NVGE
NEDERLANDSE VERENIGING
VOOR GASTRO-ENTEROLOGIE

DIGESTIVE DISEASE DAYS - DDD

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

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

INHOUDSOPGAVE **pag.**

Tijdstippen diverse ledenvergaderingen donderdag:

Nederlandse Vereniging voor Hepatologie	4 oktober 11.00 uur – Baroniezaal
Nederlandse Vereniging voor Gastroenterologie	4 oktober 11.30 uur – Brabantzaal
NVMDL i.o.	4 oktober 12.00 uur – Zaal 55-57
Netwerk verpleegkundig specialisten MDL	4 oktober 13.30 uur – Zaal 52
Nederlandse Vereniging voor Gastrointestinale Chirurgie	4 oktober *tijdstip niet bekend*

INHOUDSOPGAVE **pag.**

Tijdstippen diverse ledenvergaderingen vrijdag:

Nederlandse Vereniging van Maag-Darm-Leverartsen	5 oktober 08.00 uur – Zaal 82-83
V&VN MDL	5 oktober 09.20 uur – Brabantzaal
Sectie Gastrointestinale Oncologie	5 oktober 10.50 uur – Zaal 81

Belangrijke mededeling
over de aanwezigheid van farmaceutische industrieën

Aan alle deelnemers tijdens de Digestive Disease Days op 4 en 5 oktober 2018

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

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

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

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

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

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

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

Het bestuur van de NVGE

Cursorisch onderwijs in maag-darm-leverziekten — Brabantzaal

Cursuscommissie:
Dr. B. Oldenburg, MDL-arts, UMCU, Utrecht, voorzitter
Mevr. dr. C.M. Bakker, MDL-arts, MC Slotervaart, Amsterdam
Dr. A.J. Bredenoord, MDL-arts, AMC, Amsterdam
Dr. M.A.J.M. Jacobs, MDL-arts, VUmc, Amsterdam
Mevr. dr. A.M.J. Langers, MDL-arts, LUMC, Leiden
Prof. dr. J.F. Lange, chirurg, UMCG, Groningen
Mevr. M. Radersma, aios MDL, VUmc, Amsterdam
Dr. B.J. Veldt, MDL-arts, Reinier de Graaf Gasthuis, Delft
Dr. P. Weijenborg, aios MDL, AMC, Amsterdam

Onderwerp: Oncologie

Voorzitters: *B. Oldenburg, MDL-arts, UMCU, Utrecht*
B. Veldt, MDL-arts, Reinier de Graaf Gasthuis, Delft

14.15 – 14.25 Introductie

14.25 – 14.45 Hoe verricht ik een goede coloscopie?
Dr. A.M.J. Langers, MDL-arts, LUMC, Leiden
Leerdoelen: optimale voorbereiding; ligging; wat te doen bij niet-vorderende procedure, tips & tricks

14.45 – 15.20 De endoscopist, de patholoog en de poliep
Dr. M.M. Laclé, patholoog, UMCU, Utrecht
Dr. L.M.G. Moons, MDL-arts, UMCU, Utrecht
Leerdoelen: endoscopische classificatie, hoe een poliep aan te leveren? Histologische classificatie, operatie-indicaties

15.20-15.40 Behandeling van complicaties van endoscopische resecties
Dr. A.D. Koch, MDL-arts, Erasmus MC, Rotterdam
Leerdoelen: herkennen van red flags, endoscopische technieken ter behandeling, post-poliepectomie syndroom

15.40-16.00 Voorbereiding voor een chirurgische resectie
Dr. D. Roos, chirurg, Reinier de Graaf Gasthuis, Delft
Leerdoelen: tattoo (waar en waarom), optimalisatie voedingstoestand, darmvoorbereiding

16.00-16.20 CRC bij de oudere patiënt
Dr. B. van Leeuwen, chirurg, UMCG, Groningen
Leerdoelen: wanneer (geen) diagnostiek, behandelingskeuzes, uitkomsten, shared decision making

16.20 – 16.50 Pauze

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

Voorzitters: *volgt*

16.50 – 17.10	Is er nog plaats voor de colonstent? *Dr. F. ter Borg, MDL-arts, Deventer Ziekenhuis, Deventer* Leerdoelen: indicaties, leercurves, uitkomsten, tips & tricks
17.10 – 17.30	Levermetastasen van het coloncarcinoom *Prof. dr. C. Verhoef, oncologisch chirurg, Erasmus MC, Rotterdam* Leerdoelen: beeldvorming, indicaties behandeling, keuze behandeling
17.30 – 17.50	HIPEC *Dr. I. de Hingh, chirurg, Catharina ziekenhuis, Eindhoven* Leerdoelen: (contra) indicaties, procedure, complicaties en uitkomsten
17.50 – 18.25	Het rectumcarcinoom: chirurg vs. MDL-arts *Spreker: volgt* Leerdoelen: wanneer endoscopische of chirurgische resectie, technieken
18.25 – 18.45	Erfelijke tumoren *Spreker: volgt* Leerdoelen: identificatie van hoogrisico patiënten, plaats van geneticus, follow-up en surveillance
18.45 – 19.00	Quiz
19.00 – 20.30	Diner einde cursus

Ledenvergadering NVGE **Brabantzaal**

Voorzitter: *Prof. dr. P.D. Siersema, voorzitter NVGE*

11.30 Ledenvergadering Nederlandse Vereniging voor Gastroenterologie

12.00 Lunch expositiehal

Richtlijnenbijeenkomst NVMDL **Brabantzaal**

Voorzitters *: Dr. A.Y. Thijssen, MDL-arts, Albert Schweitzer ziekenhuis, Dordrecht*

13.00 Richtlijnen 2.0; hoe bouw je een richtlijn anno 2018?
T. van Barneveld, directeur, Kennisinstituut Medisch Specialisten.

13.25 Richtlijn Poliepectomie
Dr. L.M.G. Moons, MDL-arts, University Medical Center Utrecht, Utrecht.

14.25 Richtlijn implementate; Het Kennisspel
Dr. C.P. Peters, aios MDL, Academic Medical Center, Amsterdam.

15.00 Theepauze expositiehal

Symposium **Brabantzaal**

Voorzitters *: Dr. W.H. de Vos tot Nederveen Cappel, MDL-arts, Isala, Zwolle.*
Dr. P. van Duijvendijk, chirurg, Groningen University Medical Center, Groningen.

Symposium - Erfelijke Gastrointestinale Tumoren

15.30 Lynch syndroom, risico op CRC bij verschillende mutaties, implicaties voor screenings-interval?
Dr. J.J. Koornstra, MDL-arts, Groningen University Medical Center, Groningen.

15.45 Behandeling van duodenale polyposis bij Familiaire Adenomateuze Polyposis
Prof. dr. J.C.H. Hardwick, MDL-arts, Leiden University Medical Center, Leiden.

16.00 Erfelijke serrated polyposis, diagnose en behandeling
Prof. dr. E. Dekker, MDL-arts, Academic Medical Center, Amsterdam.

16.15 Resultaten van surveillance bij erfelijk pancreascarcinoom
Prof. dr. H.F.A. Vasen, internist, Leiden University Medical Center, Leiden.

16.30 Erfelijk maagcarcinoom
Dr. J. van Dieren, MDL-arts, NKI-AVL, Amsterdam.

16.45 Chirurgische opties bij erfelijke darmtumoren
Prof. dr. W.A. Bemelman, chirurg, Academic Medical Center, Amsterdam.

17.00 Einde symposium

UEG — Brabantzaal

Voorzitters : *Prof. dr. P.D. Siersema, voorzitter en prof. dr. C.J. van der Woude, secretaris*

17.00 **UEG, wat is het precies en wat heb je er aan?**
Prof. dr. P. Fockens, President United European Gastroenterology
MDL-arts, Academic Medical Center, Amsterdam.

