P.M. Tetteroo[2], M.L.J. Smits[2], J.F. Monkelbaan[3] [1]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, Nederland. [2]Dept. of Radiology, University Medical Center Utrecht, Utrecht, Nederland. [3]Dept. of Gastroenterology, University Medical Center Utrecht, Utrecht, Nederland.

15.06 'Eetscore' in patients with Inflammatory Bowel Disease: an online tool to assess diet quality and provide personalised dietary advice (p. 53)
C.R. Lamers[1], L.W. van Erp[2], A.I. Slotegraaf[3], M.J.M. Groenen[2], N.M. de Roos[3], P.J. Wahab[2], B.J.M. Witteman[1], [1]Dept. of Gastroenterology and Hepatology, Hospital Gelderse Vallei, Ede, Nederland. [2]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, Nederland. [3]Dept. of Human Nutrition and Health, Wageningen University & Research, Wageningen, Nederland.

15.12 Obesity is associated with higher risk of immunogenicity to adalimumab, but not infliximab, in patients with inflammatory bowel disease (p. 54)
R. Mahmoud[1], J.P.D. Schultheiss[1], J.M. Louwers[1], M.T. van der Kaaij[1], B.P. van Hellemondt[1], N Mahmmod[2], P. van Boeckel[2], B. Jharap[3], B. Oldenburg[1], H.H. Fidder[1] [1]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Utrecht, Nederland. [2]Dept. of Gastroenterology and Hepatology, St. Antonius Ziekenhuis, Nieuwegein, Nederland. [3]Dept. of Gastroenterology and Hepatology, Meander Medisch Centrum, Amersfoort, Nederland.

15.18 Faecalibacterium prausnitzii modulates intestinal mucosal health via HIF1α-induced epithelial production of IL-18 (p. 55)

R.R. Fagundes[1], G. Bravo-Ruiseco[2], S. Hu[1], C.T. Taylor[3], R.K. Weersma[1], G. Dijkstra[1], H.J.M. Harmsen[2], K.N. Faber[1] [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, Nederland. [2]Dept. of Medical Microbiology, University Medical Center Groningen, Groningen, Nederland. [3]Conway Institute, Dublin, Ierland.

Symposium NVGE **vanuit de Talkshow studio**

Voorzitters: *W.H. de Vos tot Nederveen Cappel en L.P.S. Stassen*

Baanbrekend MDL-onderzoek in de spotlight

15.30 Immuuncellen in de buikholte beschermen de darm
Dr. J. Grootjans, MDL-arts, Amsterdam UMC, loc. AMC

15.50 TIMID consortium
Dr. J.N. Samsom, universitair hoofddocent, Erasmus MC, Rotterdam

16.10 Symptoms all in your head - or in your gut? Maybe a little of both
Dr. D. Keszthelyi, MDL-arts, Maastricht Universitair Medisch Centrum

16.30 Einde van dit programma onderdeel. Het volgende programma start om 17.00 uur.

Abstractsessie NVGIC **vanuit de Virtual Room**

Voorzitters. *J. Govaert en J.H. Volders*

15.30 What is the outcome of gallstone patients treated in primary care? A multi-practice comparative analysis (p. 56)
F.M. Thunnissen[1], L.D. Drager[1], B. Braak[2], J.P.H. Drenth[3], C.J.H.M. van Laarhoven[1], H.J. Schers[2], P.R. de Reuver[1] [1]Dept. of Surgery, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of General practice and elderly care medicine, Radboudumc, Nijmegen, The Netherlands. [3]Dept. of Gastroenterology, Radboudumc, Nijmegen, The Netherlands.

15.36 The diagnostic value of staging laparoscopy in gallbladder cancer: a nation-wide cohort study (p. 57)
M. van Dooren[1], E.A.J. de Savornin Lohman[1], E.L.F. Brekelmans[1], P.A.J. Vissers[2], J.I. Erdmann[3], A.E. Braat[4], J. Hagendoorn[5], F. Daams[3], R. van Dam[6], M.T. de Boer[7], P.B. van den Boezem[1], B. Groot Koerkamp[8], P.R. de Reuver[1], [1]Dept. of Surgery, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Scientific Research, Netherlands Comprehensive Cancer Organization (IKNL), Utrecht, The Netherlands. [3]Dept. of Surgery, Amsterdam University Medical Center, Amsterdam, The Netherlands. [4]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands. [5]Dept. of Surgery, UMC Utrecht Cancer Center, Utrecht, The Netherlands. [6]Dept. of Surgery, Maastricht University Medical Center +, Maastricht, The Netherlands. [7]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands. [8]Dept. of Surgery, Erasmusmc, Rotterdam, The Netherlands.

15.42 Impact of lymph node ratio on survival in the histopathological subtypes of resected ampullary cancer: a retrospective international multicenter cohort study (p. 58)
D.H.L. Lemmers[1], G Malleo[2], K Khalil[3], S Robinson[4], G Nappo[5], G Gradinariu[6], M Bonds[7], A Halimi[8], M Mortimer[9], V.K. Mavroedis[10], N Napoli[11], F Burdio[12], L Bolm[13], U Wellner[13], P Pesseaux[14], B Ielpo[12], U Boggi[11], Z Soonawalla[10], B Al-Sarireh[9], N.B. Jamieson[15], L Zarantonello[8], T Armstrong [16], A Alseidi[7], G.K. Fusai[6], A Zerbi[5], S White[4], K.J. Roberts[3], R

Salvia[2], M.G. Besselink[1], M Abu Hilal[17] [1]Dept. of Surgery, Cancer Center Amsterdam, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands.[2]Dept. of Surgery, University hospital of Verona, VERONA, Italië. [3]Dept. of Surgery, Faculty of Medicine, University of Birmingham, Birmingham, UK.. [4]Dept. of Surgery, Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle, UK.. [5]Dept. of Surgery, Humanitas Research Hospital, Rozzano, Milano, Italy. [6]Dept. of Surgery, Royal Free Hospital NHS Foundation Trust, London, UK.. [7]Dept. of Surgery, Virginia Mason Medical Center, Seattle, USA.[8]Dept. of Surgery, Karolinska University Hospital, Stockholm, Wweden. [9]Dept. of Surgery, Morriston Hospital, Swansea, UK.. [10]Dept. of Surgery, Oxford University Hospitals NHS Foundation Trust, Oxford, UK.. [11]Dept. of Surgery, Pisa University Hospital, Pisa, Italy. [12]Dept. of Surgery, Hepatopancreatobiliary Unit, Hospital del Mar, Barcelona, Spain. [13]Dept. of Surgery, University Medical Center Schleswig-Holstein, Lübeck, Germany. [14]Dept. of Surgery, Nouvel Hôpital Civil (NHC), Strasbourg, Frankrijk. [15]Dept. of Surgery, West of Scotland Pancreatic Unit, Glasgow Royal Infirmary, Glasgow, UK.. [16]Dept. of Surgery, University Hospital of Southampton NHS foundation trust, Southampton, UK.. [17]Dept. of Surgery, Fondazione Poliambulanza, Brescia, Italy.

15.48 Validation of the Eighth Edition of the American Joint Committee on Cancer (AJCC) TNM Staging System in Patients with Resected Ampullary Adenocarcinoma (p. 59)

D.H.L. Lemmers[1], G Nappo[2], S Robinson[3], M Bonds[4], M Mortimer[5], V.K. Mavroedis[6], F Burdio[7], L Bolm[8], P Pesseaux[9], U Wellner[8], B Ielpo[7], Z Soonawalla[6], B Al-Sarireh[5], T Armstrong [10], A Alseidi[4], S White[3], A Zerbi[2], M.G. Besselink[1], M Abu Hilal[11] [1]Dept. of Surgery, Cancer Center Amsterdam, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands .[2]Dept. of Surgery, Humanitas Research Hospital, Rozzano, Milano, Italië. [3]Dept. of Surgery, Newcastle Upon Tyne Hospitals NHS Foundation Trust, Newcastle, UK.. [4]Dept. of Surgery, Virginia Mason Medical Center, Seattle, USA.[5]Dept. of Surgery, Morriston Hospital, Swansea, UK.. [6]Dept. of Surgery, Oxford University Hospitals NHS Foundation Trust, Oxford, UK.. [7]Dept. of Surgery, Hepatopancreatobiliary Unit, Hospital del Mar, Barcelona, Spanje. [8]Dept. of Surgery, University Medical Center Schleswig-Holstein, Lübeck, Duitsland. [9]Dept. of Surgery, Nouvel Hôpital Civil (NHC), Strasbourg, Frankrijk. [10]Dept. of Surgery, University Hospital of Southampton NHS foundation trust, Southampton, UK.. [11]Dept. of Surgery, Fondazione Poliambulanza, Brescia, Italy.

15.54 The Use of Indocyanine Green Fluorescence Imaging in Preventing Postoperative Bile Leakage of the Hepaticojejunostomy in Robot-assisted Pancreatic Surgery (p. 60)

A.F. Gijsen[1], D.J. Lips[1], R.P.H. de Vries[1] [1]Dept. of Surgery, Medisch spectrum Enschede, Enschede, Nederland.

16.00 Using advanced modeling in improving the CEA algorithm for colorectal cancer: a possible bridge for follow-up in primary care (p. 61)

O.V. Sosef[1], L.J.E.R. Koolen[2], J.C. Seegers[1], A.T.C. Jochems[3], C.J.G. Oberije[3], M.N. Sosef[1], A Hoofwijk[1] [1]Dept. of Surgery, Zuyderland Medisch Centrum, Sittard, The Netherlands. [2]Dept. of Surgery, St. Elisabeth Krankenhaus, Geilenkirchen, Germany. [3]Dept. of Biomedical Data Sciences, Maastricht University, Maastricht, The Netherlands.

16.06 Patient-Reported Outcome Measurement-Haemorrhoidal Impact and Satisfaction Score (PROM-HISS): Development, Reliability and Construct Validity (p. 62)

S.Z. Kuiper[1], M.L. Kimman [2], R.R. van Tol[3], S.F. Waardenburg[2], S.M.J. van Kuijk[2], C.D. Dirksen[2], S.O. Breukink[4] [1]Dept. of Surgery, Maastricht University, Maastricht, The Netherlands. [2]Dept. of Clinical Epidemiology and Medical Technology Assessment (KEMTA), Maastricht University Medical Centre, Maastricht, The Netherlands.[3]Dept. of Surgery, Diakonessenhuis, Utrecht, The Netherlands.[4]Dept. of Surgery, Maastricht University Medical Centre, Maastricht, The Netherlands.

16.12 High prevalence of ulcerative appendicitis in UC patients without colonic disease activity (p. 63)
L. Heuthorst[1], A. Mookhoek [2], M.E. Wildenberg[3], G.R. D'Haens[4], W.A. Bemelman[1], C.J. Buskens[1], [1]Dept. of Surgery, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Pathology, Amsterdam UMC, Amsterdam, The Netherlands. [3]Tytgat Institute for Liver and Intestinal Research, Amsterdam UMC, Amsterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands.

16.18 Identification of pathogenic bacteria during abdominal sepsis in mice using exhaled breath analysis; a proof-of-concept study (p. 64)
K.F.H. Hintzen[1], A Smolinska[2], N.D. Bouvy[1], F.J. van Schooten[2], T Lubbers[1], [1]Dept. of Surgery, Maastricht University Medical Centre, Maastricht, The Netherlands. [2]Pharmacology and Toxicology, Maastricht University, Maastricht, The Netherlands.

16.30 Einde van dit programma onderdeel. Het volgende programma start om 17.00 uur.

Symposium NVCO **vanuit de Talkshow studio**

Voorzitters: *J. Govaert en J.H. Volders*

17.00 Bijnier chirurgie; indicaties en techniek
Prof. dr. M.R. Vriens, chirurg, UMC Utrecht

17.30 Mucosale melanomen
Dr. K.P. Wevers, chirurg, UMC Groningen

18.00 Einde van dit programma onderdeel.

Online optreden Cabaretier

18.00 Vanuit de A2 studio in Breukelen houdt cabaretier Anne Jan Toonstra MDL-Nederland de spiegel voor. Een trailer van Anne Jan vindt u op het DDD platform.

18.30 Einde eerste congresdag.

Sessie voor gepensioneerden **vanuit A2 studio**

Voorzitter: *J.F.W.M. Bartelsman*

15.30 Grasduinen in zes decennia gastroenterologisch beeldmateriaal
Prof. dr. G.N.J. Tytgat

16.30 Einde van dit programma onderdeel

President Select **vanuit de A2 studio**

Voorzitters. *C.J. van der Woude en A.E. van der Meulen*

17.00 Long-term follow-up outcomes of an endoscopic versus surgical step-up approach for infected necrotizing pancreatitis (extension) (p. 65)
A.M. Onnekink[1], L. Boxhoorn[2], S.T. Bac[3], H.C. Timmerhuis[4], M.G.H. Besselink[5], M.J. Bruno[6], S. van Brunschot[4], J. Van Grinsven[5], H.C. van Santvoort[4], R.C. Verdonk[3], P. Fockens[2], R.P. Voermans[2] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam,.[2]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, [3]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein,. [4]Dept. of Surgery, St. Antonius Hospital, Nieuwegein,[5]Dept. of Surgery, Amsterdam UMC, Amsterdam,[6]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands.

17.10 Sacral neuromodulation versus personalized conservative treatment in patients with idiopathic slow-transit constipation: the No.2-trial (p. 66)
S.C.M. Heemskerk[1], C.D. Dirksen[1], S.M.J. van Kuijk[1], M.A. Benninga[2], C.I.M. Baeten[3], A.A.M. Masclee[4], J. Melenhorst[5], S.O. Breukink[5] [1]Dept. of Clinical Epidemiology and Medical Technology Assessment (KEMTA) , Maastricht UMC+, Maastricht, The Netherlands. [2]Dept. of Pediatric Gastroenterology Hepatology and Nutrition, Emma Children's Hospital, Amsterdam UMC, Amsterdam, The Netherlands. [3]Dept. of Surgery, Groene Hart Hospital, Gouda, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Maastricht UMC+, Maastricht, The Netherlands. [5]Dept. of Surgery, Maastricht UMC+, Maastricht, The Netherlands.

17.20 Inter-laboratory variation in the assessment of lymphovascular invasion in T1 colorectal cancer in the Netherlands (p. 67)
L. van der Schee[1], A. Verbeeck[2], I.A.G. Deckers[3], C.C.H.J Kuijpers[3], G.J.A Offerhaus[1], T.C.J. Seerden[2], F.P. Vleggaar[4], P.J. van Diest[1], L.M.G. Moons[4], P. Snaebjornsson[5], M.M. Laclé[1] 'On behalf of the Dutch T1 CRC Working Group' [1]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Amphia Hospital, Breda, The Netherlands. [3]PALGA, Houten, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [5]Dept. of Pathology, The Netherlands Cancer Institute, Amsterdam, The Netherlands.

Invited speaker

17.30 Early Onset Colorectal Cancer
Prof. Matthew Rutter, professor of Gastroenterology at Newcastle University and the University Hospital of North Tees, UK.

Prof. Rutter zal zijn lezing vanuit Newcastle voor ons verzorgen. Er is gelegenheid tot het stellen van vragen via de Q&A functie.

18.00 Einde van dit programma onderdeel. Om 18.00 uur kunt u het optreden van de cabaretier volgen.

Online optreden Cabaretier

18.00 Vanuit de A2 studio in Breukelen houdt cabaretier Anne Jan Toonstra MDL-Nederland de spiegel voor. Een trailer van Anne Jan vindt u op het DDD platform.

18.30 Einde eerste congresdag.

Symposium DBLTG - NVH **vanuit de Talkshow studio**

Voorzitter: *M.C. Burgmans en J.I. Erdmann*

Interventieradiologie bij benigne levertumoren en beleid bij hepatocellulaire adenomen (HCA) rondom de zwangerschap

08.30 Opening symposium
Dr. M.C. Burgmans, interventieradioloog, Leids Universitair Medisch Centrum
Dr. J.I. Erdmann, HPB-chirurg, Amsterdam UMC

08.35 De rol van transarteriële embolisatie bij benigne levertumoren
Dr. M.C. Burgmans, interventieradioloog, Leids Universitair Medisch Centrum

09.00 HCA tijdens de zwangerschap. beleid bij HCA <5cm (PALM-studie)
Dr. A.J. Klompenhouwer, aios MDL, Erasmus MC, Rotterdam

09.10 HCA tijdens de zwangerschap. beleid bij HCA >5cm
Drs. M.P.D. Haring, PhD-candidate, Universitair Medisch Centrum Groningen

09.20 Introductie BELIVER-studie
A. Furumaya, MD/PhD-candidate, Amsterdam UMC

09.25 Afsluiting symposium
Afsluiting sessie door beide voorzitters

09.30 Einde van dit programma onderdeel.
Het volgende programma start om 10.00 uur.
Intussen kunt u de break-out sessie '*Gestoorde leverwaarden; detective werk'* volgen.

Abstractsessie sectie Gastrointestinale Endoscopie **vanuit de Virtual Room**

Voorzitters: *A.M. van Berkel en M. van Schaik*

08.30 Endoscopic upper GI findings in patients below the age of 60 who present with alarm symptoms (p. 68)

F. Theunissen[1], M.A. Lantinga[2], P.C.J. ter Borg[3], R.J.T. Ouwendijk[4], P.D. Siersema[2], M.J. Bruno[1] [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands.[2]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands.[3]Dept. of Gastroenterology and Hepatology, Ikazia ziekenhuis, Rotterdam, The Netherlands.[4]Dept. of Gastroenterology and Hepatology, ADRZ, Goes, The Netherlands.

08.36 Recommendations for endoscopic surveillance after esophageal atresia repair in adults(p. 69)

C.A. ten Kate[1], A.R.L. van Hal[2], N.S. Erler[3], M. Doukas[4], S. Nikkessen[1], J. Vlot[2], H. IJsselstijn[2], B.P.L. Wijnhoven[5], R.M.H. Wijnen[2], M.C.W. Spaander[1] [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Pediatric Surgery, Erasmus MC Sophia Children's Hospital, Rotterdam, The Netherlands. [3]Dept. of Biostatistics, Erasmus University Medical Center, Rotterdam, The Netherlands. [4]Dept. of Pathology, Erasmus University Medical Center, Rotterdam, The Netherlands. [5]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands.

08.42 Integrated frame informativeness assessment algorithm for Barrett's neoplasia (p. 70)

J.B. Jukema[1], F. Mammadl[2], T. Boers[2], M.R. Jong[1], J.A. van der Putten[2], K.N. Fockens[1], A.J. de Groof[1], P.H.N. de With[2], F. van der Sommen[2], J.J.G.H.M Bergman[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centers, Amsterdam, The Netherlands.[2]Video Coding and Architectures group, Eindhoven University of Technology, Eindhoven, The Netherlands.

08.48 Focal cryoballoon ablation with 8sec dose has similar efficacy as 10sec for treatment of Barrett's esophagus related neoplasia (p. 71)

C.N. Frederiks[1-2], A. Overwater[2-1], L. Alvarez Herrero[2], A. Alkhalaf[3], A. Repici[4], J.J. Bergman[5], R.E. Pouw[5], R. Bisschops[6], R.J. Haidry[7], T. Beyna[8], H. Neuhaus[8], B.L.A.M. Weusten[2-1] [1]Dept. of Gastroenterology and Hepatology, UMC Utrecht, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, St Antonius Ziekenhuis, Nieuwegein, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Isala Ziekenhuis, Zwolle, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Humanitas Research Hospital, Milaan, Italy. [5]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, UZ Leuven, Leuven, Belgium. [7]Dept. of Gastroenterology and Hepatology, University College London Hospitals, Londen, UK.. [8]Dept. of Gastroenterology and Hepatology, Evangelisches Krankenhaus Düsseldorf, Düsseldorf, Germany.

08.54 Transcatheter aortic valve replacement effectively reduces gastrointestinal bleeding due to angiodysplasias in patients with Heyde syndrome (p. 72)

L.C.M.J. Goltstein[1], M.J.P. Rooijakkers[2], N.C.C. Görtjes[1], E.S. Zegers[3], R. Pisters[4], M.H. van Wely[2], J.P.H. Drenth[1], E.J.M. van Geenen[1], N. van Royen[2] [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands.[2]Dept. of Cardiology, Radboud University Medical Center, Nijmegen, The Netherlands.[3]Dept. of Cardio-logy, Catharina Wilhelmina Ziekenhuis, Nijmegen, The Netherlands.[4]Dept. of Cardiology, Rijnstate, Arnhem, The Netherlands.

09.00 New classification for adverse events in gastrointestinal endoscopy: the AGREE classification (p. 73)
K.J. Nass[1], L.W. Zwager[1], M. Van der Vlugt[1], E. Dekker[1], P.M.M. Bossuyt[2], S. Ravindran[3], S. Thomas-Gibson[3], P. Fockens[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. [2]Dept. of Clinical Epidemiology, Amsterdam UMC, Amsterdam, The Netherlands. [3]Dept. of Endoscopy, St. Mark's Hospital, London, UK.

09.06 Urgent endoscopic ultrasound-guided ERC in predicted severe acute biliary pancreatitis (APEC-2): a multicenter prospective study (p. 74)
N.D.L. Hallensleben on behalf of the Dutch Pancreatitis Study Group[1], [1]Dept. of Gastro-enterology and Hepatology, Erasmus Medisch Cenrum, Rotterdam, The Netherlands.

09.30 Einde van dit programma onderdeel.
Het volgende programma start om 10.00 uur.
Intussen kunt u de break-out sessie *Gestoorde leverwaarden; detective werk* volgen.

Break-out sessie - Gestoorde leverwaarden; detective werk

09.30 Casus gepresenteerd door:
Prof. dr. J.P.H. Drenth, MDL-arts, Radboudumc, Nijmgen
Dr. W.P. Brouwer, aios MDL, Erasmus MC, Rotterdam

10.00 Einde sessie

Symposium NVMDL **vanuit de Talkshow studio**

Voorzitters: *M.J.M. Groenen en M.P. Schwartz*

Instructievideo's - How do I do it?

10.00	Introductie *Dr. L.M.G. Moons, MDL-arts, UMC Utrecht*
10.10	Tips and tricks bij het biopteren in de slokdarm *Prof. dr. B.L.A.M. Weusten, MDL-arts, UMC Utrecht*
10.20	Tips and tricks bij water assisted intubatie van het colon *Dr. L.A. van der Waaij, MDL-arts, Martini Ziekenhuis, Groningen*
10.30	Tips and tricks bij Canulatie van de CBD *Dr. J.W. Poley, MDL-arts, Erasmus MC, Rotterdam*
10.40	Tips and tricks bij EUS geleid FNA/FNB *R. Quispel, MDL-arts, Reinier de Graaf Gasthuis, Delft*
10.50	Discussie
11.00	Einde van dit programma onderdeel. Het volgende programma start om 11.30 uur. Intussen kunt u de break-out sessie DGEA en DRCE: *What's in it for me?* volgen.