United European Gastroenterology is de overkoepelende MDL-organisatie waarvan 17 Europese MDL-gerelateerde beroepsverenigingen (bv ECCO, EASL, ESGE, ESPEN etc etc etc) en 47 nationale MDL verenigingen (waaronder NVGE en NVMDL) lid zijn. Tezamen gaat het om meer dan 25.000 professionals op MDL-gebied. De UEGWeek is een van de grootste MDL-congressen ter wereld met ruim 13.000 deelnemers elk jaar waaronder veel Nederlanders.

President Select — Brabantzaal

Voorzitters : *Prof. dr. P.D. Siersema, voorzitter en prof. dr. C.J. van der Woude, secretaris*

17.10 Children from coeliac families benefit from early diagnosis and treatment: an analysis of the PreventCD cohort.
C.R. Meijer-Boekel[1], R. Auricchio[2], G. Castillejo[3], P. Crespo Escobar[4], J. Gyimesi[5], C. Hartman[6], S. Kolacek[7], S. Koletzko[8], I. Korponay-Szabo[9], E. Martinez Ojinaga Nodal[10], M. Piescik-Lech[11], I. Polanco[10], C. Ribes Koninckx[4], R. Shamir[12], H. Szajewska[11], P. Szillat[13], R. Troncone[14], K. Werkstetter[15], M. Mearin[1]. [1]Dept. of Pediatrics, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Translational Medical Science, Section of Paediatrics and European, University „Federico II„ Naples, Italy. [3]Dept. of Pediatric Gastroenterology Unit, Hospital Universitario Sant Joan de Reus, Reus, Spain. [4]Dept. of Pediatric Gastroenterology and Hepatology, La Fe University Hospital, Valencia, Spain. [5]Dept. of Paediatrics, Heim Pál Children's Hospital, Budapest, Hungary. [6]Institute of Gastroenterology, Nutrition and Liver Diseases, Schneider Children's Medical Center of Israel, Petach Tikva, Israel. [7]Dept. of Pediatric Gastroenterology and Nutrition, Zagreb University Medical School, Referral Center Pediatric Gastroenterology and, Zagreb, Croatia. [8]Dr. von Hauner Children's Hospital, LMU - Ludwig Maximilian's University Munich Medical Center, Munich, Germany. [9]Dept. of Paediatrics, University of Debrecen and Heim Pál Children's Hospital, Debrecen And Budapest, Hungary. [10]Dept. of Pediatric Gastroenterology and Nutrition, La Paz University Hospital, Madrid, Spain. [11]Dept. of Paediatrics, The Medical University of Warsaw, Warsaw, Poland. [12]Institute of Gastroenterology, Nutrition and Liver Diseases„ The Netherlands. [13]Thermofisher, Freiburg, Germany. [14]Dept. of Translational Medical Science, Section of Paediatrics and European, University „Federico II„ Naples, Italy. [15]Dr. von Hauner Children's Hospital, Munich, LMU - Ludwig Maximilian's University Munich Medical Center, Munich, Germany.

17.20 Endoscopic full-thickness resection of colorectal lesions - a nationwide prospective cohort study
L.W. Zwager[1], M.E.S. Bronzwaer[1], B.W. van der Spek[2], G.D.N. Heine[2], K.J.C. Haasnoot[2], J.J. Boonstra[3], W.R. ten Hove[4], L.E. Perk[5], S.T. Rietdijk[6], H. van der Sluis[7], B.L.A.M. Weusten[8], P. Fockens[1], B.A.J. Bastiaansen[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Noordwest Hospital Group, Alkmaar, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Alrijne Medical Group, Leiden, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Haaglanden Medical Center, Den Haag, The Netherlands. [6]Dept. of Gastroenterology and

Hepatology, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Isala Clinics, Zwolle, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Utrecht, The Netherlands.

17.30 Laparoscopic versus Open Pancreatoduodenectomy (LEOPARD-2): a Multicenter Randomized Controlled Trial
J. van Hilst[1], T. de Rooij[1], K. Bosscha[2], D.J. Brinkman[3], S. van Dieren[1], M.G. Dijkgraaf[1], M.F. Gerhards[4], I.H. de Hingh[3], T.M. Karsten[4], D.J. Lips[2], M.D. Luyer[3], O.R. Busch[1], S. Festen[4], M.G. Besselink[1]. [1]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Surgery, Jeroen Bosch Ziekenhuis, Den Bosch, The Netherlands. [3]Dept. of Surgery, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Surgery, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands.

17.40 Einde abstractproramma
Prof. dr. P.D. Siersema, MDL-arts, Radboudumc, Nijmegen.

Uitreiking prijzen — Brabantzaal

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

17.40 Uitreiking Gastrostart subsidies

17.45 Prijsuitreikingen

18.15 Congresborrel

19.30 Lustrumdiner in de Beneluxzaal ter gelegenheid van het 105-jarig jubileum.

22.00 Lustrumfeest in de Brabantzaal

Symposium – Nederlandse Vereniging voor Gastrointestinale Chirurgie I — Auditorium

Voorzitters : volgt

Thema : volgt

09.30 volgt

11.30 Ledenvergadering NVGE in de Brabantzaal

12.00 Lunchpauze

Symposium – Nederlandse Vereniging voor Gastrointestinale Chirurgie II **Auditorium**

Voorzitters : volgt

Thema : volgt

13.00 volgt

15.00 Pauze

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

Voorzitters : volgt

Thema : volgt

15.30 volgt

17.00 Plenaire sessie in de Brabantzaal

Symposium - Nederlandse Vereniging voor Hepatologie **Baroniezaal**

Voorzitter : volgt

Thema :

09.30 Spreker 1
volgt

09.50 Spreker 2
volgt

10.20 Spreker 3
volgt

10.30 Battle
volgt

10.50 The yield and safety of colonoscopy in patients evaluated for liver transplantation
R.C. Oey[1], L. van Tilburg[1], N.S. Erler[2], H.J. Metselaar[1], H.R. van Buuren[1], R.A. de Man[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Biostatistics, Erasmus University Medical Center, Rotterdam, The Netherlands.

11.00 **Ledenvergadering NVH**

11.30 Ledenvergadering NVGE in de Brabantzaal

12.00 Lunchpauze

Abstractsessie - Sectie Inflammatoire Darmziekten **Baroniezaal**

Voorzitters : A.E. van der Meulen en D. Leemreis

13.00 Therapeutic drug monitoring of adalimumab in inflammatory bowel disease patients in a teaching hospital setting: results of a prospective cohort study.
W. van 't Geloof[1], P.J. Boekema[2], L.P.L. Gilissen[3], M.A.C. Broeren[4], L.J.J. Derijks[1]. [1]Dept. of Clinical Pharmacy, Maxima Medical Center, Veldhoven, The Netherlands. [2]Dept. of Gastroenterology, Maxima Medical Center, Veldhoven, The Netherlands. [3]Dept. of Gastroenterology, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Clinical Laboratory, Maxima Medical Center, Veldhoven, The Netherlands.

13.10 The use of autologous hematopoietic stem cell transplantation as rescue therapy for refractory Crohn's disease.
N. Mahmmod[1], S. Mahmmod[2], H.R. Koene[3], B. Oldenburg[2], H.H. Fidder[2], [1]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Hematology, St. Antonius Hospital, Nieuwegein, The Netherlands.

13.20 Binding properties of vedolizumab in peripheral blood and gut mucosal cells from IBD patients.
A. Bangma, M.D. Voskuil, W.T.C. Uniken Venema, B.H. Jansen, M.D. Linssen, E.A.M. Festen, R.K. Weersma, G. Dijkstra. Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands.

13.30 Faecal calprotectin is a reliable marker for endoscopic and histological IBD activity at week 16 after initiation of vedolizumab
R.W.M. Pauwels[1], A.C. de Vries[2], C.J. van der Woude[2]. [1]Dept. of Gastroenterology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands.

13.40 Fatigue in Quiescent Inflammatory Bowel Disease is Associated with Low GM-CSF levels and Metabolomic Alterations
N.Z. Borren[1], M.P. Flores Sanchez[2], G. Goel[1], K. Lassen[1], K. Devaney[1], J.G. Garber[1], H. Khalili[1], V. Yajnik[1], R.J. Xavier[1], C.J. van der Woude[2], A.N. Ananthakrishnan[1]. [1]Dept. of Gastroenterology, Massachusetts General Hospital, Boston, United States Of America. [2]Dept. of Gastroenterology, Erasmus University Medical Center, Rotterdam, The Netherlands.

13.50 Comparison of resting metabolic rate in patients with active crohn's disease and crohn's disease in remission
E. van Lingen[1], L. Onderstal- van Batenburg[2], I. Molendijk[1], M.E. van Veen - Lievaart[2], G.D. Hopman[2], J.E.W. Martens[1], M.E.J. Steenhuis[1], S. van der Marel[1], P.W.J. Maljaars[1], [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Dietetics, Leiden University Medical Center, Leiden, The Netherlands.

14.00 Geriatric Assessment in Older Inflammatory Bowel Disease Patients
V.E.R. Asscher[1], J.D. Slagboom[1], M.H. Duin[1], L.J. Meijer[1], S.N. Waars[1], A.E. van der Meulen-de Jong[1], F.J.A. van Deudekom[2], S.P. Mooijaart[2], P.W.J. Maljaars[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Gerontology and Geriatrics, Leiden University Medical Center, Leiden, The Netherlands.

14.10 Intestinal acidification sensed by pH-sensing receptor OGR1 (GPR68) contributes to fibrogenesis

W.T. van Haaften[1], A. Hünerwadel[2], K. Baebler[2], T. Raselli[2], C. Mamie[2], B. Misselwitz[2], G. Rogler[2], B. Weder[2], G. Dijkstra[1], C.F. Meier[2], C. de Vallière[2], A. Weber[3], C.A. Wagner[4], I. Frey-Wagner[2], P.A. Ruiz[2], M. Hausmann[2]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Hospital Zürich, Zürich, Switzerland. [3]Dept. of Pathology and Molecular Pathology, University Hospital Zürich, Zürich, Switzerland. [4]Institute of Physiology, University of Zürich, Zürich, Switzerland.

14.20 High dose vitamin D does not prevent postoperative endoscopic and clinical recurrence in Crohn's disease

J.R. de Bruyn[1], P. Bossuyt[2], M. Ferrante[3], R.L. West[4], G. Dijkstra[5], B.J. Witteman[6], D. Franchimont[7], J.D. van der Bilt[8], T. Tollens[9], W.A. Bemelman[10], A. D'Hoore[11], M. Duijvestein[1], G.R. D'Haens[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology, Imeldaziekenhuis, Bonheiden, Belgium. [3]Dept. of Gastroenterology, Universiteitsziekenhuis Leuven, Leuven, Belgium. [4]Dept. of Gastroenterology and Hepatology, Franciscus Gasthuis & Vlietland, Rotterdam, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Ziekenhuis Gelderse Vallei, Ede, The Netherlands. [7]Dept. of Gastroenterology, Hopital Erasme, Brussel, Belgium. [8]Dept. of Surgery, Flevoziekenhuis, Almere, The Netherlands. [9]Dept. of Surgery, Imeldaziekenhuis, Bonheiden, Belgium. [10]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [11]Dept. of Surgery, Universiteitsziekenhuis Leuven, Leuven, Belgium.

14.30 Lopend onderzoek van Nederlandse bodem
volgt

15.00 Pauze

Abstractsessie - Nederlandse Vereniging voor Hepatologie — Baroniezaal

Voorzitters : volgt

15.30 Development and Validation of a Model to Predict Regression of Hepatocellular Adenoma

A.J. Klompenhouwer[1], M.M. Alblas[2], B.V. van Rosmalen[3], M. Doukas[4], M.G.J. Thomeer[5], R.B. Takkenberg[6], J. Verheij[7], T.M. van Gulik[3], H.F. Lingsma[2], R.A. de Man[8], J.N.M. IJzermans[1]. [1]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Public Health, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Experimental Surgery, Academic Medical Center, Amsterdam, The Netherlands. [4]Dept. of Pathology, Erasmus University Medical Center, Rotterdam, The Netherlands. [5]Dept. of Radiology, Erasmus University Medical Center, Rotterdam, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [7]Dept. of Pathology, Academic Medical Center, Amsterdam, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands.

15.40 Mean week 24 hbsag declines predict subsequent rate of hbsag clearance and could be a valuable endpoint for early development hbv trials

M.J. Sonneveld[1], F. de Ridder[2], O. Lenz[3], H.L. Janssen[4], W. Talloen[2], B. Hansen[4]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Research and Development, Janssen Pharmaceutica, Beerse, Belgium. [3]Dept. of Research & Development, Janssen Pharmaceutica, Beerse, Belgium. [4]Liver Disease, Toronto Centre for Liver disease, Toronto, Canada.

15.50 Role of age in presentation, response to therapy and outcome of autoimmune hepatitis

M. Biewenga[1], A.M.C. Baven-Pronk[1], J.J. van Silfhout[1], A.P. van den Berg[2], H.R. van Buuren[3], B.J. Verwer[4], C.M.J. van Nieuwkerk[4], G. Bouma[4], B. van Hoek[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, VU Medical Center, Amsterdam, The Netherlands.

16.00 The gut microbiome and liver steatosis in a Western adult population: The Rotterdam Study

L.J.M. Alferink[1], D. Radjabzadeh[2], N.S. Erler[3], M.C. Medina Gomez[2], A.G. Uitterlinden[2], R.J. de Knegt[1], M.A. Ikram[4], H.J. Metselaar[1], H.L.A. Janssen[5], R. Kraaij[2], S. Darwish Murad[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Internal Medicine, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Biostatistics, Erasmus University Medical Center, Rotterdam, The Netherlands. [4]Dept. of Epidemiology, Erasmus University Medical Center, Rotterdam, The Netherlands. [5]Dept. of Hepatology, Toronto General Hospital, University Health Network, Toronto, Canada.

16.10 Track & Trace: Results from a retrieval strategy to identify lost to follow-up chronic hepatitis C patients.

I.D. Munsterman[1], M. van Dijk[1], J.P.E. van Berlo[1], J.C. Rahamat-Langendoen[2], J.P.H. Drenth[1], E.T.T.L. Tjwa[1]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Medical Microbiology, Radboud University Medical Center, Nijmegen, The Netherlands.

16.20 Systematic review and meta-analysis of risk factors for recurrent primary sclerosing cholangitis

I.C. Steenstraten[1], K. Sebib Korkmaz[1], M.D.M. Rodriguez Girondo[2], A. Inderson[1], B. van Hoek[1], P.W.J. Maljaars[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Biomedical Data Sciences, Leiden University Medical Center, Leiden, The Netherlands.

16.30 Reason of discontinuation after transarterial chemoembolization influences survival in patients with hepatocellular carcinoma

T.A. Labeur[1], R.B. Takkenberg[1], H.J. Klümpen[2], O.M. van Delden[3]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Medical Oncology, Academic Medical Center, Amsterdam, The Netherlands. [3]Dept. of Radiology, Academic Medical Center, Amsterdam, The Netherlands.

16.40 Validation of the Amsterdam-Oxford survival prediction model in Primary Sclerosing Cholangitis in a tertiary center setting
J.C. Goet[1], A. Floreani[2], X. Verhelst[3], N. Cazzagon[2], L. Perini[2], W.J. Lammers[1], A.C. de Vries[1], A.J.P. van der Meer[1], H.R. van Buuren[1], B.E. Hansen[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Surgery, Oncology and Gastroenterology, University of Padua, Padua, Italy. [3]Dept. of Electrical Engineering, VCA group, Ghent University Hospital, Ghent, Belgium.