Pitches NVH Young Hepatologists Awards 2020/2021 **vanuit de Virtual Room**

Voorzitters: *J.P.H. Drenth en E.M.M. Kuiper*

De NVH trapt dit najaar af met 3 klinische en 3 basale pitches met de beste publicaties van eigen bodem 2020-2021 t.b.v. de Young Hepatologist Awards. Terwijl de stemmen uitgebracht en geteld worden gaat het programma verder met de abstractsessie waarbij opnieuw een aantal mooie studies en resultaten aan u gepresenteerd zullen worden. De sessie zal worden afgesloten met de prijsuitreiking van de Young Hepatologist Awards en de NVH Distinguished Hepatology Award aan prof. dr. Andre Boonstra.

Pitches

10.00 Fibrates for itch (FITCH) in fibrosing cholangiopathies: a double blind, randomized, placebo-controlled trial
Dr. E.S. de Vries, MDL-arts, LUMC

10.04 Clinical outcomes following DAA therapy in patients with HCV-related cirrhosis depend on disease severity
L.A.D. Krassenburg, PhD candidate MDL, Erasmus MC, Rotterdam

10.08 Chyme reinfusion restores the regulatory bile salt-FGF19 axis in intestinal failure patients
K.V.K. Koelfat, PhD candidate, MUMC+

10.12 Inhibition of Extracellular Cathepsin D Reduces Hepatic Lipid Accumulation and Leads to Mild Changes in Inflammationin NASH Mice
T. Yadati, PhD candidate, MUMC+

10.16 Human bile contains cholangiocyte organoid initiating cells which expand as functional cholangiocytes in non-canonical Wnt stimulating conditions
F.J.M. Roos, PhD candidate, Erasmus MC, Rotterdam

10.20 Modeling phenotypic heterogeneity of Glycogen Storage Disease type Ia liver disease in mice by somatic CRISPR/Cas9-mediated gene editing
M.G.S. Rutten, PhD candidate, UMC Groningen

Abstractsessie

10.24 Validation of the PBC-40 and a description of patient perspective in a Dutch population of Primary Biliary Cholangitis (p. 76)
M.C.B. van Hooff[1], R.C. de Veer[1], M.H. Harms[1], G. da Silva[1], J. Willemse[3], H.J. Metselaar[1], E. Utomo[2], A.J. van der Meer[1] [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, University Medical Center, Rotterdam, The Netherlands .[2]Dept. of Gastroenterology and Interventional Endoscopy, Erasmus MC, University Medical Center, Rotterdam, The Netherlands. [3]Dutch Liver Patients Association, Hoogland, The Netherlands. [4]Dept. of Gastro-enterology and Hepatology, Independent researcher, Berkel en Rodenrijs, The Netherlands.

10.32 Spleen stiffness correlates with portal venous pressure in liver transplant recipients with or without signs of portal hypertension (p. 77)
M.A. Lantinga[1-2], R.J. de Knegt[1], L.A. van Kleef[1], C.M. den Hoed[1] [1]Dept. of Gastroenterology and Hepatology, Erasmus MC university medical center, Rotterdam, The Netherlands.[2]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands.

10.38 Polycystic liver disease is frequently complicated by abdominal wall hernias and associated with previous abdominal surgery and higher liver volume (p. 78)
T.R.M. Barten[1], R.A.M.P. Bökkerink[1], W. Venderink[2], T.J.G. Gevers[3], R.P.G. ten Broek[4], J.P.H. Drenth[1] [1]Dept. of Gastroenterology and Hepatology, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Radiology and Nuclear Medicine, Radboudumc, Nijmegen, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Maastricht UMC, Maastricht, The Netherlands. [4]Dept. of Surgery, Radboudumc, Nijmegen, The Netherlands.

10.44 Liver transplantation for acute-on-chronic liver failure (p. 79)
B. Gal[1], J.H. Vlake[2], J.E. de Haan[2], C.M. den Hoed[3], W.G. Polak[4] [1]Erasmus MC, Rotterdam, The Netherlands .[2]Intensive Care, Erasmus MC, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands. [4]Dept. of Surgery, Division of HPB and Transplant Surgery, Erasmus MC University Medical Center Rotterdam, the Netherlands.

10.50 **Prijsuitreiking Young Hepatologist Award basaal en klinisch**

11.00 Einde van dit programma onderdeel. Het volgende programma start om 11.30 uur. Intussen kunt u de break-out sessie DGEA en DRCE: *What's in it for me?* volgen.

Break-out sessie DGEA en DRCE

11.00 **DGEA en DRCE: What's in it for me?**
Dr. M.J.M. Groenen, MDL-arts, Rijnstate Ziekenhuis
K.J. Nass, arts-onderzoeker, Amsterdam UMC loc. AMC
Dr. A.A.J. van Esch, MDL-arts, Gelre Ziekenhuizen

Deelname aan deze sessie is vrij toegankelijk via het platform

11.30 Einde sessie

Symposium sectie Gastrointestinale Endoscopie **vanuit de Talkshow studio**

Voorzitters. *B.A.J. Bastiaansen en A. Inderson*

Video symposium

11.30 Should green become the routine?
C.N. Frederiks, arts-onderzoeker, UMC Utrecht

11.38 A different kind of polyp
Prof. dr. P. Fockens, MDL-arts, Amsterdam UMC, loc. AMC

11.46 Van Peg tot Pech
Dr. M.P. Schwartz, MDL-arts, Meander MC

11.54 De binnenbocht nemen
M.J. Bierma, aios MDL, Medisch Spectrum Twente

12.02 Full Closure
Dr. L.M.G. Moons, MDL-arts, UMC Utrecht

12.10 Open de poort!
Prof. dr. B.L.A.M. Weusten, MDL-arts, UMC Utrecht

12.18 Esophageal leaks: a spongy solution
L. Pattynama, PhD-candidate, Amsterdam UMC, loc. VUmc

12.30 Einde van dit programma onderdeel, mogelijkheid tot volgen satelliet symposia vanaf 13.00 uur. Vanaf 14.00 uur wordt het DDD programma hervat.

Abstractsessie II - Sectie Inflammatoire Darmziekten **vanuit de Virtual Room**

Voorzitters. *P.C.F. Stokkers en M.C. Visschedijk*

11.30 Loss-of-response and immunogenicity following immunomodulator withdrawal from anti-TNF combination therapy: a large retrospective cohort study (p. 80)

R. Mahmoud[1], J.P.D. Schultheiss[1], J.M. Louwers[1], M.T. van der Kaaij[1], B.P. van Hellemondt[1], N Mahmmod[2], P. van Boeckel[2], B. Jharap[3], H.H. Fidder[1], B. Oldenburg[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, Meander Medisch Centrum, Amersfoort, The Netherlands..

11.36 Intravenous administration of fluorescently labelled vedolizumab to gain insight in local drug distribution and pharmacodynamics in inflammatory bowel disease during endoscopy (p. 81)

R.Y. Gabriëls[1], M.D. Linssen[2], W.B. Nagengast[1], P. Volkmer[1], J.J.H. van der Laan[1], W.T.R. Hooghiemstra[2], G. Kats-Ugurlu[3], D.J. Robinson[4], G. Dijkstra[1] [1]Dept. of Gastroenterology and Hepatology, UMCG, Groningen, The Netherlands.[2]Dept. of Clinical Pharmacy and Toxicology, UMCG, Groningen, The Netherlands.[3]Dept. of Pathology, UMCG, Groningen, The Netherlands .[4]Dept. of Otorhinolaryngology and Head and Neck Surgery, Erasmus MC, Rotterdam, The Netherlands.

11.42 Real-world effectiveness of thiopurine monotherapy in Crohn's disease: is there still a place for thiopurines in the biological era? (p. 82)

A Rezazadeh Ardabili[1], S.F.G. Jeuring[1], Z Mujagic[1], M.J.L. Romberg-Camps[2], A.A. van Bodegraven[2], D.M.A.E. Jonkers[1], M.J. Pierik[3] [1]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Center+, Maastricht, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Zuyderland Medical Centre, Sittard-Geleen, The Netherlands. [3]Dept. of Gastroenterology, Maastricht University Medical Center+, Maastricht, The Netherlands.

11.48 The safety of tioguanine exposure during pregnancy: a case series of seventy-eight pregnancies (p. 83)

F. Crouwel[1], M. Simsek[1], M.A. de Boer[2], C.J.J. Mulder[1], H.J.C. Buiter[3], K.H.N. de Boer[1], [1]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centers, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.[2]Dept. of Obstetrics and Gynecology, Amsterdam University Medical Centers, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands .[3]Dept. of Radiology and Nuclear Medicine, Amsterdam University Medical Centers, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.

11.54 Peripheral blood DNA methylation profiles predict response to Ustekinumab and show stability during both induction and maintenance treatment in Crohn's disease (p. 84)

V.W. Joustra[1], I.L. Hageman[2], A.Y.F. Li Yim[3], E. Levin[4], M. Lowenberg [5], J. Satsangi[6], W.J. de Jonge[7], P. Henneman[3], G. D'Haens[5] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC location AMC, Amsterdam, The Netherlands.[2]Tytgat Institute for Liver and Intestinal Research, Tytgat Institute, Amsterdam, The Netherlands. [3]Dept. of Clinical Genetics, Amsterdam UMC location AMC, Amsterdam, The Netherlands. [4]Dept. of Gastroenterology, Horaizon BV, Delft, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Amsterdam UMC location AMC, Amsterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Translational Gastroenterology Unit, Oxford, UK.. [7]Dept. of Gastroenterology and Hepatology, Tytgat Institute, Amsterdam, The Netherlands.

12.00 Successful dietary therapy in pediatric Crohn's disease corrects compositional dysbiosis by reducing Proteobacteria (p. 85)

C.M. Verburgt[1], K.A. Dunn[2], M Ghiboub[3], J.D. Lewis[4], E. Wine[5], R Sigall Boneh[6], K. Gerasimidis[7], R. Shamir[8], S Penny[9], D Pinto[9], A Cohen[10], P Bjorndahl[10], V Svolos[7], J.P. Bielawski[10], M.A Benninga[1], W.J. de Jonge[11], J.E. van Limbergen[1], A Levine[12] [1]Dept. of Pediatric Gastroenterology Hepatology and Nutrition, Emma Children's Hospital, Amsterdam, The Netherlands.[2]Dalhousie University, Halifax, Canada. [3]Tytgat Institute for Liver and Intestinal Research, Amsterdam UMC, Amsterdam, The Netherlands.[4]Dept. of Gastroenterology, University of Pennsylvania, Pennsylvania, USA.[5]Dept. of Pediatrics, University of ALberta, Edmonton, Canada. [6]Dept. of Dietetics, Wolfson Medical Centre, Tel Aviv, Israël. [7]Dept. of Human Nutrition and Health, University of Glasgow, Glasgow, UK.. [8]Dept. of Pediatric Gastroenterology Hepatology and Nutrition, Schneider Children's Medical Centre, Tel Aviv, Israël. [9]National Research Council, Human Health Therapeutics, Halifax, Canada. [10]Dalhousie University, Dalhousie, Canada. [11]Tytgat Institute for Liver and Intestinal Research, Amsterdam, The Netherlands.[12]Dept. of Pediatrics, Wolfson Medical Centre, Tel Aviv, Israël.

12.06 Real World Experiences of Switching Patients with Inflammatory Bowel Diseases on Intravenous Vedolizumab Maintenance Treatment to Subcutaneous Vedolizumab (p. 86)

A. Volkers[1], A. Sales[1], AMIT Levran[1], K. Gecse[1], C. Ponsioen[1], M. Duijvestein[1], J. Grootjans[1], J. Hanzel[1], M. de Jong[1], S. Stolte[1], J. Zwager[1], M. Löwenberg[1], G. D'Haens[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands.

12.12 Cessation of Anti-Tumour Necrosis Factor Therapy in Patients with Perianal Fistulizing Crohn's Disease: Individual Patient Data Meta-Analysis of 323 patients from 12 studies (p. 87)

S. Ten Bokkel Huinink[1], [1]Dept. of Gastroenterology and Hepatology, Erasmus MC, Rotterdam, The Netherlands.

12.18 Real-world impact of biological therapies on work impairment and quality of life in inflammatory bowel disease patients (p. 88)

P.W.A. Thomas[1], N. den Broeder[1], R.L. West[2], M.G.V.M. Russel[3], J.M. Jansen[4], T.E.H. Römkens[5], F. Hoentjen[1] [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Centre, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Franciscus Gasthuis & Vlietland, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Medisch Spectrum Twente, Enschede, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands .[5]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, 's-Hertogenbosch, The Netherlands.

12.30 Einde van dit programma onderdeel, mogelijkheid tot volgen satelliet symposia vanaf 13.00 uur. Vanaf 14.00 uur wordt het DDD programma hervat.

Satelliet symposia

13.00 **Evoluties in IBD patientenzorg; aanpassen aan veranderingen**

Satelliet symposium verzorgd door de firma Galapagos.
Tandem talk:
Prof. dr. Severine Vermeire (UZ Leuven) en prof. dr. Marieke Pierik (MUMC)

13.30 **Lifestyle en IBD: meet the experts**

Satelliet symposium verzorgd door de firma Janssen-Cilag.
Tijdens de uitzending kunt u via de Q&A vragen stellen aan de volgende sprekers:
Dr. Annemarie de Vries, MDL-arts, Erasmus MC
Dr. Jeanine Roeters van Lennep, Internist, Erasmus MC
Prof. dr. Liesbeth van Rossum, internist, Erasmus MC
Dr. Vincent de Jonge, MDL-arts, Albert Schweitzer Dordrecht

14.00 Einde satellietsymposia, vervolg DDD programma

Meet the expert sessie **vanuit de Talkshow studio**

Voorzitters. *J.P.H. Drenth en P.D. Siersema*

Meet the expert: tips & tricks insturen artikel

14.00 Deze sessie is vrij toegankelijk voor alle deelnemers aan de DDD en wordt verzorgd door prof. dr. J.P.H. Drenth en prof. dr. P.D. Siersema, beiden MDL-arts in het Radboudumc in Nijmegen en momenteel chief editor van respectievelijk UEG Journal en Endoscopy.

De leden van het recent opgerichte Netwerk PhD's worden met name aangemoedigd om deel te nemen aan deze Meet the Expert sessie. Er is alle gelegenheid tot het stellen van vragen via de Q&A functie, deze vragen kunt u gedurende de sessie al inbrengen.

15.00 Einde van dit programma onderdeel. Het volgende programma start om 15.30 uur. Intussen kunt u Postersessie 2 volgen.

Abstractsessie NVGE / Casuïstiek **vanuit de Virtual Room**

Voorzitters: *A. Inderson en R.C. Verdonk*

Abstracts

14.00 Antroduodenal motility patterns in patients with gastroparesis: differences by etiology (p. 89)
M.J.M. Hereijgers[1], D. Keszthelyi[1], J.W. Kruimel[1], A.M.M. Masclee[1], J.M. Conchillo[1] [1]Dept. of Gastroenterology and Hepatology, Maastricht University Medical Centre, Maastricht, The Netherlands , Maastricht, Nederland.

14.06 Anticoagulants decrease the risk for catheter-related thrombosis in home parenteral nutrition patients (p. 90)
V.E.L.M. Gillis[1], T. van Houdt[1], Y. Wouters[1], G.J.A. Wanten[1] [1]Dept. of Gastroenterology, Radboudumc, Nijmegen, The Netherlands.

14.12 Optimal timing of cholecystectomy after necrotising biliary pancreatitis (p. 91)
H.C. Timmerhuis[1], N.D. Hallensleben[2], R.A. Hollemans[1], S Pocornie[3], J. van Grinsven[4], S. Brunschot[5], O.J. Bakker[1], R. van der Sluijs[6], M.P. Schwartz[7], P. van Duijvendijk[8], T. Römkens[9], M.G.H. Besselink[4], T.L. Bollen[10], S.A.W. Bouwense[11], H.C. van Santvoort[1], M.J. Bruno[2] [1]Dept. of Surgery, St. Antoniusziekenhuis, Nieuwegein, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, ErasmusMC, Rotterdam, The Netherlands .[3]Dept. of Research & Development, St. Antonius ziekenhuis, Nieuwegein, The Netherlands. [4]Dept. of Surgery, Amsterdam UMC, Amsterdam, The Netherlands. [5]Dept. of Surgery, UMC Utrecht, Utrecht, The Netherlands. [6]Dept. of Radiology, Stanford University, Stanford, USA. [7]Dept. of Gastroenterology and Hepatology, Meander MC, Amersfoort, The Netherlands.[8]Dept. of Surgery, Gelre Ziekenhuis, Apeldoorn, The Netherlands.[9]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands.[10]Dept. of Radiology, St. Antoniusziekenhuis, Nieuwegein, The Netherlands.[11]Dept. of Surgery, Maastricht UMC+, Maastricht, Nederland.

14.18 Persistent and de novo symptoms after cholecystectomy (p. 92)
F.M. Thunnissen[1], C. Baars[1], R. Arts[1], J.P.H. Drenth[2], C.J.H.M. van Laarhoven[1], P.R. de Reuver[1], C.S.S. Latenstein[1] [1]Dept. of Surgery, Radboudumc, Nijmegen, The Netherlands. [2]Dept. of Gastroenterology, Radboudumc, Nijmegen, Nederland.

Interactieve casus discussie

14.25 'De tijd vliegt' of toch 'rustig aan': wat is de optimale timing van een ERCP eigenlijk?
A. Inderson, MD-arts, Leids Universitair Medisch Centrum
Dr. R.C. Verdonk, MDL-arts, St. Antonius Ziekenhuis, Nieuwegein
Dr. M. van Wenum, aios MDL, Universitair Medisch Centrum Utrecht

15.00 Einde van dit programma onderdeel. Het volgende programma start om 15.30 uur. Intussen kunt u Postersessie 2 volgen.

Postersessie 2

Voorzitters. *P. van der Veek*

15.00 Relation of postoperative morbidity with quality of life following esophageal surgery for cancer: a European Multicenter Study (p. 93)

N. Schuring[1], S.R. Markar[2], E. Jezerskyte[1], M.A.G. Sprangers[3], A. Johar[4], M.I. van Berge Henegouwen[1], S.S. Gisbertz[1] [1]Dept. of Surgery, Amsterdam UMC, Amsterdam, [2]Dept. of Surgery, Imperial College London, London, UK. [3]Dept. of Medical Psychology, Amsterdam UMC, Amsterdam, Nederland. [4]Dept. of Surgery, Karolinska Institutet, Stockholm, Zweden.

15.06 Burden of disease experienced by patients following a watch-and-wait policy for locally advanced rectal cancer: A qualitative study (p. 94)

A.J. Pennings[1], M.L. Kimman[2], A.H.C. Gielen[3], G.L. Beets[4], J. Melenhorst[3], S.O. Breukink[3] [1]Dept. of Surgery, Maastricht University Medical Centre, Maastricht, Nederland. [2]Dept. of Clinical Epidemiology and Medical Technology Assessment (KEMTA) , MUMC+, Maastricht, Nederland. [3]Dept. of Surgery, MUMC+, Maastricht, Nederland. [4]Dept. of Surgery, AVL NKI, Amsterdam, Nederland.

15.12 Better Exercise and FOod, better REcovery (BEFORE): Feasibility Study (p. 95)

T.T.T. Tweed[2], M.A.T. Sier[1] [1]Dept. of Surgery, Zuyderland Ziekenhuis, Maastricht, Nederland. [2]Dept. of Surgery, Zuyderland Ziekenhuis, Heerlen, Nederland.

15.18 Preoperative aerobic fitness and body composition variables play a critical role in the development and impact of postoperative complications in colorectal cancer surgery (p. 96)

A.C.M. Cuijpers[1], B.C. Bongers[2], A.F.J.M. Heldens[3], M.J.L. Bours[2], N.L.U. van Meeteren[4], L.P.S. Stassen[5], T. Lubbers[5] [1]Dept. of Surgery, Maastricht Universitair Medisch Centrum, Maastricht, Nederland. [2]Dept. of Epidemiology, Maastricht University, Maastricht, Nederland. Maastricht Universitair Medisch Centrum, Maastricht, Nederland. [4]Dept. of Anesthesiology, Erasmus Medical Centre, Rotterdam, Nederland. [5]Dept. of Gastrointestinal Surgery, Maastricht Universitair Medisch Centrum, Maastricht, Nederland.

15.24 Appendiceal lesions in serrated polyposis patients: highly prevalent but low malignant potential (p. 97)

D.E.F.W.M van Toledo[1], J.E.G. IJspeert[1], A.G.C. Bleijenberg[1], B.A.J. Bastiaansen[1], C.J.M. van Noesel[2], E. Dekker[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, location AMC, Amsterdam, Nederland. [2]Dept. of Pathology, Amsterdam UMC, location AMC, Amsterdam, Nederland.

Meet the expert sessie **vanuit de Virtual Room**

Meet the expert: Voeding

15.30 Pre-operatief
Dr. P.W.J. Maljaars, MDL-arts, Leids Universitair Medisch Centrum

16.00 IBS
Dr. D.M.A.E. Jonkers, onderzoeker, Maastricht Universitair Medisch Centrum

Deze sessie is vrij toegankelijk voor alle deelnemers aan de DDD, er is gelegenheid tot het stellen van vragen via de Q&A functie, deze kunt u gedurende de sessie al inbrengen.

16.30 Einde van dit programma onderdeel. Het volgende programma start om 17.00 uur.

State of the art lecture **vanuit de Talkshow studio**

Voorzitters: *C.J. van der Woude en P.P.J. van der Veek*

17.00 The perspectives of AI in gastrointestinal surgery
Prof. dr. Beat Müller, Head of Division of Minimally Invasive and Robotic Surgery, University Hospital Heidelberg, Germany

Prof. Müller zal zijn lezing vanuit Heidelberg voor ons verzorgen. Er is gelegenheid tot het stellen van vragen via de Q&A functie.

17.45 Uitreiking Gastrostart subsidies
Uitreiking NVGE Researchprijs 2021

18.00 Afsluiting door voorzitter

DONDERDAG 9 SEPTEMBER 2021

Programma V&VN MDL - Transitie IBD / Leverziekten **vanuit de Talkshow studio**

Voorzitters. *A.N. Reijm en L.M.H. Roos*

15.30 Welkom en introductie

15.35 Levensloopzorg: transitiezorg in een breder kader
Prof. dr. E.M. van de Putte, kinderarts sociale pediatrie en hoogleraar Levensloopgeneeskunde, UMC Utrecht

16.05 Transitie tips: het zit in de kleine dingen
M.A.C. van Gaalen, verpleegkundig specialist, Erasmus MC - Sophia Kindeziekenhuis

16.30 Einde van dit programma onderdeel. Het volgende programma start om 17.00 uur. Intussen kunt u de break-out sessie V&VN MDL volgen.

Break-out sessie V&VN MDL

16.30 Meet & Greet bestuur V&VN MDL
Vind je het leuk om kennis te maken met het bestuur V&VN MDL?
We informeren je graag over waar we mee bezig zijn! Heb je suggesties, tips of vragen dan horen wij dat ook graag!