16.50 Body composition is an independent predictor of outcome in patients with hepato-cellular carcinoma treated with sorafenib
T.A. Labeur[1], J.L.A. van Vugt[2], D.W.G. ten Cate[2], R.B. Takkenberg[1], J.N.M. IJzermans[2], B. Groot Koerkamp[2], R.A. de Man[3], O.M. van Delden[4], F.A.L.M. Eskens[5], H.J. Klümpen[6]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [4]Dept. of Radiology, Academic Medical Center, Amsterdam, The Netherlands. [5]Dept. of Medical Oncology, Erasmus University Medical Center, Rotterdam, The Netherlands. [6]Dept. of Medical Oncology, Academic Medical Center, Amsterdam, The Netherlands.

17.00 Plenaire sessie in de Brabantzaal

18.15 Borrel

19.30 Lustrumdiner NVGE 105 jaar

Symposium - Inflammatoire Darmziekten — Parkzaal

Voorzitters : M. Pierik en C. Spooren

Titel symposium ??

10.00 Review AB in IBD
Dr. D.M.A.E. Jonkers, onderzoeker, Maastricht University Medical Center, Maastricht.

10.25 SysMed-IBD drug repurposing approach and identification of clarithromycin.
Prof. dr. C. Probert, Gastroenterologist, Liverpool, United Kingdom.

10.50 Microbioom what is new?
Prof. dr. E.J. Kuijper, medisch microbioloog, Leiden University Medical Center, Leiden.

11.10 Faecestransplantatie
Prof. dr. C.Y. Ponsioen, MDL-arts, Academic Medical Center, Amsterdam.

11.30 Ledenvergadering NVGE in de Brabantzaal

12.00 Lunchpauze

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

Voorzitters : volgt

13.00 Early closure of ileal pouch-anal anastomotic leakage preserves long-term results; a prospective cohort study

K.A.T.G.M. Wasmann[1], M.A. Reijntjes[2], M.E. Stellingwerf[2], C.Y. Ponsioen[3], C.J. Buskens[2], P.J. Tanis[2], W.A. Bemelman[2]. [1]Dept. of Surgery and Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [3]Dept. of Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands.

13.10 Outcomes and risk score for distal pancreatectomy with celiac axis resection (DP-CAR score): an international multicenter analysis

S. Klompmaker[1], N.A. Peters[2], J. van Hilst[1], C. Bassi[3], U. Boggi[4], O.R.C. Busch[1], W. Niesen[5], T.M. van Gulik[1], A. Javed[6], J. Kleeff[7], M. Kawai[8], M. Lesurtel[9], C. Lombardo[4], A.J. Moser[10], K. Okada[8], I. Popescu[11], R. Prasad[12], R. Salvia[3], A. Sauvanet[13], M.J. Weiss[6], H.J. Zeh[14], A.H. Zureikat[14], H. Yamaue[8], C.L. Wolfgang[6], M.E. Hogg[14], M.G.H. Besselink[1]. [1]Dept. of Surgery, Cancer Center Amsterdam, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Surgery, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Surgery, University of Verona, Verona, Italy. [4]Dept. of Surgery, University of Pisa, Pisa, Italy. [5]Dept. of Surgery, Heidelberg University, Heidelberg, Germany. [6]Dept. of Surgery, Johns Hopkins Hospital, Baltimore, United States Of America. [7]Dept. of Surgery, Martin-Luther-University Halle-Wittenberg, Halle (Saale), Germany. [8]Dept. of Surgery, Wakayama University School of Medicine, Wakayama, Japan. [9]Dept. of Surgery, Croix Rousse University Hospital, Lyon, France. [10]Pancreas and Liver Institute, Beth Israel Deaconess Medical Center/ Havard Medical School, Boston, United States Of America. [11]Dept. of Surgery, Fundeni Clinical Institute, Bucharest, Romania. [12]Dept. of Surgery, NHS Leeds, Leeds, United Kingdom. [13]Dept. of Surgery, Beaujon Hospital, Clichy Cedex, France. [14]Dept. of Surgery, University of Pittsburgh Medical Center, Pittsburgh, United States Of America.

13.20 Preoperative Education and Informed Consent in Young Adults undergoing Bariatric Surgery: Patients' Perspectives on Current Practice.

D.S. Bonouvrie[1], C.E.J.M. Dohmen[1], M. Uittenbogaart[1], A.A.P.M. Luijten[2], F.M.H. van Dielen[2], W.K.G. Leclercq[1]. [1]Dept. of Bariatric Surgery, Maxima Medical Center, Eindhoven, The Netherlands. [2]Dept. of Bariatric surgery, Maxima Medical Center, Eindhoven, The Netherlands.

13.30 Active involvement of relatives in postoperative care: a pilot study

A.M. Schreuder, R.G.M. van Langen, A.M. Eskes, E.J.M. Nieveen van Dijkum. Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands.

13.40 Risk of pain and gastrointestinal complaints after elective abdominal surgery

R.P.G. ten Broek[1], C. Strik[2], M.W. Stommel[1], H. Goor[1]. [1]Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Anesthesiology, Radboud University Medical Center, Nijmegen, The Netherlands.

13.50 Circulating cell free tumor DNA for disease monitoring after neoadjuvant chemo-radiotherapy for esophageal cancer: proof-of-principle

B.M. Eyck[1], B.J. Noordman[1], B.J. van der Wilk[1], M.P.H.M. Jansen[2], P.N. Atmodimedjo[3], J.W.M. Martens[2], S.M. Lagarde[1], B.P.L. Wijnhoven[1], J.J.B. Van Lanschot[1], W.N.M. Dinjens[3]. [1]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Oncology, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Pathology, Erasmus University Medical Center, Rotterdam, The Netherlands.

14.00 Active surveillance versus surgery in clinically complete responders after neoadjuvant chemoradiotherapy for esophageal cancer: a propensity-matched study

B.J. van der Wilk[1], L.K.A. Neijenhuis[1], B.J. Noordman[1], G.A.P. Nieuwenhuijzen[2], M.N. Sosef[3], M.I. van Berge Henegouwen[4], S.M. Lagarde[1], B.P.L. Wijnhoven[1], A. van der Gaast[1], J.J.B. van Lanschot[1]. [1]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Surgery, Catharina Cancer Center, Eindhoven, The Netherlands. [3]Dept. of Surgery, Zuyderland MC, Heerlen, The Netherlands. [4]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands.

14.10 Impact of Postoperative Ileus in patients undergoing colorectal surgery

E.G. Peters[1], M. Pattamatta[2], B.J.J. Smeets[1], D.J. Brinkman[3], W.J. de Jonge[3], M. Hilligsmann[2], M.D.P. Luyer[1]. [1]Dept. of Surgery, Catharina Hospital, Eindhoven, The Netherlands. [2]Dept. of Health Services Research, Maastricht University Medical Center, Maastricht, The Netherlands. [3]Dept. of Gastroenterology, Tytgat Institute for Liver and Intestinal Research, Amsterdam, The Netherlands.

14.20 Image-guided pathology for evaluation of resection margins in locally advanced rectal cancer using the near-infrared fluorescent tracer bevacizumab-800CW.

S.J. de Jongh[1], J.J.J. Tjalma[1], M. Koller[1], M.D. Linssen[1], M. Dobosz[2], A. Jorritsma-Smit[3], K. Havenga[4], P.H.J. Hemmer[4], E.G.E. de Vries[5], G.A.P. Hospers[5], B. van Etten[4], V. Ntziachristos[6], A. Karrenbeld[7], G.M. van Dam[4], W.B. Nagengast[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Discovery Oncology, Pharmaceutical Research and Early Development, Roche Innovation Center Penzberg, Penzberg, Germany. [3]Dept. of clinical pharmacy and pharmacology, University Medical Center Groningen, Groningen, The Netherlands. [4]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands. [5]Dept. of Medical Oncology, University Medical Center Groningen, Groningen, The Netherlands. [6]Institute for Biological and Medical Imaging, Technical University of Munich and Helmholtz Center Munich, Munich, Germany. [7]Dept. of Pathology, University Medical Center Groningen, Groningen, The Netherlands.

14.30 Reporting outcomes of the Dutch Upper Gastrointestinal Cancer Audit according to the platform of the Esophageal Complications Consensus Group

L.R. van der Werf[1], L.A.D. Busweiler[2], J.W. van Sandick[3], M.I. van Berge Henegouwen[2], B.P.L. Wijnhoven[1]. [1]Dept. of Surgery, Erasmus University Medical Centre, Rotterdam, The Netherlands. [2]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [3]Dept. of Surgery, Antoni van Leeuwenhoek, Amsterdam, The Netherlands.

14.40 A population-based study on risk factors for tumor-positive resection margins in patients with gastric cancer

L.R. van der Werf[1], C. Cords[1], M.I. van Berge Henegouwen[2], I. Arntz[3], E.J.T. Belt[4], I.M. Cherepanin[3], P.P.L.O. Coene[5], E. van der Harst[5], J. Heisterkamp[6], B.S. Langenhoff[6], B. Lamme[4], S.M. Lagarde[1], B.P.L. Wijnhoven[1]. [1]Dept. of Surgery, Erasmus University Medical Centre, Rotterdam, The Netherlands. [2]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [3]Dept. of Surgery, Bravis Hospital, Roosendaal, The Netherlands. [4]Dept. of Surgery, Albert Schweitzer Hospital, Dordrecht, The Netherlands. [5]Dept. of Surgery, Maasstad Hospital, Rotterdam, The Netherlands. [6]Dept. of Surgery, Elisabeth Tweesteden Hospital, Tilburg, The Netherlands.

14.50 Concomitant Portal Vein Resection for perihilar cholangiocarcinoma

L.C. Franken, E. Roos, F. Rassam, M.G.H. Besselink, O.R.C. Busch, T.M. van Gulik. Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands.

15.00 Pauze

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

Voorzitters : volgt

15.30 Time to therapeutic intervention following ileocecal resection versus infliximab for ileocecal Crohn's disease: Long-Term follow up of the LIR!C trial
M.L. Haasnoot[1], T.W. Stevens[1], G.R. D'Haens[1], C.J. Buskens[2], E.J. de Groof[2], W.A. Bemelman[2], C.Y. Ponsioen[1]. [1]Dept. of Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Gastrointestinal Surgery, Academic Medical Center, Amsterdam, The Netherlands.

15.40 Optimal timing of ileocecal resection in Crohn's disease: clinical outcome after acute, early and late surgery
J.A.M. Sleutjes[1], E.M.J. Beelen[1], E.J.R. de Graaf[2], A.G.L. Bodelier[3], C.J. van der Woude[1], A.C. de Vries[3]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Surgery, IJsselland Hospital, , Capelle a/d IJssel, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Amphia Hospital, Breda, The Netherlands.

15.50 Long-term efficacy and safety of allogeneic bone marrow-derived mesenchymal stromal cells for perianal fistulas in patients with Crohn's disease: a 4-year follow-up study
M.C. Barnhoorn[1], I. Molendijk[1], B.A. Bonsing[2], H. Roelofs[3], P.W.J. Maljaars[1], K.C.M.J. Peeters[2], M.N.J.M. Wasser[4], L.E.M. Oosten[3], G. Dijkstra[5], C.J. van der Woude[6], M. Duijvestein[7], R.A. Veenendaal[1], J. Zwaginga[3], H.W. Verspaget[1], W.E. Fibbe[3], D.W. Hommes[1], A.E. van der Meulen - de Jong[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands. [3]Dept. of Immunohematology and Blood Transfusion, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Radiology, Leiden University Medical Center, Leiden, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands.

16.00 Implementation and evaluation of a screening and treatment protocol for the low anterior resection syndrome.
J.A.G. van der Heijden[1], M. van Heinsbergen[2], G. Thomas[1], F. Caers[1], G.D. Slooter[1], A.J.G. Maaskant-Braat[1]. [1]Dept. of Surgery, Máxima Medical Center, Eindhoven, The Netherlands. [2]Dept. of Surgery, Viecuri Medical Center, Venlo, The Netherlands.

16.10 Simultaneous resection of colorectal carcinoma and liver metastasis, a safe alternative
G.W. de Klein[1], G.A. Patijn[1], V.B. Nieuwenhuijs[1], M.S.L. Liem[2], J.M. Klaase[3], H.L. van Westreenen[1]. [1]Dept. of Surgery, Isala, Zwolle, The Netherlands. [2]Dept. of Surgery, Medisch Spectrum Twente, Enschede, The Netherlands. [3]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands.

16.20 Validation of the CLASSification of Intra-operative Complications (CLASSIC) score: a prospective cohort study of abdominal surgeries
R.P.G. ten Broek, P. Krielen, L. Gawria, M.W. Stommel, H. van Goor. Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands.

16.30 National Colorectal Cancer Screening Program: Increasing Number of Surgical Procedures Does Not Lead to More Complications
D. Bosch[1], L.W. Leicher[2], W.H. de Vos tot Nederveen Cappel[2], N.A.C. Vermeer[3], K.C.M.J. Peeters[3], H.L. van Westreenen[1]. [1]Dept. of Surgery, Isala, Zwolle, The Netherlands. [2]Dept. of Gastroenterology, Isala, Zwolle, The Netherlands. [3]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands.

16.40 A shared decision approach to chronic abdominal pain based on cine-MRI: a prospective cohort study
R.P.G. ten Broek[1], B.A.W. van den Beukel[1], M.W. Stommel[1], F. Joosten[2], H. van Goor[1]. [1]Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Radiology, Rijnstate Hospital, Arnhem, The Netherlands.

16.50 10 min over

17.00 Plenaire sessie in de Brabantzaal

18.15 Borrel

19.45 Lustrumdiner NVGE 105 jaar

Meet the Expertsessie **Zaal 80-81**

10.00 – 11.00 Sessie I
13.00 – 14.00 Sessie II

Thema: Bariatrie

Deze sessies – waarvoor tevoren moet worden ingeschreven - wordt verzorgd door
Dr. I.M.C. Janssen, chirurg, Rijnstate ziekenhuis, Arnhem
Dr. P.C. van de Meeberg, MDL-arts, Slingeland ziekenhuis, Doetichem
Dr. M.J.M. Groenen, MDL-arts, Rijnstate ziekenhuis, Arnhem

Meet the Expertsessie **Zaal 80-81**

10.00 – 11.00 Sessie I
13.00 – 14.00 Sessie II

Thema: Diverticulose

Deze sessies – waarvoor tevoren moet worden ingeschreven – worden verzorgd door
Dr. R.J.F. Felt-Bersma, MDL-arts, Amsterdam UMC (VUmc), Amsterdam
Dr. N. de Korte, chirurg, Spaarne Gasthuis, Hoofddorp

Seniorenprogramma **Zaal …..**

Voorzitters : *Prof. J.F.W.M. Bartelsman, MDL-arts, DC klinieken, Amsterdam*

13.00 Ontvangst met lunch

14.00 programma volgt

15.00 Theepauze

Videosessie - Sectie Gastrointestinale Endoscopie **Auditorium**

Voorzitters: *E.J. Schoon, MDL-arts, Catharina ziekenhuis, Eindhoven*
B.A.J. Bastiaansen, MDL-arts, Amsterdam UMC (AMC), Amsterdam

09.30 Een programma rond ingezonden endoscopie video's

11.00 Koffiepauze

Symposium NVGE **Auditorium**

Voorzitters: *Prof. dr. C.J. van der Woude, MDL-arts, Erasmus Medisch Centrum, Rotterdam*
Prof. dr. P.D. Siersema, MDL-arts, Radboudumc, Nijmegen

Diagnostiek en behandeling van zwangere patiënten met een MDL-aandoening

11.30 HELP: een zwangere patiente met leverfunctiestoornissen
Dr. A. de Lima-Karagiannis, MDL-arts, Erasmus University Medical Center, Rotterdam.