17.00 Einde sessie

Programma V&VN MDL - Endoscopie **vanuit de Virtual Room**

Voorzitters. *A.P.M. Boersen*

17.00 Karakterisering van colorectale poliepen tijdens coloscopie: man versus machine
B.B.S.L. Houwen, arts-onderzoeker, Amsterdam UMC loc. AMC

17.20 EUS: meer dan 50 tinten grijs
Dr. L.M. Kager, MDL-arts, Noordwest Ziekenhuisgroep, Alkmaar

17.40 Sessiel Serrated Poliepen
Dr. A.C.G. Bleijenberg, aios MDL, Haaglanden Medisch Centrum, Den Haag

18.00 Einde van dit programma onderdeel

Symposium V&VN MDL *(ON DEMAND - OPNAME VAN WOENSDAG)*

Voorzitters. *T.A. Korpershoek, M. van Loon-van der Ende en M. Francois-Verwey*

Verbeteren van zorg door praktijk gericht onderzoek
I. Roeters, verpleegkundig onderzoeker / IC verpleegkundige, Catharina Ziekenhuis, Eindhoven

Kwaliteitsverbetering in de MDL
T.A. Korpershoek, verpleegkundig specialist, Albert Schweitzer Ziekenhuis, Dordrecht

Vraaggesprek omtrent kwaliteitszorg/ wetenschappelijk onderzoek
T.A. Korpershoek, verpleegkundig specialist, Albert Schweitzer Ziekenhuis, Dordrecht
M. Francois-Verwey, verpleegkundig specialist, Ziekenhuis Gelderse Vallei, Ede
M. van Loon-van der Ende, verpleegkundig specialist MDL, Catharina Ziekenhuis, Eindhoven

Abstract indienen voor de V&VN MDL tijdens DDD; hoe, wat en wanneer
M. Francois-Verwey, verpleegkundig specialist, Ziekenhuis Gelderse Vallei, Ede

An objective risk prediction assay using automated multiplexed immunofluorescent staining accurately risk stratifies Barrett's Esophagus patients with low-grade dysplasia

A.M. Khoshiwal1, N.F. Frei1, R.E. Pouw1, F. Ten Kate2, C.A. Seldenrijk3, J. Offerhaus2, J.R. Goldblum4, J.M. Davison5, E. Montgomery6, E. Bossart7, R. Critchley-Thorne7, J.J. Bergman8 1Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands. 2Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. 3Dept. of Pathology, Sint Antonius ziekenhuis, Nieuwegein, The Netherlands .4Dept. of Pathology, Cleveland clinic, Cleveland, USA.5Dept. of Pathology, University of Pittsburgh, Pittsburgh, USA.6Dept. of Pathology, University of Miami, Miami, USA.7Cernostics, Inc, Pittsburgh, USA.8Dept. of Gastroenterology, Amsterdam UMC, Amsterdam, The Netherlands.

Background: Low-grade dysplasia (LGD) is the best predictor of malignant progression in Barrett's Esophagus (BE). LGD is over-diagnosed in 50-75% of community-based cases. Guidelines therefore recommend expert pathologist's revision. However, it is unclear what defines an expert and such review is not widely available. A recent study demonstrated that an objective risk prediction assay (TC) accurately stratifies BE patients with LGD.
Aim: To evaluate the predictive value of TC in BE patients with community-based diagnosis LGD, and to benchmark its performance against an international panel of 12 (expert) pathologists.
Methods: A cohort of BE patients with community-based LGD was derived from the screening cohort of a randomized controlled trial comparing Surveillance versus RFA for confirmed LGD. Ten 5-micron slides from all baseline LGD-endoscopy biopsies were cut and assessed by TC. TC classifies patients as low- (LR), intermediate- (IR) or high-risk (HR) for progression to high-grade dysplasia (HGD) and esophageal adenocarcinoma (EAC). 3 of these slides (2 hematoxylin and eosin and 1 P53 immunohistochemistry) were digitized for pathology revision by 12 pathologists, including 6 expert pathologists, from the Netherlands and the US. The worst biopsy score per endoscopy was used as an outcome for TC and pathologists.
Results: 155 BE patients (79% male), with a median age of 62±10 years, median BE length of C3M4, median follow-up of 7 years (IQR 4.4-9.7) and a mean number of 3±2 endoscopies were studied. 25 patients developed HGD/EAC within 5 years and 130 patients did not. The pathologist panel downstaged a mean of 60.2% (range 12.9-82.6%) LGD cases to NDBE and confirmed 21.2% (10.5-35.5%). Progression rates were respectively 9.6% (7.1-20%) and 45.8% (22.2-62.5%). TC downstaged (LR) 71% of the LGD cases and confirmed (IR & HR) 29%. Progression rates were respectively 7.3% and 37.8%. Pathologists classified 18.6% (3.2-74.2%) of the cases as indefinite for dysplasia (IND) with a progression rate of 11.3% (0-22%). Sensitivity for the pathologists ranged from 52-84% with a mean of 67.1%, specificity ranged from 12.3-89.2% with a mean of 65.4%. TC sensitivity and specificity were respectively 68% and 78.5%.
Conclusion: TC and an international panel of 12 (expert) pathologists accurately stratified BE patients with a community diagnosis of LGD. TC showed a higher overall accuracy when compared to the pathologist panel. Histopathological review showed a high inter-observer variability, and classified a significant subgroup as IND. TC may therefore be a more objective and easier accessible risk-stratifying tool for LGD in BE than the currently required pathology review by an expert pathologist.

Linked color imaging improves identification of early gastric cancer for both expert and non-expert endoscopists

K.N. Fockens[1], A.J. de Groof[1], J.A. van der Putten[2], T. Khurelbaatar[3], H. Fukuda[3], Y. Miura[3], T. Takezawa[3], H. Osawa[3], H. Yamamoto[3], J.J.G.H.M Bergman[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam UMC, Amsterdam, The Netherlands.[2]School of Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands .[3]Dept. of Gastroenterology and Hepatology, Jichi Medical Center, Tochigi, Japan.

Background: Early gastric cancer (EGC) lesions are often subtle and endoscopically poorly visible. Therefore, endoscopists have difficulties detecting them. Linked color imaging (LCI) is an optical chromoscopy technique developed to enhance differences in the red-to-white color spectrum, and may thereby improve discrimination between gastric neoplasia and inflammation during endoscopy. The aim of this study is to evaluate the additive effect of LCI next to white-light endoscopy (WLE) for identification of EGC lesions, when assessed by both expert and non-expert endoscopists.
Methods: Forty cases of EGC were selected, visualized in corresponding WLE and LCI images. A web-based module allowed endoscopists to evaluate the cases in 3 assessment phases. Phase 1: WLE images only; Phase 2: LCI images only; Phase 3: WLE and LCI images side-to-side. First, 3 expert endoscopists completed the module by delineating all cases. The rationale for this was twofold: to evaluate the additive value of LCI for experts and to establish ground truth of neoplasia for non-experts. Expert delineations were quantified by calculating the AND/OR ratio per image. The AND area was defined as the overlapping area delineated by all 3 experts and the OR area as the area delineated by at least 1 expert. A high AND/OR ratio corresponds to a high level of agreement. Subsequently, 62 non-experts completed the 3 assessment phases, by indicating a preferred biopsy location. Biopsy position was considered correct when placed within the expert AND area. Outcomes of the study: 1) difference in expert AND/OR ratio; 2) accuracy of targeted biopsy placement by non-expert endoscopists.
Results: Overall quantitative agreement between experts increased significantly when LCI was used next to WLE, compared to WLE alone (0.58 vs. 0.46 respectively, p=0.007). Sub analysis showed an even more apparent increase for neoplastic lesions that were hard to delineate with WLE alone, i.e. the fifty percent most challenging cases (WLE 0.21 vs. WLE+LCI 0.47, p<0.001). When using LCI, non-experts placed the biopsy mark more often within the AND area (82.3% vs. 87.2%, p<0.001). Sub analysis again showed a more apparent increase for the more challenging cases (70.4% vs. 83.4%, p<0.001).
Conclusion: This study shows that the addition of LCI to WLE improves the visualization of EGC. We found that experts reach higher consensus on the discrimination between neoplasia and inflammation when using LCI. Non-experts improve their targeted biopsy placement with the use of LCI. These findings are even more profound for lesions that are difficult to visualize with WLE. LCI therefore appears to be a useful tool in the identification of EGC.

Risk factors of metachronous peritoneal metastasis after preoperative chemotherapy and potentially curative gastric cancer resection in the CRITICS trial

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Background: Peritoneal metastasis (PM) is accountable for 30-50% of metastatic spread in gastric cancer (GC). Little is known about factors contributing to the risk of metachronous PM as a single site of metastasis after preoperative chemotherapy and potentially curative resection. Accurate prediction of risk factors identifying high risk populations may pave the way for new treatment strategies, such as prophylactic intraperitoneal chemotherapy. In this analysis, risk factors for the development of isolated metachronous PM after preoperative chemotherapy and surgical resection were investigated.
Methods: In the CRITICS trial (NCT00407186), 788 patients with resectable GC were randomized for preoperative chemotherapy and gastrectomy followed by either chemotherapy or chemoradiotherapy. Patients who underwent a potentially curative resection without peritoneal metastasis at the time of surgery were included in this analysis. Disease recurrence and other events were categorized as isolated PM or non-isolated peritoneal events, i.e. (concurrent) distant metastasis, locoregional recurrence or death. Univariable and multivariable analyses on potential risk factors for metachronous isolated PM were performed using a competing risk model and were summarized by cumulative incidences. The contribution of the identified risk factors for isolated PM to the risk of non-isolated peritoneal events was analyzed likewise.
Results: In total, 617 patients met the inclusion criteria. The peritoneum was the only site of recurrence in 64 of 617 (10%) patients. Diffuse/mixed histological subtype, ypT4 tumor stage and ypN3 stage or a lymph node ratio (tumor positive lymph nodes divided by all lymph nodes) >20% (ypN^{high}) were independent risk factors for isolated PM in both univariate and multivariate analyses with hazard ratios (HR) of 2.71 (95% CI 1.36 - 5.39), 2.54 (95% CI 1.52 - 4.25) and 2.47 (95% CI 1.46 - 4.16), respectively. In addition, ypT4 and ypN^{high} were also independent risk factors for non-isolated peritoneal events with HR of 1.46 (95% CI 1.07-1.99) and 2.34 (95% CI 1.80-3.05), respectively. Patients with tumors harboring all three independent risk factors had the highest 2 year cumulative incidences for isolated PM and non-isolated peritoneal events, i.e. 40% and 49% respectively.
Conclusion: Diffuse or mixed histological subtype, ypT4 and ypN^{high} were identified as independent risk factors for isolated metachronous PM in a large cohort of GC patients treated with preoperative chemotherapy followed by surgical resection. The combination of these factors may identify a subgroup that can benefit from preventive treatment strategies.

The prognostic value of tumor markers in patients with resectable gastric cancer receiving perioperative therapy in the CRITICS trial

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Background: Carcinoembryonic antigen (CEA) and carbohydrate antigen (CA) 19-9 are well-known tumor markers. Most studies on CEA and CA 19-9 in patients with gastric cancer were performed in Asia, and/or in the metastatic setting. The aim of this study was to investigate the prognostic value of blood derived laboratory parameters in a cohort of European patients with resectable non-metastatic gastric cancer.
Methods: The prognostic value of pretreatment CEA, CA 19-9, alkaline phosphatase, creatinine, neutrophils, hemoglobin and lactate dehydrogenase was investigated in a subset of patients who were treated with perioperative treatment in the CRITICS trial. In the CRITICS trial, 788 patients with resectable gastric cancer underwent perioperative therapy (preoperative chemotherapy plus either postoperative chemotherapy or postoperative chemoradiotherapy). Factors significant on univariable cox regression analysis were explored in multivariable analysis. For factors significant on multivariable analysis the likelihood to receive potentially curative surgery was investigated. The association between tumor markers and the presence of circulating tumor DNA (ctDNA) was explored in 50 patients with available ctDNA data.
Results: Pretreatment CEA and CA 19-9 were independent prognostic factors for survival. Patients with elevated tumor markers before start of preoperative chemotherapy had worse overall-survival (OS) with a hazard ratio (HR) of 1.57 (95% CI 1.24-2.00, p<0.001) compared to patients without elevated tumor markers. Patients in whom both tumor markers were elevated had even worse OS with a HR of 2.65 (95% CI 1.86-3.76, p<0.001). The likelihood to receive curative surgery were 86%, 77% and 60% for patients without any elevated tumor marker versus either elevated CEA or CA 19-9 versus both elevated, respectively (p<0.001). The presence of pretreatment ctDNA alone had no prognostic value while preoperative presence of ctDNA had. There was no association between pretreatment ctDNA and CEA or CA 19-9. Although both preoperative presence of ctDNA and tumor markers were prognostic for survival, no association could be confirmed between these two parameters.
Conclusion: CEA and CA 19-9 were independent prognostic factors for survival in a large cohort of European patients with resectable gastric cancer. These factors could potentially guide treatment choices and should be included in future trials to determine their definitive position.

High recurrence rates of advanced neoplasia after endoscopic resection or surgical treatment. a retrospective cohort study

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Background: Inflammatory bowel disease (IBD) patients are at increased risk of advanced neoplasia (AN) including high grade dysplasia (HGD) and colorectal cancer (CRC). A colectomy is recommended in these patients given the high risk of an (occult) second AN. Advances in endoscopic treatment led to a shift in surgical treatment of AN (mainly HGD) towards a more endoscopic strategy. Data regarding endoscopic treatment or partial resection of AN are scarce. Therefore, we aimed to assess the colonic AN recurrence rate following endoscopic treatment, partial resection or total colectomy in IBD patients.
Methods: In this retrospective multi-center cohort study we used the Dutch nationwide histopathology registry (PALGA) to identify patients diagnosed with ulcerative colitis (UC), Crohn's disease (CD) or IBD-unclassified and AN between 1991 and 2020 in seven hospitals in the Netherlands. Exclusion criteria were familial CRC or AN prior to IBD diagnosis. Data regarding neoplasia, including index AN (defined as the first HGD or CRC lesion), treatment and subsequent endoscopic and surgical follow-up were collected. Recurrence was defined as any colorectal neoplasia (independent of location) detected after treatment of the index AN.
Results: We included 194 patients with index AN (n=82 HGD, n=112 CRC), of which 112 patients (57.7%) were male, 122 patients (62.9%) had UC, 23 (11.9%) had PSC and 149 (71.6%) had extensive disease (UC: Montreal E3; CD: >50% colonic involvement). Fifty-one patients (26.3%) had a prior diagnosis of indefinite (IND) or low-grade dysplasia (LGD). Mean IBD duration at time of index AN was 20 years. Total or subtotal colectomy was performed in 78 patients (40.2%), whereas 59 patients (30.4%) underwent a partial resection. Endoscopic treatment of AN was performed in 38 patients (19.6%, n=34 HGD, n=4 CRC), including 6 (15.8%) endoscopic mucosal resections and 4 (10.5%) endoscopic submucosal dissections. Sixteen lesions were not removed, due to comorbidity or metastatic disease. 48 patients (24.7%, HGD: n=27; CRC: n=21) developed recurrence, including 6 IND, 20 LGD, 12 HGD and 10 CRC, after a median of 22 months (IQR 39) after treatment of the index AN. Of these patients, 21 (43.8%; 19 HGD, 2 CRC) were initially (for index AN) treated with endoscopic resection, 15 (31.3%; 2 HGD, 13 CRC) with partial resection and 12 (25.0%; 6 HGD, 6 CRC) with subtotal colectomy.
Conclusion: After treatment of AN, 1 out of 4 IBD patients developed recurrence. The majority of recurrences occurred after endoscopic resection. The high recurrence rate underlines the importance of stringent endoscopic surveillance following treatment of AN, especially after endoscopic resection.

Oncological and functional outcome of elderly rectal cancer patients treated with contact x-ray brachytherapy

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Background: Total mesorectal excision for rectal cancer is a major operation, associated with morbidity and mortality. For frail elderly patients alternatives are necessary. We aimed to evaluate the oncological and functional outcome, and quality of life of elderly or inoperable rectal cancer patients treated with a contact x-ray brachytherapy boost to avoid total mesorectal excision.
Methods: We prospectively evaluated elderly or inoperable rectal cancer patients treated with contact x-ray brachytherapy, consisting of three fractions with a total dose of 90Gy. During follow-up, the tumour response and toxicity on endoscopy was scored. Kaplan-Meier curves were used to evaluate the oncological outcome. The EORTC-QLQ-C30, EORTC-QLQ-CR29, LARS score, and Vaizey score were used to assess quality of life and functional outcome. In addition, in-depth semi-structured interviews regarding patients' experiences were conducted.
Results: Nineteen patients were included; in nine of them a complete response was achieved, and in another four local control of the tumour was established. The 12 months organ-preserving rate, progression-free survival, and overall survival were 88%, 77%, and 100%. Although the maximum toxicity at the tumour site was substantial, toxicity observed at the contralateral rectal wall was limited. A decrease in quality of life and an increase in bowel dysfunction was observed at 3 months, which was generally back to baseline at 6 months. In-depth interviews revealed that patients' experience was positive and that patients qualified their quality of life as 'good', despite the side-effects after treatment with contact x-ray brachytherapy.
Conclusion: In elderly or inoperable rectal cancer patients, a contact x-ray brachytherapy boost can be offered to avoid total mesorectal excision. Contact x-ray brachytherapy is well-tolerated and can provide good tumour control. Although associated with a transient decrease in functional outcome and quality of life, patients' experiences with contact x-ray brachytherapy are positive.

Polypectomy of residual adenomas after neoadjuvant therapy in rectal cancer

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Background: Rectal cancer patients with a complete clinical response following neoadjuvant (chemo)radiotherapy (CRT) may qualify for an organ sparing treatment (wait and see). Benign residual adenomas, which may persist in or around the scar after neoadjuvant therapy, can give a false impression of residual tumor. These patients are routinely referred for total mesorectal excision (TME) with ypT0N0 in final pathology. The aim of this study is to evaluate endoscopic polypectomy of residual adenoma after neoadjuvant CRT in rectal cancer, with the aim to prevent unnecessary radical surgery.
Methods: Retrospective analysis of all patients enrolled in a local wait and see database after CRT who underwent polypectomy of residual adenomas between 01-2013 and 01-2021 was conducted. All patients had neoadjuvant CRT and response evaluation with MRI, digital rectal examination, and endoscopy.
Results: Twenty patients were included. Polypectomy was achieved by cold snare resection (30%), argon plasma coagulation (25%), endoscopic mucosal resection (10%), and transanal endoscopic microsurgery (5%), or a combination of these techniques (30%). Sixteen (80%) patients underwent multiple endoscopic polypectomy procedures. The mean follow-up time was 45.30 (±19.05) months from diagnosis. Five patients (25%) developed local recurrence of rectal cancer requiring TME, and 4 of these 5 patients developed metastatic disease of which one died. Fifteen patients are still being followed without signs of recurrent disease.
Conclusion: Endoscopic treatment of residual adenomas following neoadjuvant therapy in rectal cancer is a promising adjuvant to possibly increasing feasibility of organ sparing treatment of rectal cancer. Strict surveillance by means of imaging and endoscopy is the key to early detection of local recurrence. Our oncological outcomes were in line with those seen in large prospective registries of wait and see. Larger series are needed to confirm that residual adenoma is no harbinger of adverse oncological outcome, and to determine whether polypectomy improves clinical outcomes.

Baseline Hypertrophy of the Submucosa at intestinal ultrasound predicts Failure of Treatment in patients with ulcerative colitis

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Background: Submucosal fibrosis in ulcerative colitis (UC) has been associated with chronicity and severity in colectomy specimens. As intestinal ultrasound (IUS) visualizes all individual wall layers, we aimed to evaluate baseline IUS features to determine endoscopic response and investigate changes in wall layers during anti-inflammatory treatment in patients with UC.
Methods: Patients with moderate-severe UC (endoscopic Mayo score (EMS)≥2) extending beyond the rectum starting a biological or tofacitinib were included. Simple Clinical Colitis Activity Index (SCCAI), fecal calprotectin (FCP), IUS and endoscopy were performed at baseline and at follow-up between week 8 and 26. BWT, individual wall layer thickness (WT) (mucosa (MC), submucosa (SM) and muscularis propria (MP)) and ratios among layers, Colour Doppler Signal (CDS), loss of haustrations (LoH), loss of stratification (LoS) and hyperechogenicity of the submucosa (HoS) were scored for the sigmoid colon (SC). EMS was assessed for the SC: endoscopic remission (ER) was defined as EMS=0 and endoscopic improvement (EI) as EMS≤1. For statistical analysis a paired t-test and X^2-test were used.
Results: 49 patients were included of whom 61% failed ≥1 biological. 59% started tofacitinib and 41% started a biological. At follow-up, 30% and 49% reached ER and EI in the SC, respectively. BWT decreased significantly when ER (2.32±1.63 mm vs 1.00±1.98 mm, p=0.034) or EI (2.53±1.66 mm vs 0.30±1.58 mm, p<0.0001) was reached. Individual wall layers decreased when there was EI (ΔMC:-0.60±0.84 mm, ΔSM: -1.28±1.23 mm, ΔMP: -0.64±0.59 mm) and ER (ΔMC: -0.37±0.40, ΔSM: -1.21±1.36 mm, ΔMP: -0.58±0.63 mm). The submucosal thickness showed significantly more pronounced decrease when there was EI (ΔMC vs ΔSM,p=0.018, ΔSM vs ΔMP,p=0.027, ΔMC vs ΔMP,p=0.86) and ER (ΔMC vs ΔSM,p=0.05, ΔSM vs ΔMP,p=0.11, ΔMC vs ΔMP,p=0.36). Baseline presence of HoS (29% of patients) predicted failure of treatment (ER: OR:0.10, 95%CI:0.01-0.87,p=0.014, EI:OR:0.16, 95%CI:0.04-0.65,p=0.008,). Furthermore, when HoS was present, SCCAI (7.33±3.62 vs 9.75±3.23, p=0.023) and FCP (1249±903 µg/g vs 2494±2277 µg/g, p=0.008) were significantly lower at baseline. Also, patients with HoS more frequently failed one (OR:4.44, 95%CI:1.08-18.32,p=0.03) or multiple biologicals (OR:5.63, 95%CI: 1.54-20.52,p=0.009). However, disease duration (p=0.950) or age at onset (p=0.853) did not differ between groups.
Conclusion: This is the first study showing that HoS on IUS is a predictor of endoscopic non-response to biologicals and tofacitinib in patients with UC. Additionally, changes in submucosal layer thickness is the most important component of the total bowel wall when evaluating mucosal healing on IUS.