12.00 ERCP en coloscopie tijdens de zwangerschap
Dr. J.E. van Hooft, MDL-arts, Academic Medical Center, Amsterdam.

12.30 Gebruik van biologicals in de zwangerschap
Prof. dr C.J. van der Woude, MDL-arts, Erasmus University Medical Center, Rotterdam.

13.00 Lunchpauze

Symposium Sectie Neurogastroenterologie en Motiliteit **Auditorium**

Voorzitter: *A.J. van Bredenoord, MDL-arts, Amsterdam UMC (AMC), Amsterdam*

Symposium : "Clinical management of constipation"

14.00 Diagnostic work-up of a patient with constipation
T. Vanuytsel, Translational Research Center for Gastrointestinal Disorders (TARGID), Division of Gastroenterology and Hepatology, Leuven Intestinal Failure and Transplantation Center, University Hospital Leuven, Leuven, Belgium.

14.15 Medical treatment of constipation
Dr. D. Keszthelyi, MDL-arts, Maastricht University Medical Center, Maastricht.

14.30 Opiates and the effect on the GI tract
Prof. dr. A. Emmanuel, Dept. of Neuro Gastroenterology, University College London and Consultant Gastroenterologist at University College Hospital and the National Hospital for Neurology and Neurosurgery (Queen Square).

14.50 Constipation in children
Prof. dr. M.A. Benninga, MDL-arts, Academic Medical Center, Amsterdam.

15.10 Mysterious diseases of anorectum
Dr. T.J. Lam, MDL-arts, Rijnstate Hospital, Arnhem.

15.30 Einde programma

Benign Liver Tumor Group — Baroniezaal

Voorzitters: *Prof. dr. R.A. de Man, hepatoloog, Erasmus MC, Rotterdam*
Dr. J. Verheij, patholoog, Amsterdam UMC, Amsterdam

Symposium Benigne levertumoren - evolutie van diagnostiek en behandeling

10.00 *Keynote*: (Inhoud voordracht nog niet bevestigd!)
Moleculaire subtypering van het leveradenoom
Prof. dr. A.S.H. Gouw, patholoog, UMC Groningen

10.30 Benigne focale leverletsels in congestieve hepatopathie
Drs. I. Munsterman, MDL-arts i.o., Radboudumc, Nijmegen

10.40 Transarteriele embolisatie in de behandeling van leveradenomen
B. van Rosmalen, onderzoeker, Amsterdam UMC, Amsterdam

10.50 Leveradenomen in GSD-patiënten
M.P.D. Haring, onderzoeker, UMC Groningen

11.00 Pauze

Abstractsessie - Nederlandse Vereniging voor Gastroenterologie — Parkzaal

Voorzitters: *Prof. dr. L.P.S. Stassen, chirurg, Maastricht Universitair Medisch Centrum, Maastricht*
Dr. W.H. de Vos tot Nederveen Cappel, MDL-arts, Isala, Zwolle

09.30 Adding family history of colorectal cancer to the fit-based screening program in a dutch colorectal cancer screening population sample
V.H. Roos[1], F.G.J. Kallenberg[1], M. van der Vlugt[1], E.J.C. Bongers[2], C.M. Aalfs[3], P.M.M. Bossuyt[4], E. Dekker[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Mid-West, Foundation of Population Screening Mid-West, Amsterdam, The Netherlands. [3]Dept. of Clinical Genetics, Academic Medical Center, Amsterdam, The Netherlands. [4]Dept. of Epidemiology and Biostatistics, Academic Medical Center, Amsterdam, The Netherlands.

09.40 Practice and yield of CT-colonography in iFOBT positive individuals in the Dutch bowel cancer screening program, a 4 years' experience.
M.H.A. Lammertink[1], M.L.E. Bernsen[2], R.A.M. Niekel[2], B.W.M. Spanier[1]. [1]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [2]Dept. of Radiology, Rijnstate Hospital, Arnhem, The Netherlands.

09.50 scar-biopsies after malignant colorectal polypectomy of uncertain radicality
K.M. Gijsbers[1], Z. Post[1], A.D. Koch[2], E. Dekker[3], A.W.M. van Milligen de Wit[4], R.W.M. Schrauwen[5], E.M.W. Witteman[6], R. Slangen[7], R. Veenstra[8], L. Epping-Stippel[9], T. Bisseling[10], Y. Alderlieste[11], N. van Lelyveld[12], T.J. Tang[13], D.J. Bac[14], F. ter Borg[1], L.M.G. Moons[15]. [1]Dept. of Gastroenterology and Hepatology, Deventer Hospital, Deventer, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Amphia Hospital, Breda, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Bernhoven Hospital, Uden,

The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Canisius Wilhelmina Hospital, Nijmegen, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, HagaZiekenhuis, Den Haag, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Martini Hospital, Groningen, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Maasziekenhuis Pantein, Boxmeer, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Beatrix Hospital, Gorinchem, The Netherlands. [12]Dept. of Gastroenterology and Hepatology, Antonius Hospital, Nieuwegein, The Netherlands. [13]Dept. of Gastroenterology and Hepatology, IJsselland Hospital, Capelle a/d IJssel, The Netherlands. [14]Dept. of Gastroenterology and Hepatology, Hospital Gelderse Vallei, Ede, The Netherlands. [15]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands.

10.00 Genetic and morphologic dissection of the progression of intraductal papillary mucinous neoplasm to invasive pancreatic carcinoma

M. Noë[1], L. Brosens[2], N. Rezaee[3], K. Asrani[4], M. Skaro[4], V.P. Groot[3], P.H. Wu[5], M.T. Olson[4], S.M. Hong[6], S.J. Kim[6], M.J. Weiss[7], C.L. Wolfgang[7], M.A. Makary[3], J. He[3], J.L. Cameron[8], D. Wirtz[4], N.J. Roberts[9], G.J.A. Offerhaus[4], L.D. Wood[9], R.H. Hruban[9]. [1]Dept. of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. [2]Dept of Pathology, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Surgery, Sol Goldman Pancreatic Cancer Research Center, Baltimore, United States Of America. [4]Dept. of Pathology, Sol Goldman Pancreatic Cancer Research Center, Baltimore, United States Of America. [5]Dept. of Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, United States Of America. [6]Dept. of Pathology, Asan Medical Center, Seoul, South-Korea. [7]Dept. of Surgery, Johns Hopkins Hospital, Baltimore, United States Of America. [8]Dept. of Oncology, Sol Goldman Pancreatic Cancer Research Center, Baltimore, United States Of America. [9]Dept. of Pathology and Oncology, Sol Goldman Pancreatic Cancer Research Center, Baltimore, United States Of America.

10.10 Prevalence of Functional Gastro-Intestinal Diseases in patients with uncomplicated gallstones; a systematic review and meta-analysis

J.J. de Jong[1], C.S.S. Latenstein[2], J.J. Eppink[1], M.A. Lantinga[3], C.J.H.M. van Laarhoven[2], P.R. de Reuver[2], J.P.H. Drenth[1]. [1]Dept. of Gastroenterology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands. [3]Dept. of Gastroenterology, Jeroen Bosch Ziekenhuis, Den Haag, The Netherlands.

10.20 Is measurement of functional anal canal length useful in patients with faecal incontinence or constipation? A study using high-resolution anorectal manometry

P.F. Vollebregt[1], A.M.P. Rasijeff[1], D. Pares[2], U. Grossi[1], E.V. Carrington[1], C.H. Knowles[1], S.M. Scott[1]. [1]Centre for Trauma and Surgery and GI Physiology Unit, Queen Mary University of London, London, United Kingdom. [2]Dept. of Surgery, Hospital Germans Trías i Pujol, Barcelona, Spain.

11.00 Koffiepauze

Abstractsessie - Sectie Gastrointestinale Endoscopie **Parkzaal**

Voorzitters : *Dr. W.B. Nagengast, MDL-arts, Universitair Medisch Centrum Groningen, Groningen*
Dr. M.J.M. Groenen, MDL-arts, Rijnstate ziekenhuis, Arnhem

11.30 Endoscopic cryoballoon ablation for eradication of esophageal squamous cell neoplasia: 12-months results of a prospective cohort study in China.
S.N. van Munster[1], Y. Ke[2], J. Chen[3], F. Liu[4], D. Zhao[3], W. Li[2], S. He[2], Y. Zhang[2], L. Dou[2], Y. Liu[2], X. Liu[2], L. Xue[5], N. Lv[5], S.M. Dawsey[6], J.J.G.H.M Bergman[1], B.L.A.M. Weusten[7], G.Q. Wang[2]. [1]Dept. of gastroenterology and hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of endoscopy, Cancer Institute and Hospital, Chinese Academy of Medical Sciences, Beijing, China. [3]Dept. of endoscopy, Feicheng People's hospital, Feicheng, China. [4]Dept. of endoscopy, Donping People's Hospital, Donping, China. [5]Dept. of pathology, Cancer Institute and Hospital, Chinese Academy of Medical Sciences, Beijing, China. [6]Dept. of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, United States Of America. [7]Dept. of gastroenterology and hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands.

11.40 How to handle tissue specimens after endoscopic mucosal resection for Barrett's esophagus related neoplasia: a multicenter randomized trial comparing three specimen handling methods.
A. Overwater[1], K.E. van der Meulen[1], H.T. Künzli[1], E.J. Schoon[2], J.J.G.H.M Bergman[3], G.M. Raicu[4], C.A. Seldenrijk[4], B.L.A.M. Weusten[1]. [1]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [4]Dept. of Pathology DNA, St. Antonius Hospital, Nieuwegein, The Netherlands.

11.50 Artificial Intelligence identifies early Barrett's neoplasia in in-vivo biopsy-correlated Volumetric Laser Endomicroscopy images
M.R. Struyvenberg[1], F. van der Sommen[2], A.J. de Groof[1], J. van der Putten[2], E.J. Schoon[3], P.H.N. de With[2], W.L. Curvers[3], J.J. Bergman[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Electrical Engineering, Technical University Eindhoven, Eindhoven, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Catherina Hospital, Eindhoven, The Netherlands.

12.00 The argos project: computer aided detection system can detect barrett neoplasia on endoscopic images with high accuracy.
A.J. de Groof[1], F. van der Sommen[2], J. van der Putten[2], M.R. Struyvenberg[1], S. Zinger[2], W.L. Curvers[3], R. Bisschops[4], O. Pech[5], A. Meining[6], H. Neuhaus[7], E.J. Schoon[3], P.H. de With[2], J.J. Bergman[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Electrical Engineering, VCA group, Technical University Eindhoven, Eindhoven, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, University Hospital, Leuven, Belgium. [5]Dept. of Gastroenterology and interventional Endoscopy, Krankenhaus Barmherzige Brüder, Regensburg, Germany. [6]Dept. of Internal Medicine, Ulm University, Ulm, Germany. [7]Dept. of Internal Medicine, Evangelisches Krankenhaus, Düsseldorf, Germany.

12.10 Early diagnosis is associated with improved clinical outcome in benign esophageal perforations: an individual patient data meta-analysis
B.D. Vermeulen[1], B. van der Leeden[1], C. Rosman[2], P.D. Siersema[1]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands.

12.20 Measurement of mucosal mitochondrial oxygen during upper endoscopy as a potential novel test for the diagnosis of mesenteric ischemia

L.J.D. van Dijk[1], L.G. Terlouw[1], R. Ubbink[2], D. van Noord[3], E.G. Mik[2], M.J. Bruno[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Anesthesiology, Laboratory for Experimental Anesthesiology, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Franciscus Gasthuis & Vlietland, Rotterdam, The Netherlands.

12.30 Endoscopic resection of ampullary adenomas; a retrospective cohort study.

M.J. Beekman, P. Fockens, L. Boxhoorn, J.J.G.H.M Bergman, J.E. van Hooft, E.A. Rauws, R.P. Voermans. Dept. of Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands.

12.40 Complications after endoscopic resection of T1 colorectal carcinomas

S.E.M. van de Ven[1], Y. Backes[2], T.C.J. Seerden[3], K. Kessels[4], W.H. de Vos tot Nederveen Cappel[5], J.N. Groen[6], F.H.J. Wolfhagen[7], J.M.J. Geesing[8], J. van Bergeijk[9], B.W.M. Spanier[10], M.W. Mundt[11], H.J.M. Pullens[12], J.J. Boonstra[13], B. Opsteeg[14], L.M.G. Moons[2], J.S. Terhaar sive Droste[15], F. ter Borg[16]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Amphia Hospital, Breda, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Isala Clinics, Zwolle, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Sint Jansdal, Harderwijk, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Albert Schweitzer Hospital, Dordrecht, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, Diakonessenhuis, Utrecht, The Netherlands. [9]Dept. of Gastroenterology and Hepatology, Gelderse Vallei, Ede, The Netherlands. [10]Dept. of Gastroenterology and Hepatology, Rijnstate Hospital, Arnhem, The Netherlands. [11]Dept. of Gastroenterology and Hepatology, Flevo Hospital, Almere, The Netherlands. [12]Dept. of Gastroenterology and Hepatology, Meander Medical Center, Amersfoort, The Netherlands. [13]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [14]Dept. of Gastroenterology and Hepatology, Groene Hart Hospital, Gouda, The Netherlands. [15]Dept. of Gastroenterology and Hepatology, Jeroen Bosch Hospital, 's-Hertogenbosch, The Netherlands. [16]Dept. of Gastroenterology and Hepatology, Deventer Hospital, Deventer, The Netherlands.

12.50 10 min over

13.00 Lunchpauze

Abstractsessie - Sectie Gastrointestinale Oncologie **Zaal 81**

Voorzitters : *R.W.M. Schrauwen, MDL-arts, Bernhoven ziekenhuis, Uden*
M. Spaander, MDL-arts, Erasmus MC, Rotterdam

09.30 Primary Sclerosing Cholangitis-associated biliary neoplasia demonstrate a high inter- and intratumour heterogeneity of p53 and p16 protein expression
E.J.C.A. Kamp[1], M. Doukas[2], M.P. Peppelenbosch[1], M.J. Bruno[1], B. Groot Koerkamp[3], W.N.M. Dinjens[2], A.C. de Vries[1]. [1]Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands. [2]Dept. of Pathology, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands.

09.40 Survival of patients with distal cholangiocarcinoma: a population-based Dutch cohort
M. Strijker[1], A. Belkouz[2], L.G. van de Geest[3], O.R. Busch[1], T.M. van Gulik[1], J.E. van Hooft[4], J. Verheij[5], J.W. Wilmink[2], B. Groot Koerkamp[6], H.J. Klümpen[2], M.G. Besselink[1]. [1]Dept. of Surgery, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Medical Oncology, Academic Medical Center, Amsterdam, The Netherlands. [3]Dept. of Research, Netherlands Comprehensive Cancer Organization (IKNL), Utrecht, The Netherlands. [4]Dept. of Gastroenterology and hepatology, Academic Medical Center, Amsterdam, The Netherlands. [5]Dept. of Pathology, Academic Medical Center, Amsterdam, The Netherlands. [6]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands.