Serological biomarkers of type I, III and IV collagen turnover for detection and future progression of stricturing and penetrating Crohn's disease

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Background: Crohn's disease (CD) is characterized by increased extracellular matrix (ECM) remodeling, which is a key pathophysiological mechanism underlying intestinal stricture and fistula formation. This is reflected by circulating products of collagen formation and degradation in blood. In this study, we aimed to investigate associations between serological biomarkers of collagen turnover and disease behavior according to the Montreal classification in patients with CD. Methods: Serological biomarkers of collagen formation (PRO-C3, PRO-C4) and matrix metalloproteinase (MMP)-mediated collagen degradation (reC1M, C3M, C4M, C4G, C6Ma3) were measured using neo-epitope solid-phase competitive enzyme-linked immunosorbent assay (ELISA) technology in 101 patients with CD (Montreal B1: *n*=37; B2: *n*=27; B3: *n*=37). Patients were followed-up (for at least 5 years) until their last outpatient visit to monitor progression of stricturing or penetrating disease and surgical interventions. Logistic regression modeling, receiver operating characteristics (ROC) statistics and Cox proportional hazards regression analyses were used to assess discriminative capacity of the biomarkers for the detection and prediction of future progression of stricturing and penetrating CD.
Results: Specific fragments of MMP-mediated degradation of type I, III and IV collagen (reC1M, C3M, C4M) were significantly reduced in patients with stricturing CD (Montreal B2) and accurately differentiated them from patients with either non-stricturing, non-penetrating (B1) or penetrating (B3) disease (all *P*<0.001, multivariable analysis). Similarly, the type IV collagen formation/degradation (PRO-C4/C4M) ratio was significantly elevated in patients with stricturing disease and demonstrated high discriminative capacity, also after adjustment for confounding factors (B1 vs. B2: AUC=0.90; B1 vs. B3: AUC=0.87, both *P*<0.001). Systemic inflammation as reflected by C-reactive protein (CRP) levels was most strongly associated with type I, III, IV and VI collagen degradation fragments (all *P*<0.001). Prospectively, higher baseline levels of type I and IV collagen fragments, particularly C4G, were associated with an increased risk of progression of penetrating disease (C4G: hazard ratio [HR]1.71[1.05-2.81], *P*<0.05).
Conclusion: Elevated degradation of type I, III and IV collagen and excessive (relative) formation of type IV collagen strongly associate with stricturing CD, and type I and IV collagen fragments show predictive potential for the risk of progression of penetrating disease. These biomarkers may become useful tools for detection and prediction of stricturing and penetrating CD.

Colitis-associated advanced neoplasia is associated with insufficient adherence to surveillance guidelines

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Background: Inflammatory bowel disease (IBD) patients bear a 1.5-2 times increased risk of colorectal cancer (CRC) compared to the general population. Although CRC surveillance with high-definition white light or chromoendoscopy is currently embedded in clinical practice, a subset of patients still develops advanced neoplasia (AN; high-grade dysplasia (HGD) and/or CRC). This study aimed to determine the impact of CRC surveillance guideline adherence (in terms of surveillance interval and procedure adequacy) on the occurrence of AN in IBD.
Methods: A search of the Dutch nationwide histopathology registry (PALGA) was used to identify IBD patients in five academic and two non-academic hospitals. Patients with AN and concomitant ulcerative colitis (UC), Crohn's disease (CD), or IBD-unclassified (IBD-U) from 1991 until 2020 who underwent surveillance were included. Exclusion criteria comprised familial CRC or patients with AN prior to IBD diagnosis. Adequacy of the last surveillance colonoscopy before AN was determined, including cecal intubation, bowel preparation and inflammation status (insufficiency defined as Boston Bowel Preparation Scale <6 and/or according to colonoscopy report). The selected interval was assessed according to the most recent Dutch surveillance guideline including a six month margin to the recommended intervals.
Results: We included 189 patients with index AN (HGD: n=80, 42.3%; CRC n=109, 57.7%). Patients were more often male (n=109, 57.7%), and diagnosed with UC (n=120, 63.5%). PSC was present in 23 patients (12.2%) and 50 patients (26.5%) had prior indefinite or low grade dysplasia. Mean duration from IBD diagnosis to AN development was 20.0 years (standard deviation ±11.4). Eighty patients were diagnosed with AN (42.3%; 43 HGD, 37 CRC) during a surveillance colonoscopy. By contrast, 81 (42.9%, 25 HGD, 56 CRC) were detected during a non-surveillance colonoscopy and 23 (12.2%, 9 HGD, 14 CRC) following colon resection. 103 of 189 patients with AN (54.5%, 39 HGD, 64 CRC) received inadequate surveillance prior to AN diagnosis. 79 patients (41.8%) had a delayed surveillance interval, 32 patients (16.9%) had active inflammation, three had insufficient bowel preparation and 1 patient had an incomplete colonoscopy. The proportion of patients with inadequate surveillance was stable over time. Of all CRC cases, 27 (24.8%) were 'true' interval carcinomas with a correct surveillance interval and 13 (11.9%) were diagnosed before 8 years of IBD disease duration (n=0 PSC).
Conclusion: The majority of IBD patients who developed AN had inadequate colonic surveillance for CRC. This observation underlines the importance of adequate surveillance and guideline adherence.

Factors independently associated with fatigue in IBD: results from the baseline dataset of the PREdiCCt study

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Background: Fatigue is one of the most common symptoms in IBD resulting in decreased quality of life, impaired work productivity, and higher societal costs. However, little is known about its etiology and pathophysiology. We aimed to estimate the prevalence of fatigue and to identify predictive factors for fatigue.
Methods: The PREdiCCt study (https://www.predicct.co.uk) is the largest prospective study of the causes of IBD flare. 2629 patients in clinical remission were recruited from 49 sites in the United Kingdom. 1946 (74%) patients completed the baseline questionnaires. We assessed the prevalence of fatigue at baseline using a single item from the IBD Control questionnaire. To identify predictors for fatigue, we performed univariable and multivariable analyses including demographic, biochemical, environmental and psychosocial factors such as anxiety and depression (HADS, Hospital Anxiety and Depression Scale), sleep quality (PSQI, Pitsburg Sleep Quality Index) and physical exercise (GPAQ, Global Physical Activity Questionnaire).
Results: 759/1919 IBD patients in clinical remission (39.6%) reported fatigue in the past 2 weeks, while 1034 patients (53.9%) did not report fatigue. Patients who reported fatigue were more frequently female (540/759 [66.4%] versus 508/1034 [49.1%], p<0.001), had more frequently CD (431/759 [57.2%] versus 492/1034 [48.0%], p<0.001) and were more frequently smokers (57/759 [8.9%] versus 45/1034 [4.9%], p=0.002). Univariable comparisons showed higher inflammatory markers in the fatigued group (CRP>5 399/759 [37.2%] versus 446/1034 [23.5%], p<0.001; median white cell count 6.3 x10^9/L [5.3-7.8] versus 6.0 x10^9/L [5.0-7.2] , p<0.001), with fewer patients in clinical remission (HBI<4, pMayo<2; 287/759 [71.8%] versus 482/1034 [82.7%], p<0.001). Furthermore, lower hemoglobin levels were found in the fatigued patients (median 136 g/l [127-145] versus 140 g/l [131-148], p<0.001). Multivariable analyses identified female sex (OR 2.4, 95% CI 1.5-3.8), CRP>5 (OR 2.1, 95% CI 1.3-3.5), bad sleep quality (OR 2.5, 95% CI 1.4-4.6), anxiety (OR 1.8, 95% CI 1.1-3.0) and depression (OR 6.2, 95% CI 2.9-13.3) as independent factors associated with fatigue.
Conclusion: We show the significant burden of fatigue in IBD patients and describe putative causes which demonstrate both the impact of residual gut inflammation and the relationship between fatigue and psychological well-being. The impact of environmental and dietary factors on fatigue is being further investigated with ongoing longitudinal data collection in the PREdiCCt study.

Neither Inflammatory bowel disease nor immunosuppressants are associated with an increased risk for severe COVID-19. An observational Dutch cohort-study

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Background: Conflicting data have been published about inflammatory bowel disease (IBD) and immunosuppressants being risk factors for severe COVID-19. These different opinions leave patients and healthcare providers confused. Clinical reports with longer follow up are lacking.
Methods: A retrospective search was performed for severe COVID-19 (defined as hospital admission and/or mortality) in the first year after SARS-CoV-2 outbreak in an IBD cohort from one of the most affected Dutch regions. Cohort characteristics were explored by value-based healthcare data, including age differentiation and immunotherapy. Severe COVID-19 cases were detected by ICD-10 codes and examined for IBD determinants (including medication) and COVID-19 characteristics (intensive care admission, respiratory support, treatment and mortality). The national mortality register was consulted, ensuring detection of non-admitted deceased patients. Results were compared with regional and national general population registries. Chi-squared test with continuity corrections was used and a *p*-value <0.05 was considered statistically significant. The 95% confidence intervals (CI) for a single proportion with continuity corrections were counted for all incidences.
Results: The IBD cohort consisted of 1453 patients, including children, 51% had Crohn's disease, 54% were women and 15.9% was ≥70 years. Cross-sectional examination of medication at start of the outbreak showed 251 patients (17.6%) using a biological, 354 (24.8%) had an immunomodulator (thiopurine/methotrexate) and 130 (9.1%) corticosteroids. One year later these counts changed only significantly for biologics to 21.5% (CI 15.7-19.7 and 19.4-23.7, *p*=0.010). Immunotherapy was used by 580 (39.9%) of patients and 26% of patients ≥70 years old. Eight cases (0.55%) had severe COVID-19: seven were hospitalized (0.48%, CI 0.21-1.04), two died (0.14%), including one case without hospitalisation. Six patients (75%) had comorbidity, two (25%) used mesalamine, one (12.5%) budesonide, one tioguanine and four (50%) no medication. Both deceased patients were ≥80 years old, had comorbidity, and used no immunotherapy. Neither IBD nor medication played a role in their disease course. Severe COVID-19 was only found in one of 580 patients (0.17%) using immunotherapy. Hospitalisation occurred significantly more in the cohort than regionally (0.18%, CI 0.17-0.19, *p*=0.015), but not significantly more than nationally (0.28%, CI 0.279-0.284). Mortality was equal in the IBD cohort compared with regionally and nationally.
Conclusion: Neither IBD nor the use of immunosuppressants are associated with an increased risk for severe COVID-19 in a cohort study in the first year after the outbreak.

Care for recently diagnosed inflammatory bowel disease patients: Lessons learned from a patient-centred, mixed-method study

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Background: Newly diagnosed IBD patients are challenged to deal with the physical and emotional impact of IBD and need to learn about their new disease and treatment options. We aimed to evaluate care for recently diagnosed IBD patients from the patient perspective and assess themes for improvement.
Methods: A mixed-method study with adult IBD patients diagnosed since 4-15 months was performed by conducting semi-structured interviews to identify relevant themes for IBD care. Based on these themes, we developed and validated a questionnaire (SATI-Q) with 15-items on a 7-point Likert scale divided in two domains: *medical care* and *information and psychosocial care*. Higher scores indicate higher patient satisfaction (standardized range 0–100). Next, this questionnaire was presented to 107 patients.
Results: We interviewed 20 patients. Patients were satisfied with the communication of IBD diagnosis (n=19) and highly valued first a consultation with the gastroenterologist and next with the IBD nurse (<1 month). On average, patients had 7.5 (±3.7) contacts in six months of which 1/3rd with gastroenterologists and 2/3rd with IBD nurses. Majority (n=16) was satisfied with this distribution. Most (n=15) preferred spoken information over websites or brochures. Patients missed information on fatigue (n=3), medication (n=3) and lifestyle (n=2). Many patients (n=8) wanted to discuss the impact of IBD on daily life more extensively with IBD nurses (e.g. work, fatigue), favourably 3-6 months after diagnosis. Three patients would have wanted contact with a psychologist or social worker and one patient wanted this earlier (before subtotal colectomy).
Subsequently, 84/107 patients completed the SATI-Q: 51% female, age 37 years (IQR 25–58), 36% Crohn's disease, disease duration 9 months (IQR 6–12) and 74% in clinical remission. Patient satisfaction with IBD care scored median 82 (IQR 72–92) out of 100 points on the SATI-Q. Patients were more satisfied with medical care than with information and psychosocial care (score 92 (IQR 92–98) vs. 74 (IQR 60–90)). Patients were least satisfied with the attention given to emotions related to IBD and information on IBD medication, diet influence and what to expect in the future (item score ≤4 in 23%, 24%, 43% and 46%).
Conclusion: The SATI-Q may be used to evaluate care in early IBD and proved helpful in identifying issues for improvement. In this study, recently diagnosed IBD patients highly valued personal contact with the treatment team, IBD nurses equal to gastroenterologists, and preferred spoken over written information. Psychosocial care and information on IBD medication, diet influence, future perspectives and fatigue require improvement.

Development and implementation of a remote monitoring tool for real-world assessment of mild, moderate and severe infectious complications in Inflammatory Bowel Disease patients

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Background: Immunomodulators and biologicals are cornerstones in the current management of Inflammatory Bowel Disease (IBD), but are associated with increased risk of infections. Post-marketing surveillance studies are important to assess the risk for infectious side effects in real-world populations, yet mainly focus on severe infections. Data on mild and moderate infections in IBD patients are scarce, primarily since self-limiting infections and infections treated by the general practitioner are not systematically captured. Mild and moderate infections take longer to clear in immunosuppressed patients, have a large impact on (work) disability and quality of life, and potentially precede severe infections. In the current study, we aimed to develop and implement a remote monitoring tool for real-world assessment of infections in IBD patients.
Methods: Through a structured iterative process with input from IBD specialists, nurse practitioners, and a comprehensive literature review, a 7-item Questionnaire comprising 15 different types of infections (covering *e.g.* upper/lower respiratory tract; urinary tract; eye; and skin infections) was developed to measure Patient-Reported Infections (PRIQ) with a recall period of 3 months. Infection severity was defined as either mild (self-limiting or requiring topical treatment), moderate (requiring oral antibiotic, antiviral or antifungal drugs) or severe (requiring hospitalization and/or IV treatment). To ascertain comprehensiveness and comprehensibility in the intended study population prior to implementation, in three rounds a total of 36 randomly selected IBD patients visiting the outpatient clinic were interviewed individually until saturation was reached.
Results: Overall, patient understanding of the PRIQ was good and cognitive interviews did not result in reduction of questionnaire-items. Analysis of feedback from interviews resulted in addition of definitions to certain response options (*e.g.* definition for antivirals) and minor linguistic adjustments to further improve patient understanding. A total of three patients (8.3%) raised concerns on the recall period of 3 months, which after expert consensus, did not result in alteration of the recall period. Next, the PRIQ was digitized and implemented in myIBDcoach, an established telemedicine platform for management of IBD.
Conclusion: We developed a remote monitoring tool (PRIQ) to assess patient-reported infections in IBD and ascertained patient understanding through cognitive interviewing. A prospective multicentre study using the myIBDcoach platform is ongoing to validate the PRIQ and subsequently report the risk of mild and moderate infections across different treatment regimens in IBD patients.

Validation of a novel point-of-care finger prick test for C-reactive protein, infliximab and adalimumab in patients with inflammatory bowel disease

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Background: Point-of-Care tests (POCTs) allow instant measurement of inflammatory markers and/or drug concentrations. However, currently available POCTs for infliximab (IFX) and adalimumab (ADL) serum concentrations are time consuming. Recently, a new POCT device (ProciseDx, San Diego, CA, USA) was developed which conveniently measures C-reactive protein (CRP), IFX and ADL capillary concentrations within minutes. We aimed to validate this device by comparing POCT results with conventional laboratory tests for serum CRP, IFX and ADL in patients with inflammatory bowel disease (IBD).

Methods: IBD patients requiring routine measurement of serum CRP, IFX or ADL were invited to participate. Along with serum collection, 20µl of capillary blood was obtained via finger prick and dispensed in a cartridge with a buffer, and placed in the POCT device providing results within two to four minutes. Forty patients were needed to validate the CRP POCT, as this assay was already previously validated in a different population. For the IFX and ADL assays, 120 patients using IFX or ADL were required to validate the POCT. Agreement between the laboratory serum assay and POCT was visualized on a scatter diagram and a Bland-Altman plot. Deming regression was calculated to demonstrate agreement. In addition, Pearson's correlation coefficient was calculated.

Results: Until now, 41 patients have been enrolled for the CRP assay, 120 patients for the IFX and 46 patients for the ADL assay. Two ADL patients were sampled twice (n=48). Significant correlations were found for CRP, IFX and ADL (r=0.98, r=0.88 and r=0.86 respectively). Deming regression analysis of the CRP assay resulted in a slope of 0.71 (95% CI 0.49 to 0.93) and 1.5 (95% CI -0.44 to 3.50) for the intercept. For the IFX assay, the slope was 1.1 (95% CI 0.83 to 1.3) and the intercept was 1.4 (95% CI -0.47 to 3.4). For the ADL assay, the slope was 0.97 (95% CI 0.64 to 1.3) and the intercept was 2.3 (95% CI -0.64 to 5.2).

Conclusion: A novel POCT using a finger prick approach provides a rapid, user friendly and reliable measurement of CRP, IFX and ADL concentrations within minutes. The capillary CRP was slightly lower than the venous serum CRP, which was consistently observed and considered clinically irrelevant in this cohort.

Complication rate after early detachment of T-Fasteners after Percutaneous Radiologic Gastrostomy

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Background: Percutaneous radiologic gastrostomy (PRG) is used as an equivalent and alternative to percutaneous endoscopic gastrostomy in patients who are unable to consume oral nutrition for an extended period of time. PRG can be complicated by early detachment of the T-fasteners, which may lead to insufficient gastropexy and is therefore often followed by additional T-fastener placement. However, the necessity of additional placement of T-fasteners after detachment is debated. In a retrospective study in 2018 there was no difference in complication rate after immediate removal of T-fasteners direct after tube placement versus maintaining T-fasteners, suggesting additional placement of T-fasteners after detachment is unnecessary[1]. We aimed to assess the occurrence of early detachment of T-fasteners after PRG and to determine its consequences.
Methods: We performed a single center, retrospective and observational study in patients who underwent PRG placement between 2015 and 2020. The 16 Fr Avanos Introducer kit for gastrostomy was used with placement of three or four T-fasteners. The T-fastener detachments within seven days after PRG were assessed as well as the additional replacements. The clinical course of patients with T-fastener replacement was evaluated by review of the medical records.
Results: A total of 654 patients were included. Early T-fastener detachment after PRG occurred in 100 cases (15%). In 54 cases only one T-fastener was detached and none of these patients underwent T-fastener replacement. One of the 54 patients developed a peritonitis, but had also a simultaneous tube luxation. More than one T-fastener was detached in 46 patients, of whom 22 underwent replacement with at least two T-fasteners. Five out of 46 patients developed pneumoperitoneum without symptoms. Four of these patients underwent T-fastener replacement.
Conclusion: Early T-fastener detachment after PRG did not result in clinical relevant complications. This is likely due to the sufficient fixation of the stomach to the abdominal wall with the balloon-tipped gastrostomy tube. The one case of peritonitis was most likely the result of the simultaneous non-intended tube removal. Patients with pneumoperitoneum had no complaints. Our results suggest that after PRG there is no need for additional placement of T-fasteners after early detachment, if adequate tube fixation is ensured.

1: Mamadou L. Sanogo et al, Removal of T-Fasteners immediately after percutaneous gastrostomy tube placement: Experience in 488 patients, AJR 2018

'Eetscore' in patients with Inflammatory Bowel Disease: an online tool to assess diet quality and provide personalised dietary advice

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Background: Many patients with IBD believe diet affects the course of disease and is at least as important as medication in their IBD treatment. However, easy assessment of patients' food intake and structured support of a healthy diet are lacking. We used the online *Eetscore* tool to assess diet quality of IBD patients, to evaluate if use of the tool improves diet quality over time, and to study correlations with health-related quality of life (HRQoL) and clinical disease activity. Methods: A prospective cohort study with adult IBD patients was performed. Participants were invited for questionnaires (*Eetscore*, short IBDQ and p-HBI or p-SCCAI) at baseline and after 1 and 4 months. The *Eetscore* is a validated web-based screening tool to assess diet quality based on 16 food components (e.g. meat, vegetables, fruit and fish). It consists of a short Food Frequency Questionnaire and is scored with the Dutch Healthy Diet 2015-index based on the Dutch dietary guidelines. The score of each component ranges from 0 to 10, resulting in a total score between 0 and 160. Higher scores indicate better adherence to Dutch dietary guidelines. The *Eetscore* subsequently provides personalised dietary advice based on the assessment. Data were analysed using linear mixed models. Results: Of 212 participants, 190 completed at least two out of three assessments. Of this group, 60% was female, median age was 49 years [IQR 32-57], BMI 25 kg/m^2 [IQR 22-28], disease duration 10 years [IQR 4-18], 50% had Crohn's disease and 72% was in clinical remission. At baseline, mean *Eetscore* was 98 (±SD 20) with highest scores on red meat (9.0 ±2.5), alcohol (8.6 ±2.9), salt intake (7.8 ±2.5), whole grain products (6.9 ±2.9), and sweetened beverages (6.9 ±3.7), and lowest scores on legumes (5.1 ±4.5), nuts (4.7 ±3.9), processed meat (4.5 ±3.7) and unhealthy choices (2.5 ±3.8). After using the *Eetscore*, diet quality increased to 104 points (SE 1.7) after 1 month and 107 points (SE 1.7) after 4 months. This increase was significant between baseline and 1 month (p<0.001), baseline and 4 months (p<0.001) and 1 month and 4 months (p=0.003). Increase in diet quality was correlated with increase in HRQoL (β=0.046 (95%CI 0.003 - 0.089), p=0.038) but not correlated with change in clinical disease activity in Crohn's disease (p=0.214) or ulcerative colitis (p=0.054).
Conclusion: Diet quality of IBD patients significantly improved following personalised dietary advice of the *Eetscore*. This was correlated with a slight improvement in HRQoL but not with a change in clinical disease activity. The *Eetscore* may be a useful tool to monitor and support a healthy diet in IBD patients.

Obesity is associated with higher risk of immunogenicity to adalimumab, but not infliximab, in patients with inflammatory bowel disease

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Background: Secondary loss-of-response to anti-tumour necrosis factor-α (anti-TNF) monoclonal antibodies is frequently encountered in patients with inflammatory bowel disease (IBD). Obesity may be overlooked as a risk factor for loss-of-response to anti-TNF compounds. We assessed the association between obesity and treatment failure or immunogenicity to anti-TNF maintenance treatment in patients with IBD.

Methods: This was a multicentre, retrospective cohort study of adult patients with Crohn's disease, ulcerative colitis or IBD-unclassified, treated with adalimumab or infliximab for at least four months between 2011-2019 at a general hospital and a tertiary referral centre. Treatment failure was defined as anti-TNF discontinuation because of refractory disease, surgery or dose escalation. Adjusted hazard ratios (aHR) were calculated by multivariable, mixed-effects Cox regression analysis. Mixed linear modelling was performed for longitudinal anti-TNF trough levels analysis.

Results: We included 728 patients, providing 2339 patient-years of follow-up and 868 treatment episodes with anti-TNF. One hundred and thirty (17.9%) individual patients were obese (body mass index >30kg/m^2). Obesity independently predicted occurrence of anti-adalimumab antibodies (aHR: 2.07, 95%CI: 1.09 – 3.91), lower adalimumab trough levels (-0.20mg/L on a log-scale, 95%CI -0.38 – -0.02) and predicted adalimumab failure on crude analysis, but not on multivariable analysis (aHR 1.40, 95%CI 0.93 – 2.11). Comparable risks of infliximab failure and anti-infliximab antibodies were observed between obese versus non-obese patients.

Conclusion: In patients with IBD treated with adalimumab, but not infliximab, obesity is associated with immunogenicity and possibly treatment failure. Proactive therapeutic drug monitoring may be warranted in obese patients treated with adalimumab.

Faecalibacterium prausnitzii modulates intestinal mucosal health via HIF1α-induced epithelial production of IL-18

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Background: Patients with inflammatory bowel disease (IBD) typically present low levels of short-chain fatty acid (SCFA) -producing bacteria, such as the butyrate-producer *Faecalibacterium prausnitzii*. The inflamed gut mucosa of IBD patients becomes severely hypoxic, activating the Hypoxia-inducible Factor 1 (HIF1) pathway that regulates epithelial barrier and immune function. HIF activity is also regulated by butyrate. Here, we analyzed the *F. prausnitzii*-mediated control of the HIF1 pathway in intestinal epithelial cells.
Methods: We investigated the direct interaction between the anaerobic *F. prausnitzii*and primary human intestinal epithelium or Caco-2 cells in the HoxBan (Human-oxygen Bacteria-anaerobic) *in vitro* coculture system. CRISPR-Cas9 technology was used to inactivate the *HIF1A*gene in Caco-2 cells (Caco-2 *HIF1A*-null). After coculturing with *F. prausnitzii,* Caco-2 *HIF1A*-null and proper control Caco-2 cells (Caco-2 CON) were analyzed for cell viability and RNA sequencing (RNAseq; *n*= 3). Enrichment analysis (Enrichr®) was performed to establish the biological relevance of differentially expressed gene (DEG) sets. Additionally, DEG of interest were analyzed in mucosal RNAseq data of 854 intestinal biopsies from 420 IBD patients.
Results: Live *F. prausnitzii*suppressed the expression of the negative HIF regulator *EGLN2*, while enhancing levels of HIF1 targets (*CAIX*and *VEGF*) in primary human intestinal epithelium. *F. prausnitzii* suppressed caspase-3 activity both in Caco-2 CON and Caco-2 *HIF1A*-null, when compared to control conditions without *F. prausnitzii.* The HIF1α pathway activation capacity (calculated by HIF1α score) was significantly decreased in Caco-2 *HIF1A*-null compared to Caco-2 CON, when both were cocultured with live bacteria. *F. prausnitziii*-mediated induction of interleukin 18 (*IL18* mRNA in Caco-2 cells was prevented in the absence of *HIF1A*). Furthermore, *IL18*expression was strongly (and positively) associated to HIF1α scores in intestinal biopsies from IBD patients.
Conclusion: The gut commensal *F. prausnitzii*primes the human intestinal epithelium to sense oxygen. *F. prausnitzii*enhances intestinal epithelial *IL18*expression in a HIF1α-dependent manner, which is an important cytokine to control mucosal health.

What is the outcome of gallstone patients treated in primary care? A multi-practice comparative analysis

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Background: Before referral for surgery, an increasing number of patients with gallstones consults their general practitioner (GP). In light of cholecystectomy's disappointing outcomes in terms of pain relief and persisting abdominal symptoms, it is interesting but largely unknown how GPs manage patients with cholecystolithiasis in daily practice. Therefore, this study aims to examine GPs' management of cholecystolithiasis and evaluates persisting abdominal complaints in the years after the diagnosis.
Methods: Retrospective analysis of registry data and a subset of individual medical records of patients with cholecystolithiasis diagnosed between 2012-2016 from the Radboudumc Practice Based Research Network. We assessed healthcare utilization in terms of laboratory diagnostics, prescribed medication, and the prevalence of concomitant abdominal-related diagnoses in a time interval of 3 years before and 3 years after diagnosis of cholecystolithiasis. We compared the non-referred group with the referred group.
Results: The registry data included 639 patients with cholecystolithiasis diagnosed between 2012 and 2016. In 57% of patients, concomitant abdominal-related diagnoses were recorded besides the diagnosis cholecystolithiasis. In-depth analyses of 294 patients showed a referral rate of 79.2% (n=233); 62.9% (n=185) underwent cholecystectomy. After referral, 55.4% (129/233) returned to the FP for persistent abdominal symptoms. Patients returning after referral were more often treated for another abdominal-related diagnosis before cholecystolithiasis was recorded (51.9% vs. 28.8%, p < 0.001).
Conclusion: The majority of patients with gallstones consulting their GP are referred and undergo cholecystectomy. Patients with concomitant abdominal-related diagnoses are likely to return to their physician. GPs and consulted surgeons should inform patients about these outcomes to improve the shared decision-making process before gallbladder surgery.

The diagnostic value of staging laparoscopy in gallbladder cancer: a nation-wide cohort study

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Background: In patients with gallbladder cancer (GBC), disseminated disease (DD) is often found at (re)-exploration despite preoperative radiological imaging. This study aims to define the role of staging laparoscopy (SL) in preventing an unnecessary laparotomy and to identify predictors for irresectability.
Methods: This retrospective cohort study included patients with primary GBC (pGBC) planned for resection with curative intent and patients with incidentally diagnosed GBC (iGBC) planned for re-resection from all eight academic centres in the Netherlands. The yield of SL was determined. Resection rate was analysed in both patient groups. For iGBC, predictive factors for irresectability were assessed.
Results: A total of 290 patients was included for analysis; 183 patients with pGBC and 107 patients with iGBC. In pGBC patients, 78% (143/183) underwent laparotomy without SL; of these, 101 patients underwent resection (71%) and 42 (29%) were diagnosed with DD during laparotomy. In 20% of the pGBC patients (8/40), DD was diagnosed during SL. In 28% of patients (9/31) DD was missed by SL and an unnecessary laparotomy was performed. The resection rate after SL was 72% (23/32). The yield of SL in patients with pGBC was 20% (8/40).
In iGBC patients, 100 out of 107 patients were re-explored by laparotomy, of which 81 patients (81%) underwent resection. Seven patients (7%) underwent SL before re-resection, one patient was diagnosed with DD and two patients were identified as potentially resectable but showed DD during laparotomy. The yield of SL in iGBC was 14% (1/7). In multivariable analysis, cholecystitis (OR=4.25 95%CI 1.51–11.91) and a primary R1/R2 resection (OR=3.94; 95%CI 1.39–11.19) were independent predictive factors for DD at re-resection.
Conclusion: In pGBC patients, SL identified DD and avoided an unnecessary laparotomy in 20%. In iGBC patients the yield of SL increases by targeting patients with a higher risk for DD. Based on the present results, we recommend SL in all patients with pGBC. In iGBC patients SL is specifically indicated after a primary resection for cholecystitis and in patients with an initial R1/R2 resection.

Impact of lymph node ratio on survival in the histopathological subtypes of resected ampullary cancer: a retrospective international multicenter cohort study

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Background: Ampullary adenocarcinoma (AAC) is a rare malignancy with extensive morphological heterogeneity. Variable results have been reported regarding the predictive value of lymph node ratio (LNR) on survival in patients with resected AAC. The aim of this study was to investigate the prognostic predictive value of LNR adjusted for factors influencing survival in patients with resected AAC.
Methods: This retrospective international multicenter cohort study included all patients who underwent pancreatoduodenectomy for AAC (2006-2020). Patients who underwent palliative procedures or local excision of AAC were excluded, as were patients with an R2 resection, distant metastasis, or 30-day postoperative mortality. Overall survival(OS) was assessed using the Kaplan-Meier method and log-rank tests. Cox proportional hazard models were performed to identify independent predictors of OS. Optimal cut-off for LNR was determined calculating the Youden's index and logrank test.
Results: Overall, 1230 patients after pancreatoduodenectomy for AAC were included. Histopathologic subtype was documented in 907 patients (73.7%), of whom 369 had intestinal subtype (40.7%), 477 pancreaticobiliary subtype (52.6%), and 61 a mixed subtype (6.7%). Median survival was not reached for the intestinal subtype. For the pancreatobiliary subtype and mixed subtype, median survival was 60 (42-77), and 76 (35-116) months, respectively. The optimal cut-off for the LNR was 0.10. Age, tumor size, resection margin, T3/4 stage, poor tumor differentiation, and LNR were independent predictors of survival.
Conclusion: This study shows the importance of LNR for prognosis in patients with all histopathological subtypes of resected AAC and an optimal cut-off point for the LNR of 0.10.

Validation of the Eighth Edition of the American Joint Committee on Cancer (AJCC) TNM Staging System in Patients with Resected Ampullary Adenocarcinoma

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Background: The purpose of this study is to assess the prognostic accuracy of the 7th and 8th AJCC staging system for AAC and to externally validate the 8th edition of the AJCC for resected ampullary cancer in an international cohort.
Methods: This retrospective international multicenter cohort study included all patients who underwent pancreatoduodenectomy for AAC (2006-2020). Patients were retrospectively staged according to the AJCC TNM 8th edition. Prognostic accuracy on overall survival was compared between both TNM editions by Kaplan-Meier estimates and concordance statistics. Results: In total, 640 patients were included for analysis. Stage IA, IB, IIA, IIB, III, and IV were 6.6%, 17.2%, 8.8%, 33.8%, 29.4%, and 2.6% in the 7th edition and Stage IA, IB, IIA, IIB, IIIA, IIIB and IV 13.7%, 15.1%, 2.6%, 2.3%, 40.2% 21.4%, and 2.3% in the 8th edition, respectively. Median overall survival for the entire cohort was 73 months. Five-year cumulative survival rates changed from 86%, 65%, 46%, 38%, 28%, 12% (log-rank p < 0.0001) in the 7th edition, to 58%, 70%, 81%, 84% and 38%, 9%, 14% (log-rank p < 0.0001) in the 8th edition. The 5-year survival rates for N0, N1, N2 (8th edition) were 67%, 37% and 12%, respectively (log-rank p < .0001). The C-statistic improved from 0.677 (95% CI: 1.509-2.050) in the 7th to 0.695 (95% 1.345- 1.671) in the 8th edition.
Conclusion: In this international cohort, the AJCC 8th edition of the TNM staging system for AAC demonstrated a better distribution and an increased prognostic accuracy compared to the 7th edition. The new N stage is highly prognostic for survival.

The Use of Indocyanine Green Fluorescence Imaging in Preventing Postoperative Bile Leakage of the Hepaticojejunostomy in Robot-assisted Pancreatic Surgery

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Background: Postoperative bile leakage (POBL) due to insufficiency of the hepaticojejunostomy (HJ) after pancreaticoduodenectomy (PD) is associated with high morbidity and mortality. The incidence is reported to be in the range of 2,2-8.0%.Indocyanine green (ICG) is a water-soluble molecule that, after intravenous injection, is eliminated by the liver and is visible intraoperatively due to its fluorescent characteristics. The aim of this prospective cohort study was to determine the clinical value of ICG in preventing POBL of the HJ in robot-assisted surgery.
Methods: All robot and ICG assisted HJ anastomoses in 2019 and 2020 were included. All anastomosis were created by a single surgeon, end-to-side, using the da Vinci X, with polydioxanone (PDS) 5.0 interrupted or V-loc sutures. ICG was administered before or at finishing the HJ. Biliary leakage was objectified with near infrared (NIR) technology (Firefly mode). In the event of an intraoperative leakage the anastomosis was revised. Postoperative HJ-insufficiencies were classified according to the International Study Group of Pancreatic Surgery (ISGPS) classification.
Results: A total of 26 patients were included with a mean age of 70 (SD ± 8) of which 14 (54%) were male. All patients underwent a PD. In 25 cases the indication for surgery was a malignancy and in 1 case a pancreatic cyst. All patients were given ICG without side effects and the bile ducts were adequately illuminated. Mean time between completion of the HJ anastomosis and leakage control was 30 minutes. In 4 (15%) cases an intra-operative HJ insufficiency was observed and a revision was successfully performed. Postoperatively, two (50%) of these patients developed a grade B HJ-insufficiency with one patient having a simultaneous grade C pancreatojejunostomy (PJ) insufficiency. In the other 24 cases 2 patients (8%) developed a HJ insufficiency. One patient developed a grade B and one patient developed a grade C HJ-insufficiency with a concomitant grade C PJ insufficiency. In our study ICG has an accuracy of 66,7%, a positive predictive value of 50% and en negative predictive value of 87,5%.
Conclusion: Our study shows that bile illumination with ICG in robot assisted HJ creation enabled us to prevent two anastomotic insufficiencies. As POLB does not solely depend on technical insufficiency, intraoperative revision does not guarantee postoperative success. However ICG is a useful and simple tool in observing intraoperative HJ-anastomosis insufficiencies.

Using advanced modeling in improving the CEA algorithm for colorectal cancer: a possible bridge for follow-up in primary care

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Background: Carcinoembryonic antigen (CEA) is a widely used tumor marker that can be a useful indicator for additional imaging in the follow-up of colorectal cancer (CRC) after curative resection. However, CEA interpretation can be challenging despite existing guidelines and algorithms. In this study we propose a novel, more practical CEA-algorithm calculating the risk for recurrent disease allowing the oncological follow-up to be performed by nurse-practitioners or general practitioners.
Methods: All patients who underwent colorectal surgery with curative intent from 2007 until 2018 with ≥ stage I CRC at the Zuyderland mc were included. A linear mixed effects model was trained on a random subset of patients and validated on the remaining subjects. Gender, age, smoking status, TNM stage, resection margin, preoperative and longitudinal CEA values were used as parameters of the model. The model was trained to predict the risk for one year recurrence after each subsequent CEA-measurement. The model was compared with three conventional and currently used national and international guidelines.
Results: 1940 eligible patients were included, of which 291 showed recurrent disease. The model predicts with an accuracy of 85% (95% CI: 84%-86%) on the training set and 84% (95% CI: 83%-85%) on the validation set. The guidelines performed significantly worse with 79% (95% CI: 78%- 80%, P < 0.001), 83% (95% CI: 82% - 84%, P < 0.001), and 80% (95% CI: 79% - 80%, P < 0.001) on the training set and 78% (95% CI: 77%- 79%, P < 0.001), 81% (95% CI: 80% - 82%, P < 0.001) and 79% (95% CI: 78% - 81%, P < 0.001) on the validation set, respectively.
Conclusion: Our algorithm shows a significant increase in accuracy in predicting one year recurrence during follow-up relative to three conventional and currently used guidelines. Due to its easy and more practical way of use, it enables the oncological follow up of CRC-patients to be done by nurse-practitioners or general practitioners.

Patient-Reported Outcome Measurement-Haemorrhoidal Impact and Satisfaction Score (PROM-HISS): Development, Reliability and Construct Validity

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Background: Haemorrhoidal disease (HD) is a frequently occurring disorder with a significant negative impact on a patient's quality of life. The international Core Outcome Set (COS) for HD trials states that symptoms and satisfaction are the core outcomes to be evaluated using a Patient Reported Outcome Measure (PROM). We describe the development and validation of the Patient-Reported Symptom Measurement-Haemorrhoidal Disease and Satisfaction Score (PROM-HISS).
Methods: The development of the PROM-HISS followed recommended guidelines for the development and validity of health status questionnaires. The items of the PROM-HISS were based on patient interviews, literature review and expert input. Face and content validity of the concept version were evaluated by conducting individual think-aloud interviews. Structural properties, reliability and construct validity were measured in a cross-sectional population. Reliability was tested by assessing the test-retest reliability, defined by the Intraclass Correlation Coefficient (ICC), and internal consistency measured with Cronbach's alpha. Construct validity was evaluated using confirmatory factor analysis (CFA) and hypotheses testing.
Results: The PROM-HISS consisted of the following three domains: (1) HD symptoms, (2) impact of HD on daily life, and (3) satisfaction with treatment. The first domain comprised of five items focused on the experienced burden of blood loss, pain, prolapse, soiling and itching. The face and content validity check among 10 patients led to minor adjustments to the wording of some items. The PROM-HISS was completed by 102 patients (65% male), with a mean age of 58 years (23-81 years) and primarily diagnosed with HD grade III (39,2%). The ICCs of the different items in the domain 'Symptoms' ranged between 0.56 and 0.79 and were interpreted as good and the Cronbach's alpha value was 0.80 and considered satisfactory. The CFA provided further evidence for construct validity with a good model fit. In line with our hypotheses, a correlation was found between a high score on the symptoms of HD, a high impact of HD on daily life (Pearson's r = 0.632, p<0.01), and a low degree of satisfaction (Pearson's r = 0.378, p<0.01). An overall high score of symptoms of HD on the PROM-HISS was linked to a lower health-related quality of life score as measured by the EQ-5D-5L (Spearman's Rho 0.499 and Pearson's r = 0.574, p<0.01).
Conclusion: The PROM-HISS is a reliable and valid instrument to evaluate symptoms of HD, impact on daily life and satisfaction with treatment. It has been developed in conjunction with patients, ensuring coverage of domains and issues relevant from the patient's perspective.

High prevalence of ulcerative appendicitis in UC patients without colonic disease activity

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Background: The aim of the current study was to assess histological features of appendices from patients with ulcerative colitis (UC) and their clinical relevance.
Methods: Patients with UC in remission and active UC (therapy refractory) that underwent appendectomy between 2012-2019 were included. Histological features of UC appendices were compared to those of patients with acute appendicitis and colon carcinoma. The Robarts Histopathology Index (RHI) was used to assess appendiceal inflammation. In patients with active UC, histological and clinical characteristics were compared between patients with and without endoscopic response following appendectomy.
Results: In total, 140 appendix specimens were assessed (n=35 UC remission, n=35 active UC, n=35 acute appendicitis, n=35 colon carcinoma). Histological features of appendices from UC patients looked like UC rather than acute appendicitis. The presence of active appendiceal inflammation was comparable between patients in remission versus active disease (53.7% versus 46.3%, p=0.45) and limited versus extensive disease (58.5% versus 41.5%, p=0.50). Endoscopic response (Mayo 0-1) following appendectomy, assessed in 28 therapy refractory patients, was more frequently seen in patients with higher RHI scores (RHI>9 81.8% versus RHI≤9 9.1%, p<0.01) and limited disease (proctitis/left sided 63.6% versus pancolitis 36.4%, p=0.02).
Conclusion: The presence of active appendiceal inflammation is common in UC and does not correlate with colonic disease activity. More than 50% of UC patients in remission showed active histological disease in the appendix. Favorable response to appendectomy for refractory UC was seen in cases with ulcerative appendicitis. These findings might support the role of the appendix as a pivotal organ in UC.

Identification of pathogenic bacteria during abdominal sepsis in mice using exhaled breath analysis; a proof-of-concept study

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Background: Abdominal sepsis is a severe and even deadly condition that requires early and adequate treatment in order to improve patient outcome. With current techniques, identification of causative microorganisms in abdominal sepsis takes up to 4 days. Identification of specific volatile organic compounds (VOCs) in exhaled breath may assist in speeding up this process. *In vitro* headspace analysis already showed the possibility to discriminate Escherichiae coli (E.coli) and Enterococcus faecalis (E.faecalis) cultures, common causative pathogens of abdominal sepsis following colorectal surgery, based on their VOCs. The current *proof-of-concept* study investigates the potential of VOC analysis in exhaled breath to differentiate between E.coli and E.faecalis in a murine model of abdominal sepsis.
Methods: Male C57Bl/6 mice were given an intraperitoneal injection with 200uL of 10^8 CFU/ml E.coli (n=20) or 200uL of 10^9CFU/ml E.faecalis (n=20) to induce an abdominal sepsis. Exhaled breath was collected on stainless steel desorption tubes (1TD/Carbopack X) using a custom-made breath sampling device prior to the injection and at 1, 3, 6 and 12 hours thereafter. Plasma levels of IL-6 were determined in plasma (t = 6 and 12 hours) using Luminex. Breath samples were analyzed by thermal desorption-gas chromatography combined with *time-of-flight* mass spectrometry (GC-*to-f*-MS). Random Forest was used to find specific VOCs to discriminate between the two groups. The results were visualized by means of Principal Coordinate Analysis (PCoA).
Results: Based on a set of 30 distinctive VOCs for E.coli and 42 distinctive VOCs for E.faecalis the development of the septical profile could be detected at 1 hour after the injection before the mice were clinically ill. IL-6 levels showed systemic inflammation at 6 hours after the injection and was decreased again at the end of the experiment. Moreover, a selected set of 50 distinctive VOCs enables clear distinction between sepsis induced by E.coli and E.faecalis.
Conclusion: The current study shows that it is possible to detect the emergence of an abdominal sepsis and to even discriminate between the causative pathogens by analyzing exhaled air. Future research will be directed to evaluate the potential of exhaled air analysis in the clinical setting to timely detect abdominal sepsis and guide treatment accordingly.

Long-term follow-up outcomes of an endoscopic versus surgical step-up approach for infected necrotizing pancreatitis (extension)

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Background: The TENSION trial (published in 2018) found that an endoscopic step-up approach in patients with infected necrotizing pancreatitis does not reduce mortality or major complications. However, it prevents pancreatic fistulas and shortens hospital stay, as compared to the surgical step-up approach. Nonetheless, the question remains whether long-term outcomes (>6 months) differ between both approaches. The aim of this study is to compare long-term clinical outcomes after the endoscopic and surgical step-up approach.
Methods: Patients randomized in the TENSION trial were prospectively evaluated by interviews and pancreatic function measurements after a follow-up period of at least 5 years. Endpoints were similar to those of the original TENSION trial. The primary endpoint was composed of death and major complications, occurring between randomization and end of long-term follow-up. Secondary endpoints included the individual components of the primary endpoint, pancreatic fistula, exocrine and endocrine insufficiency, total hospital stay, reinterventions and quality of life (QoL).
Results: The mean follow-up period was 7 years (84±11 months). The primary endpoint occurred in 29 patients (57%) in the endoscopy group and 27 patients (57%) in the surgery group (RR 0.99, 95% CI 0.70–1.40). Overall, mortality did not differ significantly (15 patients (29%) vs. 7 (15%) respectively; RR 1.89, 95% CI 0.89–4.42), neither did new mortality after the initial follow-up of 6 months (6 patients (14%) vs. 1 (2%) respectively; RR 5.86, 95% CI 0.74–46.55). During long-term follow-up, all deaths were unrelated to pancreatitis. Overall, no differences were found in exocrine (57% vs. 66%, RR 0.86, 95% CI 0.63 - 1.18) or endocrine insufficiency (31% vs. 34%, RR 0.92, 95% CI 0.52 - 1.63) and total hospital stay (52 vs. 72 days, P=0.09). The endoscopy group had significantly fewer pancreatic fistulas (8% vs. 34%; RR 0.23, 95% CI 0.08–0.83) and additional drainages during follow-up (7% vs. 24%; RR 0.29, 95% CI 0.09 - 0.99). The endoscopy group reported higher physical health scores (SF-36) at 3 months after randomization (42±11 vs. 36±10, P=0.04), however, long-term QoL scores did not differ between groups (EQ-5D 0.80±0.23 vs. 0.86±0.17, P=0.24).
Conclusion: During the long-term follow-up of TENSION trial participants, we found no differences in mortality and major complications between the endoscopic and surgical step-up approach for infected necrotizing pancreatitis. However, the endoscopic step-up approach results in fewer pancreatic fistulas, additional drainage procedures and a faster physical recovery. These results confirm that, if both techniques are feasible, the endoscopic approach should be preferred.

Sacral neuromodulation versus personalized conservative treatment in patients with idiopathic slow-transit constipation: the No.2-trial

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Background: Sacral neuromodulation (SNM) is a potential treatment option for patients with slow-transit constipation. However, available evidence is conflicting and of suboptimal methodological quality. To obtain evidence of higher methodological quality, the Dutch Ministry of Health conditionally reimbursed SNM from October 2016 to December 2021, for participants of the No.2-Trial. In this study, we aimed to assess the effectiveness of SNM versus personalized conservative treatment (PCT) in patients with refractory, idiopathic, slow-transit constipation.
Methods: An open-label, pragmatic, multicenter, randomized controlled trial (No.2-Trial) was performed in two Dutch hospitals specialized in SNM. We recruited patients aged 14 to 80 years with idiopathic slow-transit constipation, an average defecation frequency < 3 per week, and meeting at least one other Rome-IV criterion. Patients with obstructed outlet, irritable bowel syndrome, bowel pathology, or rectal prolapse were excluded. Eligible patients were randomized to SNM and PCT (3:2). SNM consisted of a four-week test stimulation after which, if successful, a neurostimulator was implanted. The primary outcome was treatment success after six months of follow-up. Success, for both test stimulation and primary outcome, was defined as an average defecation frequency ≥ 3 per week, assessed with three-week defecation diaries. Secondary outcomes were Wexner Constipation score, fatigue, and (health-related) quality of life. Missing data were multiply imputed and data analysis was conducted according to intention-to-treat. The No.2-Trial is registered at ClinicalTrials.gov, NCT02961582.
Results: Between February 21, 2017 and March 12, 2020, 67 patients (62 women, median age 31) were enrolled and randomly assigned to SNM (n=41) and PCT (n=26). There was a significant difference in treatment success after six months between the groups: 53.7% (n=22) was successfully treated in the SNM-group versus 3.8% (n=1) in the PCT-group *(p=0.003)*. At six months, patients with SNM reported lower Wexner Constipation scores *(p<0.001)*, were less fatigued *(p<0.001)*, and reported better (health-related) quality of life *(PAC-QOL, EQ5D5L & ICECAP-A p<0.001)* compared with PCT. Eight serious adverse events and 79 adverse events were reported, including eight reoperations in seven patients: four neurostimulators were repositioned and three leads were revised.
Conclusion: After six months of follow-up, there was a 49.9% difference in treatment success between SNM and PCT, in favor of SNM. This indicates that in a selected group of patients with refractory, idiopathic, slow-transit constipation, SNM can be an effective treatment option.

Inter-laboratory variation in the assessment of lymphovascular invasion in T1 colorectal cancer in the Netherlands

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Background: Lymphovascular invasion (LVI) is a risk factor for lymph node metastasis in T1 colorectal cancer (CRC). When LVI is present in the local resection specimen, additional surgical resection needs consideration. How often LVI is detected in T1 CRC in different institutions and how detection methods vary on a national level is unknown. Our aim was therefore to study the inter-laboratory variation in the assessment of LVI in a nationwide cohort, and to find possible explanations for the observed variation.
Methods: All synoptic pathology reports of locally resected T1 CRCs between 2015 and 2019 were retrieved from the Dutch Pathology Registry (PALGA). Absolute proportions of LVI per laboratory were determined and compared between the laboratories. Multivariable logistic regression was performed to adjust for case mix. These analyses were repeated in a subgroup of patients where LVI would have been the decisive factor for additional surgical resection, i.e., patients without other high-risk factors (poor differentiation, positive resection margin). Additionally, a questionnaire about assessment methods and criteria for LVI was circulated among 50 pathologists.
Results: In total, 5917 T1 CRCs from 35 laboratories were included. Of these T1 CRCs, 18.3% were reported to have LVI. The absolute proportions of positive LVI varied between the laboratories from 8.0% - 43.6%. The proportions of 14/35 (40%) laboratories were identified as significantly different compared to the overall national proportion. After adjustment for case mix, the proportions of 13/35 (37%) laboratories were significantly aberrant. In a subgroup of 3316 patients where LVI would have been the decisive factor for additional surgery, case-mix adjusted proportions of LVI varied between laboratories up to a factor of nine (4.9% - 42.2%). Notable findings from the questionnaire were disagreement on the definition of venous invasion and on whether one tumor cell in a vessel is sufficient to diagnose LVI, as well as differences in the use and interpretation of immunohistochemical staining.
Conclusion: The results of this nationwide study show that substantial inter-laboratory variation in the assessment of LVI in T1 CRC exists, independent of case mix. This variation was also observed in a subgroup where LVI represents the only high-risk factor and is thus a decisive parameter for clinical decision making. The observed variation might be partly explained by differences in assessment methods and criteria used among pathologists. This underlines the importance of standardization of the assessment of LVI, because the observed variation may lead to unwanted differences in treatment of patients with T1 CRC.

Endoscopic upper GI findings in patients below the age of 60 who present with alarm symptoms

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Background: Current guidelines recommend to withhold upper GI endoscopy in patients below the age of 60 who present with alarm symptoms because the likelihood of detecting upper GI cancer is considered negligible in these patients. We aimed to investigate the yield of endoscopy in these patients and to compare major endoscopic findings with patients without alarm symptoms.
Methods: Findings were obtained from our previously reported prospectively maintained endoscopy reporting database. We identified upper GI endoscopy reports of all procedures performed between 2015-2019 in 12 hospitals and selected patients aged 18-59 years with alarm symptoms (dysphagia, odynophagia, gastrointestinal bleeding, unintentional weight loss, anaemia, persistent vomiting or palpable epigastric mass). Major endoscopic findings were defined as ulcer, stricture, severe esophagitis (LA classification grade C or D), or optical diagnosis of cancer. Outcomes were compared with a previously published cohort of patients (patients aged 18-59 years without alarm symptoms who underwent upper GI endoscopy because of dyspeptic symptoms).
Results: We identified 21,464 patients with any alarm symptom who had undergone upper GI endoscopy. A total of 7,209 patients were between 18-60 years at the time of endoscopy (median 49 years, IQR [40-55], 54% female). The comparison cohort included 13,978 patients (median age 46 years, IQR [36-53], 62% female). A major endoscopic finding was seen in 697 patients (9.7% vs. 3.7% in the comparison cohort): gastric ulcer in 116 patients (1.6% vs 0.7%), duodenal ulcer in 188 patients (2.6% vs 0.8%), esophageal stricture in 78 patients (1.1% vs 0.2%) and duodenal stricture in 5 patients (0.1% vs 0.04%). Suspicion of cancer was seen in 124 patients (1.7% vs 0.3%), of which 82 patients were suspected to have esophageal (1.1% vs 0.1%), 42 patients (0.6% vs 0.2%) gastric and 5 patients (0.1% vs 0.04%) duodenal cancer. Severe esophagitis (LA grade C and D) was recorded in 224 patients (3.1% vs 1.6%). All differences between the two cohorts were statistically significant.
Conclusion: Major endoscopic findings, including upper GI cancer, are significantly increased in patients under 60 years presenting with an alarm symptom compared to those without an alarm symptom. In contrast to guideline recommendations, is seems therefore justifiable to perform upper GI endoscopy in patients under 60 years presenting with alarm symptoms to exclude significant pathology.

Recommendations for endoscopic surveillance after esophageal atresia repair in adults

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Background: Endoscopic surveillance of adults born with esophageal atresia (EA) is advocated, but the optimal surveillance strategy remains uncertain. In 2011, a prospective screening and surveillance program was initiated in our institution. This study aimed to provide recommendations on appropriate starting age and intervals of endoscopic surveillance in adults with EA.
Methods: Participants of the surveillance program underwent standardized upper endoscopies with biopsies. Surveillance intervals of 3-5 years were applied, depending on age and histopathological results. Patient's age and time to development of (pre)malignant lesions were calculated.
Results: A total of 391 endoscopies were performed in 271 patients with EA (55% male; median age at initial endoscopy 26.7 (range 15.6-68.5) years; colon interposition n=17). Barrett's esophagus (BE) was found in 19 (7%) patients (median age 32.3 (17.8-56.0) years). The youngest patient with a clinically relevant BE was 20.9 years. Follow-up endoscopies were performed in 108 patients (40%; median follow-up time 4.6 years). During surveillance, four patients developed BE but no dysplasia or cancer was found. One 45-year-old woman with a colon interposition developed an adenoma with high-grade dysplasia which was radically removed. Two new cases of esophageal carcinoma were diagnosed in patients (55 and 66 years old) who were not under surveillance. One of them had been curatively treated for esophageal carcinoma 13 years ago.
Conclusion: This study underlines the importance of standardized endoscopic surveillance for all adults with EA, including those with a colon interposition. Although the yield of new cases of BE warrants surveillance endoscopies, our findings justify to start screening at the age of 20 years. Up to the age of 40 years a surveillance interval of 10 years appeared to be safe. Endoscopic surveillance may also be warranted for patients after curative esophageal cancer treatment.

Integrated frame informativeness assessment algorithm for Barrett's neoplasia.

J.B. Jukema[1], F. Mammadl[2], T. Boers[2], M.R. Jong[1], J.A. van der Putten[2], K.N. Fockens[1], A.J. de Groof[1], P.H.N. de With[2], F. van der Sommen[2], J.J.G.H.M Bergman[1] [1]Dept. of Gastroenterology and Hepatology, Amsterdam University Medical Centers, Amsterdam, The Netherlands.[2]Video Coding and Architectures group, Eindhoven University of Technology, Eindhoven, The Netherlands.

Background: Computer-aided detection (CAD) systems are generally trained and tested in-silico on strictly curated imagery. Real-time use of CAD systems will provide the system with non-informative (NI) frames, i.e. frames of suboptimal quality because of motion blur, presence of blood or mucus, or overexposure of light. For optimal in-vivo performance, CAD systems should be able to filter and discard these frames (i.e. real-time frame informative assessment (FIA)). FIA, however, may compromise real-time application of CADs because it consumes time and computational power. Our aims were to assess the amount of NI-frames in high-quality BE pullback videos and to develop an efficient combination of FIA and CAD.
Methods: We constructed a single network with two parallel branches after shared feature extraction: one branch for FIA and one branch for CAD of early Barrett's esophagus (BE) neoplasia. For the CAD branch, we used a previously published ResNet inspired algorithm, validated for BE neoplasia detection. The FIA branch was trained using prospectively collected pullback videos recorded by an dedicated expert endoscopist. The pullbacks were split into a training set and test set (75%-25%). From all videos, five frames per second (fps) were extracted and labelled by an expert as either "informative" or "non-informative".
Results: A total of 86 pullbacks resulted in 22,163 video frames. The expert labelled 17.2% of these frames as NI. The training dataset contained 13,963 informative and 2,900 NI-frames. The test set contained 4,317 informative and 983 NI-frames. The FIA labelled 18.5% of the frames as NI. The accuracy, sensitivity, and specificity for detecting NI-frames were 92%, 71% and 97% respectively. The combined algorithm (with FIA and CAD running in parallel) had an execution speed of 200 fps, which is almost comparable to the execution speed of the CAD system (210 fps). Using a traditional sequential approach (first FIA and then CAD) had an execution speed of 109 fps.
Conclusion: In this set of highly-selected and optimized pullback videos, approximately one fifth of all frames were found to be NI. We developed a deep learning FIA system which effectively differentiates informative from NI-frames. Running FIA in parallel to the detection of early neoplasia almost doubled the execution speed. Furthermore, the shared feature extraction indicates that relevant features extracted by deep learning for FIA significantly overlap with relevant features for detecting neoplasia. We believe that this overlap likely holds for other CAD applications and that future Integration of FIA and CAD algorithms should use a parallel approach with shared feature extraction.

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Focal cryoballoon ablation with 8sec dose has similar efficacy as 10sec for treatment of Barrett's esophagus related neoplasia

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Background: Focal cryoballoon ablation (FCBA), mostly performed using 10s ablations, is currently investigated for treatment of Barrett's esophagus (BE) related neoplasia in a prospective, European multicenter study (EURO-Coldplay; NTR NL7253). After inclusion of 28/107 patients, the initial dose of 10s was lowered to 8s, aiming at improving safety while maintaining efficacy. For the current study, we compared the efficacy and safety of single FCBA treatment with 10s versus 8s in patients with limited BE (C≤2/M≤5).
Methods: All 28 patients treated with 10s in the EURO-Coldplay study were compared with the first 28 patients treated with the lowered dose of 8s. All FCBA treatments were performed by experienced, trained endoscopists in 7 Barrett referral centers. The gastroesophageal junction was treated circumferentially followed by all visible BE using side-by-side ablations. To assess efficacy and safety, 2 independent expert adjudicators, blinded for treating endoscopist and dosages, compared pre- and post-treatment images and videos in a random order. Outcomes included mean BE surface regression after 1 FCBA treatment, stricture rates, and esophageal scarring. In case of >30% difference between the 2 readings for BE surface regression, a third adjudicator additionally reviewed all images, and the median of 3 readings was used.
Results: We included 56 patients (10s n=28, 8s n=28) with a median BE length of C0M2 containing low-grade dysplasia (29%), high-grade dysplasia (32%) or early cancer (39%) as worst baseline histology. Prior to FCBA, endoscopic resection was performed in 36/56 (64%). FCBA was technically successful in 27/28 (96%) patients for both cohorts. In 1 patient (8s) representative photos were missing and in 2 patients (10s n=1, 8s n=1) BE surface regression was not assessable due to poor quality of images. The median BE surface regression after single FCBA was not significantly different for 10s versus 8s (86% and 88% resp.; p=0.70). In the 10s cohort, 5/27 (19%) patients developed a stricture requiring dilation (median 1 dilation, range 1-8) as compared to 4/27 (15%) in the 8s cohort (median 2 dilations, range 1-3; p=1.00). One patient in the 10s cohort needed more than 5 dilations. Strictures not requiring dilation were more often seen in the 10s (30%, 8/27) than in the 8s group (11%, 3/27; p=0.18). The rate of esophageal scarring as scored by the adjudicators was similar between the groups (10s 74% vs. 8s 73%; p=1.00).
Conclusion: In patients with limited BE, single-session FCBA with 8s has shown similar efficacy as compared to 10s, and may theoretically result in less and less severe strictures. Therefore, we suggest to use 8s as the standard dose for FCBA.

Transcatheter aortic valve replacement effectively reduces gastrointestinal bleeding due to angiodysplasias in patients with Heyde syndrome

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Background: Heyde syndrome is the co-occurrence of aortic stenosis and Gastrointestinal Angiodysplasias (GIADs). Surgical Aortic Valve Replacement (SAVR) reduces bleeding episodes in Heyde syndrome, but the benefit of Transcatheter Aortic Valve Replacement (TAVR) is unknown. We assessed the effect of TAVR on GIAD-related bleeding episodes in a cohort of patients with Heyde syndrome.
Methods: We retrospectively analysed all patients who underwent TAVR in one Dutch academic hospital between December 2008 and April 2020. We selected patients diagnosed with GIADs or who suffered from gastrointestinal bleeding episodes of unknown aetiology prior to TAVR. The primary outcome was the proportion of patients with Heyde syndrome without gastrointestinal bleeding episodes in the first year after TAVR. Bleeding episodes were scored according to the Bleeding Academic Research Consortium (BARC) criteria. Secondary outcomes were the reduction in bleeding episodes and corresponding healthcare utilization, and factors that influenced the cessation of bleeding.
Results: Of the 1111 patients who underwent TAVR, we identified 70 patients with Heyde syndrome (prevalence: 6.3%; 95% CI, 5.0% – 7.9%). Of these patients, 44 were diagnosed with GIADs using endoscopy. The other 26 patients had gastrointestinal bleeding episodes, but did not undergo complete endoscopic evaluation (often lacking small bowel assessment). After TAVR, 35 patients (50%) were free of gastrointestinal bleeding episodes and 9 additional patients only experienced periprocedural (≤ 72 hours after TAVR) bleeding episodes. Overall, 44 out of 70 patients met with our primary outcome threshold (63%; 95% CI, 51% – 73%). The mean number of bleeding episodes decreased from 3.0 (95% CI, 2.2 – 3.8) to 1.2 (95% CI, 0.7 – 1.8), (P < 0.001). Haemoglobin levels increased, which was associated with a significant reduction in red blood cell transfusions, intravenous iron infusions, hospital admissions, and endoscopic procedures. Patients with a higher grade of paravalvular leakage had an increased risk of gastrointestinal bleeding episodes after TAVR (Odds Ratio: 3.7; 95% CI, 1.4 – 9.9; P = 0.010).
Conclusion: Heyde syndrome is frequently present in patients undergoing TAVR. TAVR significantly reduces the number of gastrointestinal bleeding episodes in these patients. However, paravalvular leakage, a frequent complication of TAVR, limits the benefit of this treatment modality.

New classification for adverse events in gastrointestinal endoscopy: the AGREE classification

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Background: Uniform evaluation of adverse events (AEs) is essential to assess the safety of procedures and enable comparisons of their performance. We propose a novel classification system for Adverse events in GastRointEstinal Endoscopy (AGREE), based on a widely accepted surgical tool.
Methods: The Clavien-Dindo classification for surgical AEs was adapted for AEs in endoscopy.[1] The AGREE classification consisted of 5 different grades (I-V), based on the type of therapy required to treat the AEs. To validate the new classification, we assessed if the severity of AEs, as perceived by endoscopists, endoscopy nurses and patients, corresponded with the severity grading used in the AGREE classification. We additionally assessed the correlation between the AGREE classification and the American Society of Gastrointestinal Endoscopy (ASGE) classification, using data of AEs recorded in one academic hospital between January 2016 and November 2020. The acceptability of the AGREE classification was evaluated through a questionnaire sent to 84 expert endoscopists, from 29 countries located on 5 continents. These expert endoscopists were selected based on their involvement in developing endoscopy guidelines or active participation in expert meetings in the past.
Results: The perception of endoscopists, endoscopy nurses and patients corresponded with the severity grading of the AGREE classification in 80% of the cases. The AGREE classification significantly correlated with the ASGE classification (rho: 0.760), based on 436 AEs recorded during the study period. In total, 57/84 experts completed a questionnaire regarding the acceptability of the AGREE classification. The majority of clinical case presentations (84%) were correctly graded according to the AGREE classification. The experts consulted considered the AGREE classification as simple (86%), reproducible (98%), logical (98%) and useful (96%).
Conclusion: The AGREE classification constitutes a simple and reproducible approach to the assessment of gastrointestinal AEs. Broad implementation of the AGREE classification may facilitate the evaluation of AEs in gastrointestinal endoscopy across different disciplines, endoscopy services and countries. This will strengthen and standardise the reporting of AEs, quality assurance, and use of comparative data in literature.

Urgent endoscopic ultrasound-guided ERC in predicted severe acute biliary pancreatitis (APEC-2): a multicenter prospective study

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Background: In patients with predicted severe acute biliary pancreatitis, early endoscopic retrograde cholangiography (ERC) withendoscopic sphincterotomy (ES) may ameliorate the disease course. The multicentre randomized APEC trial however did not show a benefit of early ERC with ES as compared to conservative treatment (Lancet 2020). Endoscopic Ultrasound (EUS) is a highly sensitive diagnostic tool to detect CBD stones or sludge. EUS allows physicians to perform ERC with ES only in patients with confirmed stones or sludge who may potentially benefit from the procedure.
Methods: A multicenter, prospective study was performed, thus adding a third treatment arm to the original APEC trial. Patients with predicted severe biliary pancreatitis (APACHE II score ≥8, Imrie score ≥3, or C-reactive protein concentration >150 mg/L), without cholangitis were included. Patients underwent urgent EUS, followed by ERC with ES in case of proven CBD stones or biliary sludge, within 24 hours after hospital presentation. Outcomes were compared with the conservative treatment group of the APEC trial. The primary endpoint was a composite of mortality or major complications within 6 months of inclusion.
Results: Between August 2017 and August 2019, 86 patients underwent urgent EUS-guided ERC with ES. Four patients were excluded from analysis; 2 withdrew informed consent and 2 had cholangitis at baseline. In 80 patients (98%), EUS was performed at a median of 21 hours (IQR 17-23) after hospital presentation and at a median of 29 hours (IQR 23-41) after start of symptoms. In 2 patients, EUS and ERC were cancelled by the treating physician after inclusion, due to organ failure. Presence of gallstones or sludge in the biliary tract was confirmed by EUS in 48 patients (60%), all of whom underwent immediate ERC with ES. Biliary cannulation was not achieved in 5 patients. In 42 patients (88%), complete gallstone extraction was achieved at the initial ERC and in 1 patient stone extraction was incomplete and a stent was placed. The primary endpoint occurred in 33/82 patients (40%) in the urgent EUS group and in 50/113 patients (44%) in the conservative treatment group (risk ratio [RR] 0.91, 95% CI 0.65–1.27; p=.58). Adverse events were reported in 62/82 patients (76%) in the EUS group versus 90/113 patients (80%) in the conservative treatment group.
Conclusion: In patients with predicted severe acute biliary pancreatitis without cholangitis, urgent EUS-guided ERC with ES within 24 hours after presentation at the emergency department did not reduce the composite endpoint of major complications or mortality, as compared with conservative treatment.

Validation of the PBC-40 and a description of patient perspective in a Dutch population of Primary Biliary Cholangitis

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Background: Better understanding of patient expectations regarding their disease prognosis and management could improve patient care and counseling. In this study we evaluated patients with primary biliary cholangitis (PBC) and their perspectives on treatment and prognosis in relation to objective disease parameters and the health related quality of life (HRQol).
Methods: Patients with PBC registered at the Dutch Liver Patient Association or the Erasmus MC were sent questionnaires in August 2020 to obtain self-reported data regarding treatment status, need for additional therapy, and expected survival ('impaired', 'equal' or 'superior') compared to their peers. The HRQoL was assessed by the Dutch PBC-40, an 1-5 Likert scale based questionnaire with six domains (symptoms, fatigue, itch, cognitive, emotional, social). Higher scores imply an impaired HRQoL. Patients consented to medical chart review to collect objective disease parameters in order to assess their survival free of liver transplantation (based on the GLOBE score) and need for further treatment (alkaline phosphatase (ALP) >1.67x upper limit of normal (ULN) and/or bilirubin >1.0x ULN).
Results: In total, 177 patients responded. The mean (SD) age was 61.1 (9.9) years, 164 (92.7%) were female and 169 (95.5%) reported the use of ursodeoxycholic acid (UDCA) with a median UDCA dose of 13.9 (IQR 11.8 – 15.4) mg/kg/day. Use of BZF and/or OCA was reported by 38 (21.5%) patients. A lifelong need for UDCA was expected by 162 (95.9%) patients. The ALP was >1.67 xULN and/or the bilirubin was >1.0 xULN in 52 (31.0%) of the 168 patients with available laboratory results. Of these patients, 35 (67.3%) did not consider themselves in need of additional therapy. The GLOBE score could be calculated in 154 patients. Predicted survival was lower compared to the matched general population in 30 (19.5%) patients, among whom 12 (40.0%) expected their survival to be similar to their peers. Of the 124 (80.5%) patients with a normal survival based on the GLOBE score, 42 (33.9%) expected to have impaired survival. There was no statistically significant difference in PBC-40 scores for patients with an impaired versus a normal predicted survival according to the GLOBE score. However, patients who expected an impaired prognosis compared to their peers, reported significantly higher PBC-40 scores in all domains (p<0.05), except for itch (p=0.10).
Conclusion: Patients are generally aware of the need for lifelong UDCA therapy. There are discrepancies between patients' perspectives and their objective disease parameters with respect to the need for additional therapy and prognosis. This implies a need for better patient guidance in PBC care.

Spleen stiffness correlates with portal venous pressure in liver transplant recipients with or without signs of portal hypertension

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Background: Spleen stiffness measurement (SSM) is an ultrasound-based elastography technique which correlates with hepatic venous pressure gradient measurement. In liver transplant (LT) recipients with preexisting portal hypertension (PHT) normalization of portal pressure is observed with SSM. The value of SSM in patients with persistent PHT after LT is unknown.
Methods: We investigated the applicability of SSM in evaluating portal pressure in LT recipients. Between January and April 2021 we prospectively performed SSM using the FibroScan 630 device (EchoSens©) with a dedicated SSM module and 100Hz probe in patients visiting the Erasmus MC outpatient clinic. Preceding SSM a same-session abdominal ultrasound was performed using the Philips© EPIQ 7 ultrasound system. We collected patient characteristics, laboratory data and previous imaging results. Signs suggesting pre-LT PHT included platelets <150 x10^9/L, varices, portal hypertensive gastropathy, hepatic encephalopathy, ascites, collaterals, recanalization umbilical vein and splenomegaly. Diagnosis of PHT at patient visit was based on the same-session abdominal ultrasound and was left at the discretion of the ultrasonographist.
Results: We included 30 LT recipients (male 80%, age 53 yrs [34-66], BMI 27 kg/m^2 [21-29], hypertension 47%, full size graft 83%, liver graft cirrhosis 7%, median spleen size 15 cm [13-17]). Most common native liver disease etiology included one or more of the following: hepatocellular carcinoma (30%), fatty liver disease (23%) and alcohol (20%). Median time since LT was 10 months [4-37]. Prior to LT 83% (n=25) of patients had one or more signs of PHT. At patient visit, SSM was technically successful in 93% (n=28). Median spleen stiffness was 31 kPa [21-50 kPa]. During SSM evaluation, 6 out of 25 patients (24%) with pre-LT signs of PHT persistently showed an image suspect of PHT during same-session ultrasound (all had splenomegaly with either ascites (50%) or collaterals (50%)). In these six patients, median SSM was 75 kPa [52-88 kPa]. In contrast, patients with pre-LT PHT but without PHT at follow-up ultrasound (n=19) had a median SSM of 25 kPa [IQR 20-34 kPa]. Patients without pre-LT PHT (n= 5) had a median SSM of 24 kPa [IQR 20-36 kPa]. The ROC curve of SSM in discriminating between absence and presence of PHT on same-session ultrasound was 0.97 (95% confidence interval 0.91-1.00). A spleen stiffness cutoff value of 39 kPa was associated with a sensitivity of 100% and specificity of 90% for presence of PHT on ultrasound.
Conclusion: SSM was technically successful in almost all LT recipients. SSM adds an accurate non-invasive tool to assess portal venous pressure in these patients in addition to abdominal ultrasound.

Polycystic liver disease is frequently complicated by abdominal wall hernias and associated with previous abdominal surgery and higher liver volume

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Background: Polycystic liver disease (PLD) is characterized by growth of hepatic cysts, which can lead to hepatomegaly. Abdominal wall hernia (AWH) may be seen as a result the hepatomegaly in PLD. The aim of this study was to assess its prevalence and identify risk factors associated with AWHs in a large PLD population.
Methods: We established a cohort consisting of PLD patients with at least 1 CT and/or MRI scan with complete visualization of the abdominal wall. PLD was diagnosed as > 10 hepatic cysts. AWH presence was evaluated independently by two researchers. Any disagreement was resolved by arbitrage by a third independent researcher. We collected clinical information age, sex, BMI, liver volume, previous abdominal surgery, and smoking. Mann-Whitney U test was used for continuous variables and Chi-squared tests for nominal variables.
Results: We included 486 patients (median age 55.6 years; 18.9% male). AWH was present in 37.4% (n=182) of our cohort. The following hernia types: 1.6% epigastric, 25.7% umbilical, 3.0% cicatricial, 14.0% inguinal and 1.0% other hernias. We identified multiple hernias in 16.5% (n=30) patients. AWH patients were more often male (24.7% vs 15.5%; p=0.012) and underwent abdominal surgery more often (61.7 vs 46.0%; p<0.001) compared to those without AWH. In a subgroup of patients with known total liver volume (n=170) AWH patients had considerably larger total liver volumes (4718 vs 3854 ml; p=0.001).
Conclusion: Abdominal wall hernias are very common in patients with polycystic liver disease, with a predominance for umbilical hernias. Previous abdominal surgery and higher total liver volume are clear risk factors.

Liver transplantation for acute-on-chronic liver failure

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Background: Acute-on-chronic liver failure (ACLF) is a syndrome that comprises acute deterioration of liver cirrhosis and the development of extrahepatic organ failures. Outcomes in ACLF patients undergoing liver transplantation are increasingly reported. Because of donor organ shortage, survival and posttransplant outcomes in ACLF should be acceptable. The aim of this study was to examine one-year survival and posttransplant outcomes in ACLF patients and to assess which factors are associated with these outcomes.
Methods: Patients with a history of liver cirrhosis that were transplanted in our center between January 2015 and November 2020 were retrospectively assessed if they had laboratory model for end-stage liver disease (MELD) scores of 25 and higher when listed or at transplantation. Inclusion criteria were cirrhosis as the indication for transplantation and ACLF before transplantation according to the definition of the EF-CLIF consortium. The primary outcome was one-year survival.
Results: Based on the selection criteria 56 patients were screened and 27 were included. Overall survival probability after one year was 81% (95% CI 66%-96%). At transplantation, in three patients ACLF had resolved, 11 patients had moderate ACLF (grade 1 or 2) and 13 patients had severe ACLF (grade 3). Patients with severe ACLF had more renal failure (p = 0.031), more circulatory failure (p < 0.001) and higher laboratory MELD scores (p < 0.001). Survival probability in the moderate ACLF group was 82% (95% CI 59%-100%) compared to 76% (95% CI 51%-100%) in the severe ACLF group (log rank test = 0.678). There were no significant differences in overall complication rates for patients with moderate and severe ACLF.
Conclusion: In conclusion, liver transplantation is feasible in ACLF patients with good one-year survival, even for the sickest ACLF patients.

Loss-of-response and immunogenicity following immunomodulator withdrawal from anti-TNF combination therapy: a large retrospective cohort study

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Background: Combination therapy with anti-TNF compounds and immunomodulators (IMM; thiopurine or methotrexate) is superior to IMM or anti-TNF monotherapy in patients with inflammatory bowel disease (IBD). IMMs are frequently discontinued during the maintenance phase to mitigate the risk of adverse events, but long-term consequences of this practice are not well studied. We explored the real-world outcomes after IMM discontinuation, including loss-of-response (LOR; defined as anti-TNF withdrawal due to disease activity), dose escalations, immunogenicity and trough levels.
Methods: This was a multicenter, retrospective cohort study in a general hospital and a tertiary referral center. We included adult patients with IBD, treated >4 months with infliximab (IFX) or adalimumab (ADA) and an IMM at baseline between 2011-2019. The IMM had to be started within 30 days of anti-TNF initiation, or continued for >30 days in case of prior IMM monotherapy. Adjusted hazards rates (aHR) were calculated using mixed-effects Cox regression analysis with time-varying covariates, accounting for follow-up prior to and after IMM cessation. We adjusted for sex, age, BMI, smoking, Crohn's disease (CD) vs ulcerative colitis (UC), disease duration, primary sclerosing cholangitis, rheumatological comorbidity, ADA vs IFX, and prior anti-TNF exposure.
Results: We included 615 episodes of combination therapy (543 individual patients; CD, n=382, 70%). The IMM was discontinued in 296 (48%) episodes after a median of 0.9 (IQR: 0.6 – 2.1) years, at which point 252 (85%) patients were in clinical remission. IMM withdrawal was performed as part of a de-escalation strategy (n=158, 53%), for intolerance (n=86, 29%) or for miscellaneous reasons (n=52, 18%). During a median follow-up of 1.7 (IQR 0.8 – 3.5) years after IMM withdrawal, 46 (16%) patients experienced LOR, 79 (32%) required dose-escalation and 31 (10.3%) developed anti-drug antibodies. Compared to IMM continuation, withdrawal did not significantly increase the risk of LOR (aHR 1.10, 95%CI: 0.74 – 1.64), but more patients required dose escalations (aHR 1.42, 95%CI 1.02 – 1.97) or developed anti-drug antibodies (aHR 2.22, 95%CI 1.21 – 4.08). Among patients who stopped the IMM, clinical remission at IMM withdrawal was the only predictor of LOR (aHR 0.48, 95%CI 0.23 – 0.99), while higher BMI (aHR 1.09, 95%CI 1.01 – 1.17) and shorter duration of combination therapy (aHR 0.57 per year, 95%CI 0.33 – 0.96) increased the risk of immunogenicity. IFX, but not ADA, trough levels decreased significantly after IMM withdrawal.
Conclusion: Withdrawal of immunomodulators is not associated with higher risk of LOR, but does increase the risk of dose-escalation and unfavorable pharmacokinetics.

Intravenous administration of fluorescently labelled vedolizumab to gain insight in local drug distribution and pharmacodynamics in inflammatory bowel disease during endoscopy

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Background: Ulcerative colitis (UC) and Crohn's disease (CD) are two main types of inflammatory bowel disease (IBD). Vedolizumab is a monoclonal antibody used for the treatment of IBD. Vedolizumab binds to integrin α4β7 to inhibit the trafficking of T-lymphocytes from the blood to the gut during an inflammatory response. Up to 60% of patients treated with vedolizumab experience primary or secondary non-response. Data for local vedolizumab pharmacokinetics and -dynamics in gut tissue are lacking. We investigated the feasibility of assessing the local distribution of fluorescently labelled vedolizumab after intravenous administration in gut tissue of IBD patients.
Methods: Vedolizumab (Entyvio, Takeda Pharma) was conjugated to IRDye 800CW under cGMP conditions to yield clinical grade vedolizumab-800CW. In this open-label dose-escalation trial, patients with IBD who were naïve to vedolizumab treatment were included. IBD patients received tracer doses of either 0.0 mg, 4.5 mg, 15.0 mg or 15.0 mg + 75 mg unlabelled "blocking dose" 3 days before routine coloscopy. Tracer signal in vivo was assessed by fiber-based wide-field fluorescence molecular endoscopy (FME) and in-vivo fluorescence spectroscopy of both healthy, mildly inflamed, or severely inflamed tissue. All assessed tissue was biopsied for ex-vivo examination by Odyssey CLx, fluorescence microscopy and ex-vivo spectroscopy.
Results: 23 patients with an established diagnosis of UC (N=12) or CD (N=11) underwent FME. Our dose-finding showed a dose-dependent increase in signal of vedolizumab-800CW in inflamed tissue. Interestingly, vedolizumab-800CW uptake was also correlated to the severity of the disease as assessed by endoscopic scoring with intensities of 0,0490 in severe, 0,0257 in moderate and 0,0197 in the healthy tissue of the 15 mg cohort. Saturation levels of vedolizumab-800CW were not reached when adding 75 mg of unlabelled vedolizumab. Control experiments in patients who did not receive vedolizumab-800CW showed negligible fluorescence signals in both healthy tissue (0,0067), mildly inflamed (0,0110) and severely inflamed tissue (0,0067), supporting the specificity of these results. Ex vivo examination of biopsy material by both Odyssey and fluorescence microscopy precisely revealed the localization of tracer in areas of inflamed mucosa.
Conclusion: These preliminary results demonstrate for the first time that FME can be used to get insight into the distribution of vedolizumab-800CW and to elucidate local drug concentrations and target engagement at the mucosal level in individual patients. An FME procedure could thereby provide unique information for future drug development in IBD or could be used to predict therapy response.

Real-world effectiveness of thiopurine monotherapy in Crohn's disease: is there still a place for thiopurines in the biological era?

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Background: In current guidelines, thiopurines are still recommended as first-line maintenance therapy for patients with Crohn's disease (CD). Due to their lack of immunogenicity, oral administration route and low costs, thiopurines are an attractive first-line treatment option. However, in recent studies the position of thiopurine monotherapy in CD is questioned as a result of lower overall effectiveness rates compared to ulcerative colitis. Real-world long-term effectiveness data substantiating the use and position of thiopurines in CD management remain sparse. We assessed long-term effectiveness of thiopurine monotherapy in CD using the population-based IBD South-Limburg (IBDSL) cohort.
Methods: All CD patients in the IBDSL cohort starting thiopurine monotherapy as first-line maintenance therapy between 1991-2014 were included. Thiopurine monotherapy was defined effective if either: (1) no escalation to biological treatment, (2) no course of corticosteroids, (3) no resective surgery or, (4) no hospitalization for active disease was required whilst on thiopurine treatment. Patients with early treatment discontinuation (*i.e.* <3 months) were identified, including reason of discontinuation. Long-term effectiveness was assessed adjusting for differences in follow-up between patients using Kaplan-Meier analysis. Potential risk factors for therapy failure were identified using Cox regression.
Results: In total, 643/1162 (55.3%) CD patients (median follow-up: 8.5 years, IQR 5.0-13.2) received first-line thiopurine monotherapy after a median of 9.7 months (IQR 3.2-31.3) after diagnosis. Therapy was discontinued within three months in 164 patients (25.5%), mainly due to adverse events. Thiopurine monotherapy was effective for the duration of treatment in 229/479 (35.6%) patients, corresponding to estimated effectiveness rates of 64.4%, 44.4% and 31.9% after 1, 5 and 10 years, respectively. No significant difference in effectiveness was observed after stratifying for era of thiopurine initiation (pre-biological <1999 vs. biological ≥1999 era, p=0.56). Factors associated with thiopurine failure were stricturing disease (aHR 1.41, 95%CI 1.01-1.96) and upper GI involvement (aHR 1.52, 95%CI 1.02-2.28) at diagnosis. During follow-up, 40/229 patients with a durable response discontinued treatment due to quiescent disease. Of these, 35 patients (87.5%) remained without treatment 24 months after discontinuation.
Conclusion: Real-world data from this population-based study demonstrate that thiopurine monotherapy remains an effective and durable first-line treatment option for CD, even in the biological era. These results should be considered in the ongoing discussion regarding the postion of thiopurine therapy.

The safety of tioguanine exposure during pregnancy: a case series of seventy-eight pregnancies

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Background: Azathioprine and mercaptopurine exposure during conception and pregnancy seems safe in patients with inflammatory bowel disease (IBD). Its use is not associated with a higher risk of preterm birth or low birthweight. Data on the safety of tioguanine, an alternative thiopurine-derivate, in pregnant IBD patients is limited. In a small case series, tioguanine appeared safe for both mother and fetus. In this study, we describe the teratogenicity and safety of tioguanine during pregnancy in a large group of IBD patients.
Methods: We performed a preliminary analysis of our ongoing multicenter descriptive case series of female IBD patients who were treated with tioguanine at some point during their pregnancy. Data regarding disease and medication history, pregnancy course and neonatal outcomes, such as preterm birth, miscarriage (<16 weeks), stillbirth, birthweight, Apgar scores and congenital abnormalities were collected by the treating physician.
Results: Seventy-eight pregnancies, including three twin pregnancies were collected. Most women (81%) had Crohn's disease and the median age at delivery was 30 years (range 21-42). Tioguanine was used throughout the entire pregnancy in 90% with a median daily dose of 20 mg. Five (6.4%) of these pregnancies resulted in a miscarriage and one (1.3%) in a stillbirth. No congenital abnormalities were reported in all seventy-five children.
In the singleton pregnancies the median birthweight was 3360 gram (IQR 3075-3739, N=65, 4 missing values) with a median gestational age of 39.0 weeks (IQR 38.0 - 40.0, N=65). Five children (7.2%) were born prematurely (<37 weeks). Two of them were born after a spontaneous onset of labor at respectively 33+6 and 35+6 weeks, while in the other three the preterm birth was caregiver initiated due to a placental abruption (32+1 weeks), HELLP syndrome (31+4 weeks) or pre-eclampsia combined with fetal growth restriction (28+6 weeks). Six children (9.4%, N=64, 5 missing values) were born small for gestational age (<10th percentile). In the twin pregnancies, the median birthweight was 2505 gram (IQR 2433.75 – 2761.50, N=6) with a median gestational age of 36+6 weeks. In two of these pregnancies the children were born prematurely and two children (33%, N=6) were born small for gestational age (<10th percentile). Three neonates (4.8%), two born pre-and dysmature and a premature second-born twin, had an Apgar score <7 after 5 minutes.
Conclusion: In this large case-series, tioguanine exposure during pregnancy was not associated with an increased risk of congenital abnormalities, low birthweight or preterm birth in IBD patients. These data support the safe use of tioguanine during pregnancy.

Peripheral blood DNA methylation profiles predict response to Ustekinumab and show stability during both induction and maintenance treatment in Crohn's disease.

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Background: Data from the phase 3 registration trials have shown that Ustekinumab (USTE) induces clinical remission in 53% of moderate-severe CD patients with only 17% achieving mucosal healing at week 44. Prognostic biomarkers that allow prediction of clinical and endoscopic response have not yet been reported. Accumulating evidence suggests that the epigenome, mainly the DNA methylation profile, is associated with certain CD phenotypes and potentially with response to treatment. Here, we performed a longitudinal study investigating prediction of response to Ustekinumab based on the peripheral blood (PB) DNA methylome obtained from CD patients.
Methods: We prospectively recruited adult CD patients that were scheduled to start Ustekinumab treatment for refractory disease. We collected PB prior to treatment during baseline endoscopy (T1, n=30) and at a median of 33 weeks (T2, n=28) into treatment. DNA methylation was measured using the Illumina Infinium Methylation EPIC BeadChip. All patients underwent stringent clinical, biochemical and endoscopic follow-up for 6-12 months. After a mean treatment period of 38 weeks, patients were categorized as responders (R) or non-responders (NR) based on endoscopic evaluation (R= ≥50% reduction in SES-CD score) in combination with steroid-free clinical response (R= ≥3 point drop in HBI or HBI ≤4 AND no systemic steroids) and/or biochemical response (C-reactive protein (CRP) and fecal calprotectin reduction ≥50% OR ≤5 g/mL and fecal calprotectin ≤250 µg/g). To identify response-associated CpG methylation differences between R and NR at baseline, we performed classification analysis using a gradient boosting approach.
Results: We analyzed data of 15 R and 15 NR patients with a median CD duration of 12.5 years (8 - 22). No significant differences in age, sex or smoking were observed between R and NR. Median serum Ustekinumab concentration at T2 was 3.3 (1.7 – 8.7) µg/mL. We identified 63 differentially methylated probes (DMPs) associated with response that in combination predicted response to Ustekinumab with a sensitivity of 0.83, specificity of 0.67 and an AUC of 0.84 (± 0.23). Notably, the mean difference in methylation of these response-associated DMPs did not change significantly between T1 and T2, indicating stability irrespective of inflammatory status or time.
Conclusion: Our results show that the DNA methylome of PB offer an attractive opportunity to predict clinical- and endoscopic response to Ustekinumab. Although independent validation is needed, these observations demonstrate the utility of using DNA methylation as a modality for personalized treatment selection in CD.

Successful dietary therapy in pediatric Crohn's disease corrects compositional dys-biosis by reducing Proteobacteria

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Background: Crohn's disease (CD) is characterized by decreased gut microbiome community richness (dysbiosis); reduced proportions of Bacteroidetes and Firmicutes, and increased of Actino- and Proteobacteria. Nutritional therapy with either Crohn's Disease Exclusion Diet+Partial Enteral Nutrition (CDED+PEN) or Exclusive Enteral Nutrition (EEN) was recently shown to induce equal remission rates and reduce inflammation in mild-to-moderate pediatric CD. This was associated with decreased Proteobacteria and increased Firmicutes using 16S analysis. As dysbiosis has become a key concept in CD pathogenesis, correcting dysbiosis may be an important future treatment goal.
Methods: We aimed to assess if nutritional therapy induced-remission is mediated by correction of dysbiosis when considering the compositional nature of the data in a metagenomics analysis. We analyzed metagenome sequences of 54 pediatric CD patients participating in a prospective clinical trial reaching remission after 6 weeks of nutritional therapy (with CDED+PEN or EEN). Metagenome sequences were compared with 26 healthy controls. We performed differential ranking analysis using multinomial regression implemented in Songbird and used Qurro to visualize differences, using *Bacteroides* as a reference frame. We also assayed fecal short chain fatty acids (SCFA) using gas chromatography coupled with flame ionisation and bile acids (BA) using liquid chromatography coupled to mass spectrometry.
Results: Dietary therapy decreased relative abundance of Proteobacteria and increased Firmicutes at phylum and genera level towards healthy controls. When taking into account the relative abundance together with other features of microbiome compositional data, there was an overall non-significant increase in Firmicutes at week 6(p=0.13) and 12(p=0.37), except for *Oscillospiraceae* (w0 vs w12, p=0.03). However, there was a significant decrease in Proteobacteria at week 6(p=0.02), which was sustained through week 12(p<0.01). The drop in Proteobacteria was mostly driven by ɣ-proteobacteria(p<0.01), namely *Escherichia* genera. Despite the increase in SCFA synthesis pathways, remission samples had no changes in SCFAs. Primary BA significantly decreased with EEN but not with CDED+PEN and secondary BA levels were similar between treatment strategies. Conclusion: Diet-induced remission drives a correction of dysbiosis towards healthy controls, characterized by a drop in Proteobacteria rather than expansion in Firmicutes when studying relative abundance. Our findings contribute to the increasing knowledge on dietary therapy mechanisms and can help optimization of therapies in targeting both microbiome and inflammation to alter progression or recurrence of disease.

Real World Experiences of Switching Patients with Inflammatory Bowel Diseases on Intravenous Vedolizumab Maintenance Treatment to Subcutaneous Vedolizumab

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Background: The aim of this study is to assess efficacy, safety, and pharmacokinetic (PK) profiles of patients with inflammatory bowel diseases (IBD) who switched from intravenous (IV) maintenance treatment to a new subcutaneous (SC) VDZ formulation.
Methods: This is an ongoing open-label, real life, prospective, single centre cohort study with one year follow-up. IBD patients receiving IV VDZ maintenance for >4 months (different dose intervals) were offered to switch treatment to SC VDZ, 108 mg every 2 weeks. Exclusion criteria were pregnancy and the physician's/patient's intent to switch or cease VDZ. Clinical, biochemical and VDZ concentrations were assessed at baseline, 10 weeks afterwards, and at the physician's discretion thereafter. Primary endpoint was the proportion of patients discontinuing SC VDZ. Secondary endpoints included: change in clinical disease activity (Harvey Bradshaw Index (HBI) for Crohn's disease (CD) and Simple Clinical Colitis Activity Index (SCCAI) for ulcerative colitis (UC)), C-reactive protein (CRP), faecal calprotectin (FCP) and VDZ serum concentrations. Values were compared using a Wilcoxon rank or paired t-test, when appropriate.
Results: A total of 106 pts were invited to participate. Sixty patients (40 CD (66.6%), 17 UC (28.4%), 3 IBD unclassified (5.0%)) with a median age of 50 years (IQR=30.25-64 years) and a median IV VDZ treatment duration of 21 months (IQR=12-45) have been switched to SC VDZ, up to date. Another 17 patients are planned to switch to SC VDZ. Twenty-nine patients preferred not to switch to SC VDZ. Baseline median HBI score was 4 (IQR=2-7), median SCCAI score was 1 (IQR=1-3.5), median CRP level was 2.2 mg/L (IQR=1.1-1.4), median FCP level was 44 mg/kg (IQR=15-155), median VDZ trough serum concentration was 17.6 ug/mL (SD=9.2). Four patients (6.7%) were switched back to IV due to injection site reactions (2), moving abroad (1) and fear for needles (1). During follow-up (2 months after switch IQR 1.3-3), mean HBI score was 3.1 (SD=2.8, n=22, p=0.08), mean SCCAI score was 2.2 (SD=2.3, n=11, p=0.36), median CRP level was 1.9 mg/L (IQR=0.8-3.4, n=39 p=0.08), median FCP was 42 mg/kg (IQR=20-107, n=35, p=0.55), mean VDZ concentration was 33.4 ug/mL (SD=12.4, n=30, p<0.01). Reported AEs included arthralgia (3), injection site reactions (2), (increase of) skin lesions (2), fatigue (2), vomiting (1), loose stools (1). One patient experienced an endoscopically confirmed flare of CD, but continued SC VDZ treatment.
Conclusion: VDZ concentrations were significantly higher following switch. At present, switch from IV to SC VDZ appears to be safe and effective, but further follow-up data are being collected.

Cessation of Anti-Tumour Necrosis Factor Therapy in Patients with Perianal Fistulizing Crohn's Disease: Individual Patient Data Meta-Analysis of 323 patients from 12 studies

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Background: The risk of relapse after anti-tumour necrosis factor [TNF] therapy cessation in Crohn's disease [CD] patients with perianal fistulas is unclear. We aimed to assess the risk of relapse after anti-TNF cessation in a large cohort and to identify risk factors.
Methods: A systemic literature search was conducted to identify cohort studies reporting on the incidence of relapse after cessation of anti-TNF therapy in CD patients. Individual patient data [IPD] were requested from the original study cohorts. Inclusion criteria for IPD-meta-analysis (IPD-MA) included age ≥ 18 years, perianal fistulizing CD as indication for start of anti-TNF therapy, minimal treatment duration ≥3 doses, and remission of luminal and perianal CD at cessation of anti-TNF therapy. Primary outcome was CD relapse [either perianal or luminal]. Perianal fistula relapse was defined as recurrence of draining perianal fistula related to previous or new fistula tracks, or abscess. Luminal relapse was defined as a clinical, biochemical, endoscopic, or radiological relapse requiring treatment or dose optimization of IBD medication or surgery. In a secondary analysis, risk factors associated with relapse were assessed using multivariate logistic regression analysis.
Results: A total of 307 patients from 12 studies in 9 countries were included in this IPD-MA. The median duration of anti-TNF treatment prior to therapy cessation was 14 months [IQR 6.1 – 29.9]. In 272/307 patients [89%] anti-TNF therapy was started for active perianal fistula and in 34 [11%] for both active perianal fistula and luminal CD. 169 patients [55%] developed a relapse [either perianal or luminal] after a median follow-up after cessation of 25 months [IQR 12 – 54]. Overall cumulative incidence of relapse was 31% and 43% at 1 and 2 years after anti-TNF cessation. Risk factor for CD relapse include upper GI involvement (L4) [HR 1.9], whereas older age [A3 vs A1, HR 0.48] and continuation of concomitant immunomodulators [HR 0.62] were protective factors. For a subgroup of patients with active perianal fistula and in luminal remission at start of anti-TNF, the cumulative incidence relapse rates were 25% and 43% at 1 and 2 years. No considerable differences in risk factors were found within this subgroup regarding risk of recurrence. Of the 179 patients who relapsed, 104 were retreated with anti-TNF with a response rate of 85%.
Conclusion: According to this IPD-MA, approximately two-thirds of CD patients with perianal fistula remain in remission with regard to fistulizing and luminal disease during 2 years after cessation of anti-TNF therapy. Further risk stratification based on perianal fistula characteristics is required.

Real-world impact of biological therapies on work impairment and quality of life in inflammatory bowel disease patients

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Background: Randomised controlled trials have reported improvement of work productivity and activity impairment (WPAI) as well as quality of life in biological-treated inflammatory bowel disease (IBD) patients. However, data beyond clinical trials are limited.
Methods: This multicentre prospective cohort study evaluated the effect of initiating biological or small molecule therapy on work impairment in IBD patients. Subjects completed the WPAI questionnaire and Short IBD questionnaire (SIBDQ) at biological therapy initiation and at week 26. Clinical disease activity was assessed using the Harvey Bradshaw Index and Simple Clinical Colitis Activity Index. Biochemical disease activity was assessed using C-reactive protein and faecal calprotectin. Data are presented as mean ± standard deviation.
Results: In total, 156 IBD patients were included for analysis (median age 40 years, 55% male, 55% Crohn's disease). Of these patients, 28% started infliximab, 33% adalimumab, 19% vedolizumab, 18% ustekinumab, 1% tofacitinib and 1% golimumab. Concomitant medication use at baseline included 28% prednisone, 12% budesonide, 34% mesalamine, and 46% immunomodulator. At baseline, 58% had clinical disease activity and 58% had biochemical disease activity. In our cohort, 111 (71%) were employed and 17 (11%) patients reported partial or full occupational disability. The mean total work impairment at baseline was 52% ± 36%. During follow-up, 7 patients lost their job and 8 patients started employment. For the entire cohort, improvements in all WPAI domains were observed: mean 11%-points decrease in missed working hours, 4%-points decrease in impairment while working, 15%-points decrease in total work impairment and 15%-points decrease in total activity impairment. Parallel improvements were seen in SIBDQ scores (mean improvement 7.6 ± 11.3). At week 26, 66 (42%) patients achieved the minimal clinical important difference in total work impairment (improvement ≥7%-points). Patients with clinical disease activity at baseline and clinical response to the biological (n=32) showed a larger improvement in total work impairment compared with other subjects (n=86) (mean difference 29%-points versus 10%-points; p=0.036). Similarly, these patients showed greater improvement in SIBDQ scores compared to other subjects (mean 13.8 versus 5.4, respectively; p<0.001).
Conclusion: IBD patients experienced substantial work impairment prior to initiating biological treatment. Improved work impairment scores were seen after initiation of biological therapy and patients with clinical response showed even greater improvements. These results underline the importance of IBD disease control to improve work productivity and participation.

Antroduodenal motility patterns in patients with gastroparesis: differences by etiology

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Background: Gastroparesis (GP) is a common gastrointestinal disorder associated with significant morbidity and health care costs. GP patients form a heterogeneous population with diverse etiology and treatment is often challenging due to a poorly understood underlying pathophysiology. The aim of this study is to assess antroduodenal motility patterns among the different GP etiologies. Methods: In this retrospective analysis, we reviewed antroduodenal manometry (ADM) recordings and medical records of patients with confirmed GP between 2009-2019. ADM was performed using a 36-channel high-resolution manometry catheter. After 30 minutes recording in fasting conditions, patients were given a standardized meal. After the ingestion of the meal, data were recorded for 6 hours, during which patients were not allowed to eat or drink. ADM measurements were evaluated for antral and duodenal amplitudes (mmHg) and motility index (MI), fed period duration (min), number and duration of phase III contractions and migrating motor complexes (MMCs), and presence of neuropathic patterns (i.e. bursts, retrograde peristalsis, clustered contractions, absence of phase III contractions).
Results: A total of 167 GP-patients (142 women, median age 45 [31-57]) with confirmed delayed gastric emptying were included. The following GP etiologies were identified: idiopathic n= 101; post-surgery n= 36; diabetes n= 30. A lower percentage of female patients was found in the post-surgery GP-group compared to the other groups (p < 0.01). No differences were found between GP-groups regarding age, BMI, gastric half emptying time, antral and duodenal amplitudes, and MI. Fed period duration was significantly longer in idiopathic (p < 0.01) and diabetic GP-patients (p < 0.05) compared to post-surgery GP-patients. Furthermore, the number and duration of phase III contractions, and the number of MMCs was significantly lower in idiopathic and diabetic patients compared to post-surgery GP-patients (p < 0.01). Likewise, absence of MMCs during 6-hr recording were more often observed in idiopathic and diabetes GP-patients compared to post-surgery GP-patients (resp. p < 0.01 and p < 0.05). No significant differences between GP-subgroups were found regarding the presence of neuropathic patterns.
Conclusion: Antroduodenal motility patterns are different between GP etiologies. A disease severity spectrum was identified ranging from post-surgery GP with milder dysmotility patterns to diabetic and idiopathic GP with more severe dysmotility patterns. These differences suggest different patho-physiologic pathways and possible targeted treatment options.

Anticoagulants decrease the risk for catheter-related thrombosis in home parenteral nutrition patients

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Background: Catheter-related venous thrombosis (CRVT) is a severe complication of home parental nutrition (HPN). Although primary prevention of CRVT is crucial, there is no consensus on anticoagulant use to prevent these adversities. The most recent updated ESPEN guidelines for chronical intestinal failure does not recommend thrombosis prophylaxis as primary prevention. The aim of this study was to compare CRVT risk in HPN patients in the presence or absence of anticoagulants, and to identify risk factors for CRVTs.
Methods: This retrospective cohort study comprised adult HPN patients with a central venous access device (CVAD) between 2010 and 2020 who were treated at our national HPN referral centre. Subcutaneously tunnelled central venous catheters and subcutaneous ports were included. Primary outcome was the CRVT risk of HPN patients with anticoagulants compared to those without anti-coagulants. Multi-level binary logistic regression outcomes are presented as odds ratios (OR) with 95% confidence intervals (95%CI).
Results: Overall, 1188 CVADs in 389 patients were included (601.246 CVAD days). Anticoagulants were used in 408 CVADs. In total 129 CRVTs occurred in 129 CVADs of 92 patients, resulting in 0.21 CRVTs/1000 CVAD days (CI95% 0.18-0.25). Anticoagulant use was associated with a decreased risk for CRVT (adjusted OR 0.53, 95% CI: 0.31-0.90). A left-sided CVAD insertion (adjusted OR 2.04, 95% CI: 1.37-3.04), a previous CVAD thrombosis (adjusted OR 1.8, 95%CI: 1.1-3.1), and a shorter lifespan of the CVAD (adjusted OR 0.98, 95%CI: 0.96-0.99) were independently associated with an increased risk for CRVT.
Conclusion: In this study, anticoagulant use decreased the risk for CRVTs. In addition, we identified left-sided vein insertion, a previous CVAD thrombosis, and a shorter CVAD lifespan as risk factors for CRVT. Further prospective studies should provide guidance whether prophylactic use of anti-coagulants, especially for patients with a left-sided CVAD and a history of CVAD thrombosis, is justified.

Optimal timing of cholecystectomy after necrotising biliary pancreatitis

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Background: Following an episode of acute biliary pancreatitis, cholecystectomy is advised to prevent recurrent biliary events. There is limited evidence regarding the optimal timing and safety of cholecystectomy in patients with necrotising biliary pancreatitis.
Methods: A post-hoc analysis of a multicentre prospective cohort. Patients with biliary pancreatitis and a computed tomography severity score of three or more were included in 27 Dutch hospitals between 2005 and 2014. Primary outcome was the optimal timing of cholecystectomy in patients with necrotising biliary pancreatitis. Secondary outcomes were the number of recurrent biliary events, periprocedural complications of cholecystectomy, and the protective value of endoscopic sphincterotomy.
Results: Overall, 248 patients were included in the analysis. Cholecystectomy was performed in 191 patients (77%) at a median of 103 days (IQR 46 – 222) after discharge. Infected necrosis after cholecystectomy occurred in four (2%) patients with persistent peripancreatic collections. Before cholecystectomy, 66 patients (27%) developed biliary events. The risk of overall recurrent biliary events prior to cholecystectomy increased significantly at 10 weeks after discharge (risk ratio 0.493 [95% CI 0.270 – 0.900]; p = 0.016). The risk of recurrent pancreatitis before cholecystectomy increased significantly at 8 weeks after discharge (risk ratio 0.135 [0.018 – 0.987]; p = 0.018). The complication rate of cholecystectomy did not = decrease over time. Endoscopic sphincterotomy did not reduce the risk of recurrent biliary events (odds ratio 1.4 [95% CI, 0.74–2.83]).
Conclusion: The optimal timing of cholecystectomy after necrotising biliary pancreatitis, in the absence of peripancreatic collections, is within 8 weeks after discharge. There is no role for endoscopic sphincterotomy in preventing biliary events in patients with necrotising pancreatitis.

Persistent and de novo symptoms after cholecystectomy

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Background: Cholecystectomy is the current gold standard for treating uncomplicated symptomatic cholecystolithiasis. Cholecystectomy is effective in relieving biliary pain, but other abdominal symptoms may persist. It is unclear which symptoms resolve and which symptoms may newly develop after cholecystectomy. This study aims to clarify which symptoms are likely to persist and which symptoms may develop de novo after a cholecystectomy and to find associated factors.
Methods: Patients who underwent a cholecystectomy for abdominal pain and gallstones from two prospective trials were included. Patients completed questionnaires on pain and gastro-intestinal symptoms before- and after cholecystectomy. The prevalence of persistent and de novo abdominal symptoms were evaluated. Logistic regression was used to identify patient characteristics associated with the most reported postoperative symptoms.
Results: The two trials included 817 patients who underwent a cholecystectomy with complete follow-up. After six months of follow-up, 36.4% of patients still reported pain. The prevalence of most symptoms was reduced significantly after cholecystectomy. Patients with unresolved pain after cholecystectomy had a higher prevalence most symptoms both at baseline and after six months of follow-up. Food-related symptoms (i.e. restricted eating) and abdominal gas-related symptoms (i.e. flatulence) were the most often recorded persistent symptoms. The most common de novo symptoms were stool-related (i.e. frequent bowel movements). Logistic regression showed that severity of symptoms was associated with persistence of symptoms, except for pain. Furthermore, older patients are more likely to be pain-free after cholecystectomy.
Conclusion: Pain persisted in 36.4% of patients after cholecystectomy. Gas- and food-related symptoms are most likely to persist after cholecystectomy, especially if more severe at baseline. After LC, newly reported symptoms are mainly stool-related.

Relation of postoperative morbidity with quality of life following esophageal surgery for cancer: a European Multicenter Study

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Background: Despite improvements in perioperative esophageal cancer care, severe postoperative complications occur in 17.2% of the patients. Postoperative complications after esophageal cancer operations are associated with reduced health-related quality of life (HR-QoL), and severe complications may have profound negative effect on the HR-QoL. The aim of this study was to investigate the relation between postoperative morbidity and the reported HR-QoL in patients following esophagectomy for cancer.
Methods: Disease-free patients following esophagectomy for cancer in one of the participating LASER study centers between 2010 and 2016 were included. Patients completed the LASER, EORTC-QLQ-C30 and EORTC-QLQ-OG25 questionnaires at least one year following surgery. The primary outcome was the relation between reported HR-QoL and occurrence of postoperative complications and to compare the HR-QoL in the study population with the reference values of the general population. Subgroup analysis was performed in patients with 'no' or 'minor' (Clavien-Dindo grade I-II) and 'severe' (Clavien-Dindo grade ≥III) complications, using univariable and multivariable logistic regression analysis.
Results: Among 645 included patients, 283 patient with 'no', 207 patients with 'minor' and 155 patients with 'severe' postoperative complications were included. The mean age of the patients was 64 years (SD 9), with a mean time since surgery of 4.4 years (SD 1.7). No clinically relevant differences were found in the HR-QoL scores between patients 'with' and with 'no' complications, neither in the subgroup analysis for severity of postoperative complications. Compared to the general population, patients reported worse HR-QoL in all domains except 'Global health' and 'Emotional functioning', and more symptomatology in all symptom domains except 'Pain'.
Conclusion: None of the observed differences in HR-QoL between patients 'with' and with 'no' complications, after a mean of 4.4 years after esophagectomy, were clinically relevant. Also in subgroup analysis for severity of postoperative complications, based on the Clavien-Dindo scores, no differences were observed.

Burden of disease experienced by patients following a watch-and-wait policy for locally advanced rectal cancer: A qualitative study

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Background: Patient-reported outcome measures (PROMs) are increasingly used in routine cancer care to evaluate treatment and monitor symptoms, function and other quality of life (QoL) aspects. For rectal cancer patients following a Watch-and-Wait (W&W) program, there is no suitable PROM. Insight into patient experiences with this program is an essential step of PROM development. With this qualitative study we aimed to provide insights into the most important functional outcomes and QoL aspects that patients experience during the W&W program.
Methods: Locally advanced rectal cancer patients who are enrolled in the W&W-program in The Netherlands were interviewed by telephone using a semi-structured interview guide. All interviews were digitally audio-recorded, transcribed verbatim and coded. A thematic approach was used to analyze the data and identify themes and subthemes of importance to patients.
Results: Eighteen patients were interviewed (78% male, mean age 68, range 52 - 83). Physical complaints after treatment were present, most notably gastrointestinal complaints, neuropathy, and fatigue. Furthermore, patients were anxious about a possible recurrence, had a fear of surgery or stoma, or they experienced a general feeling of apprehensiveness in daily life. Yet, different coping mechanisms such as acceptance were present in many patients and limitations in daily life were limited.
Conclusion: We identified important functional outcomes, such as gastrointestinal complaints, fatigue and neuropathy in patients who participate in the W&W program. Furthermore, emotional burden and unmet needs were reported by these patients. These findings can be used to improve clinical practice and inform the development of a PROM.

Better Exercise and FOod, better REcovery (BEFORE): Feasibility Study

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Background: Prehabilitation has been postulated as an effective preventive intervention to reduce postoperative complications, particularly for elderly patients with a relatively high risk of postoperative complications. To date it remains to be demonstrated whether prehabilitation increases physical capacity and reduces postoperative complications. The aim of this study was to assess the feasibility of a multimodal prehabilitation program consisting of a personalized, supervised training program and nutritional intervention for elderly patients prior to colorectal surgery.
Methods: This single-center study was a prospective feasibility study carried out in one large teaching hospital in the Netherlands. Patients (≥ 65 years) with colorectal (pre)malignancy scheduled for elective colorectal resection were included in the study. The prehabilitation program consisted of a 4-week supervised in-hospital, personalized exercise program (three sessions a week, twelve in total) and nutritional intervention (three fresh protein-rich meals and three snacks daily). The primary outcome was the feasibility, defined as ≥ 80% compliance with the training program and nutritional intervention. The secondary outcomes were the organizational feasibility and acceptability of the prehabilitation program (NL70834.096.19).
Results: Nine patients were included in the study. Attendance of ≥ 80% at all 12 training sessions was established by 7 patients; all participants attended ≥ 80% of the available training sessions. Overall, compliance with the training was 91.7%. Compliance of ≥80% with the nutritional program was accomplished by 6 patients. The median protein intake was 1.2 (g/kg/d). Organizing the prehabilitation program was feasible. After prehabilitation improvement was observed in maximum heartrate, muscular strength, exercise capacity, FCV and FEV1. Participants considered the multimodal prehabilitation program to be acceptable.
Conclusion: Multimodal prehabilitation with personalized training and nutritional intervention was feasible for the majority of patients in terms of adherence, organization and acceptance. Further studies will be conducted to investigate the merits of this program for colorectal cancer patients.

Preoperative aerobic fitness and body composition variables play a critical role in the development and impact of postoperative complications in colorectal cancer surgery

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Background: Complications after colorectal cancer (CRC) surgery remain highly prevalent. Preoperative aerobic fitness and body composition variables are promising physical fitness parameters to improve current preoperative risk assessment in predicting postoperative complications and to evaluate a patient's resilience to the impact of potential postoperative complications. This study aimed to assess how these physical fitness variables are interrelated regarding the occurrence and the impact of postoperative complications after elective CRC surgery.
Methods: Preoperative aerobic fitness was prospectively assessed by Steep Ramp Test performance (achieved peak work rate normalised for body mass after work rate increments of 10 W/10 sec). Body composition was assessed based on muscle mass and muscle density using preoperative computed tomography scan analysis at the level of the third lumbar vertebra. Complications were graded by the Clavien-Dindo classification (CD). Time to recovery from complications was assessed by the modified Iowa level of assistance scale to determine the impact of complications. Logistic regression analysis was used to assess the associations of preoperative estimated aerobic fitness and body composition variables with the occurrence and impact of postoperative complications.
Results: Of 238 included patients, 96 (40.3%) developed postoperative complications (CD≥I). Better preoperative aerobic fitness significantly decreased the likelihood to develop postoperative complications when adjusted for age, sex, comorbidities, tumour location, and low muscle mass (OR 0.55, 95% CI 0.35-0.85) or low muscle density (OR 0.57, 95% CI 0.36-0.89). A prolonged time to recover from complications was strongly associated with lower muscle density (OR 4.14, 95% CI 1.28-13.41), regardless of confounders including preoperative aerobic fitness or muscle mass.
Conclusion: Poor preoperative aerobic fitness was associated with the risk for complications, where low preoperative muscle density was associated with an increased time to recover from complications after CRC surgery. Patients with lower aerobic capacity seem less able to meet the increased physiological demands induced by surgery, making them more prone to complications. The presence of myosteatosis, a condition characterized by low muscle density, seems to determine further postoperative recovery in case of complications, regardless of preoperative aerobic fitness levels. Future studies should focus on gaining a detailed insight into postoperative changes in aerobic fitness, inflammatory status and muscle metabolism, to better understand how a patient's phenotype is related to postoperative morbidity and recovery.

Appendiceal lesions in serrated polyposis patients: highly prevalent but low malignant potential

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Background: Serrated polyposis syndrome (SPS) is the most prevalent colonic polyposis syndrome and is associated with an increased colorectal cancer (CRC) risk. A recent study in SPS patients reported a relatively high proportion of advanced SPs located in the appendix while another study suggested prophylactic appendectomy to be considered in SPS patients. We aimed to describe the prevalence and clinical relevance of appendiceal SPs in a large, prospective SPS cohort.
Methods: We analyzed data from 2007 to 2020 of patients who fulfilled the SPS criteria within our referral center. We excluded patients with inflammatory bowel disease (IBD) or CRC related germline mutations. Baseline data from medical, endoscopy and pathology reports were collected. Pathology reports were reevaluated and histology was revised by an expert pathologist in patients who underwent endoscopic resection of an appendiceal lesion or colorectal surgery including the appendix. Our primary outcome measure was the prevalence of advanced lesions, including adenocarcinomas, sessile serrated lesions with dysplasia (SSLD) and adenomas with high-grade dysplasia.
Results: A total of 171 patients with SPS were included and completed endoscopic clearance of all relevant colonic polyps. In total, 16/171 (9.4%) SPs were detected at endoscopy or in surgical specimens including the appendix of those that underwent colonic resection. During both clearance as well as surveillance colonoscopies, in total five (2.9%) appendiceal lesions were detected: four sessile serrated lesions (SSLs) of which one had dysplasia (SSLD) and one tubular adenoma with low-grade dysplasia. One of the SSLs was removed by surgery, whereas the remaining polyps were removed endoscopically. Fifty-three patients underwent colorectal surgery, of which in 34 the appendix was enclosed and available for revision. Polyps were found in 13 (38.3%) appendices: 11 SSLs without dysplasia and two hyperplastic polyps. One of those SSLs was the one that was also detected at colonoscopy.
Conclusion: In our cohort of 171 SPS patients, the overall prevalence of appendiceal SPs was 9.4%. Considering the high rate of 38.3% in the surgical specimens, the prevalence in our total population seems underestimated. However, only one of those 16 SPs was advanced, and this SSLD was endoscopically detected and removed. Our data suggest that SPs of the appendix are common, but of limited clinical importance in the management of SPS patients.