09.50 Quality of life and fear of cancer recurrence in T1 colorectal cancer patients treated with endoscopic or surgical tumour resection
H. Dang[1], W.H. de Vos tot Nederveen Cappel[2], S.M.S. van der Zwaan[1], M.E. van den Akker-van Marle[3], H.L. van Westreenen[4], Y. Backes[5], L.M.G. Moons[5], F.A. Holman[6], K.C.M.J. Peeters[6], J. van der Kraan[1], A.M.J. Langers[1], W.M. Lijfering[7], J.C.H. Hardwick[1], J.J. Boonstra[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Isala Hospital, Zwolle, The Netherlands. [3]Dept. of Medical Decision Making, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Surgery, Isala Hospital, Zwolle, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [6]Dept. of Surgery, Leiden University Medical Center, Leiden, The Netherlands. [7]Dept. of Clinical Epidemiology, Leiden University Medical Center, Leiden, The Netherlands.

10.00 Molecular profiling of longitudinally observed small colorectal polyps
M.C.J. van Lanschot[1], B. Carvalho[1], C.J. Tutein Nolthenius[2], C.R. Rausch[1], P. Snaebjörnsson[1], E.J. Kuipers[3], J. Stoker[2], E. Dekker[4], G.A. Meijer[1]. [1]Dept. of Pathology, Netherlands Cancer Institute, Amsterdam, [2]Dept. of Radiology, Academic Medical Center, Amsterdam, [3]Dept. of Gastroenterology, Erasmus University Medical Center, Rotterdam, [4]Dept. of Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands.

10.10 Recurrent and second primary cancers at the one year surveillance colonoscopy following curative colorectal cancer resection
M.C.J. van Lanschot[1], M.E. van Leerdam[2], I. Lansdorp-Vogelaar[3], S. Doets[1], I.D. Nagtegaal[4], R.W.M. van der Hulst[5], B. Carvalho[1], E. Dekker[6], A.M. van Berkel[7]. [1]Dept. of Pathology, Netherlands Cancer Institute, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology, Netherlands Cancer Institute, Amsterdam, The Netherlands. [3]Dept. of Public Health, Erasmus University Medical Center, Rotterdam, The Netherlands. [4]Dept. of Pathology, Radboud University Medical Center, Nijmegen, The Netherlands. [5]Dept. of Gastroenterology, Spaarne Gasthuis, Haarlem, The Netherlands. [6]Dept. of Gastroenterology, Academic Medical Center, Amsterdam, The Netherlands. [7]Dept. of Gastroenterology, Noordwest Hospital Group, Alkmaar, The Netherlands.

10.20 Quantitative Fluorescence Endoscopy: a new and promising tool to predict and evaluate response to neoadjuvant chemoradiotherapy in locally advanced rectal cancer patients.
S.J. de Jongh[1], J.J.J. Tjalma[1], M. Koller[1], M.D. Linssen[1], E. Hartmans[1], A. Jorritsma-Smit[2], A. Karrenbeld[3], E.G.E. de Vries[4], J.H. Kleibeuker[1], J.P. Pennings[5], K. Havenga[6], P.H.J. Hemmer[6], G.A.P. Hospers[4], B. van Etten[6], V. Ntziachristos[7], G.M. van Dam[6], D.J. Robinon[8], W.B. Nagengast[1]. [1]Dept. of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, The Netherlands. [2]Dept. of clinical pharmacy and pharmacology, University Medical Center Groningen, Groningen, The Netherlands. [3]Dept. of Pathology, University Medical Center Groningen, Groningen, The Netherlands. [4]Dept. of Medical Oncology, University Medical Center Groningen, Groningen, The Netherlands. [5]Dept. of Radiology, University Medical Center Groningen, Groningen, The Netherlands. [6]Dept. of Surgery, University Medical Center Groningen, Groningen, The Netherlands. [7]Institute for Biological and Medical Imaging, Technical University of Munich and Helmholtz Center Munich, Munich, Germany. [8]Dept. of Otolaryngology and Head and Neck Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands.

10.30 Patterns of recurrence in the CRITICS gastric cancer trial
R.M. van Amelsfoort[1], K. Sikorska[2], E.P.J. Jansen[1], A. Cats[3], N.C.T. van Grieken[4], H. Boot[3], P.A. Lind[5], E. Meershoek-Klein Kranenbarg[6], M. Nordsmark[7], H.H. Hartgrink[6], H. Putter[6], A.K. Trip[1], J.W. van Sandick[8], H. van Tinteren[2], Y.H.M. Claassen[6], J.P.B.M. Braak[6], H.W.M. van Laarhoven[9], C.J.H. van de Velde[6], M. Verheij[1]. [1]Dept. of Radiation Oncology, Netherlands Cancer Institute, Amsterdam, The Netherlands. [2]Dept. of Biostatistics, Netherlands Cancer Institute, Amsterdam, The Netherlands. [3]Dept. of Gastrointestinal Oncology, Netherlands Cancer Institute, Amsterdam, The Netherlands. [4]Dept. of Pathology, VU Medical Center, Amsterdam, The Netherlands. [5]Dept. of Oncology and Pathology, Karolinska Institutet, Stockholm, Sweden. [6]Dept. of Surgical Oncology, Leiden University Medical Center, Leiden, The Netherlands. [7]Dept. of Oncology, Aarhus University Hospital, Aarhus, Denmark. [8]Dept. of Surgical Oncology, Netherlands Cancer Institute, Amsterdam, The Netherlands. [9]Dept. of Medical Oncology, Academic Medical Center, Amsterdam, The Netherlands.

10.40 Factors associated with pathological complete response after neoadjuvant chemo-radiotherapy in patients with oesophageal cancer: results from a nationwide study.
A. Al-Kaabi[1], L.R. van der Werf[2], B.P.L. Wijnhoven[2], C. Rosman[3], R.S. van der Post[4], M.C.C.M. Hulshof[5], H.W.M. van Laarhoven[6], R. Verhoeven[7], P.D. Siersema[1]. [1]Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands. [2]Dept. of Surgery, Erasmus University Medical Center, Rotterdam, The Netherlands. [3]Dept. of Surgery, Radboud University Medical Center, Nijmegen, The Netherlands. [4]Dept. of Pathology, Radboud University Medical Center, Nijmegen, The Netherlands. [5]Dept. of Radiotherapy, Academic Medical Center, Amsterdam, The Netherlands. [6]Dept. of Medical oncology, Academic Medical Center, Amsterdam, The Netherlands. [7]IKNL, Amsterdam, The Netherlands.

10.50 **Ledenvergadering - Sectie Gastrointestinale Oncologie**

11.00 Pauze expositiehal

Symposium - NESPEN 'Nutrition, the 2018 update' — Zaal 80

Voorzitters : *Dr. I.A.M. Gisbertz, MDL-arts, Bernhoven ziekenhuis, Uden*
W. Kuin, verpleegkundig specialist, Noordwest Ziekenhuisgroep, Alkmaar

09.30 Rapid diagnosis of bloodstream infections in patients on home parenteral nutrition
Y. Wouters, D. Dalloyaux, H. Roelofs, R. Te Morsche, G. Wanten. Dept. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands.

09.45 No evidence for increased risk for candidaemia in the presence of polymorphisms in the CD58, LCE4A-Clorf68 and TAGAP loci in home parenteral nutrition patients
Y. Wouters, H. Roelofs, G. Wanten. Dept.. of Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, The Netherlands.

10.00 Refeeding anno 2018
Dr. A. van Zanten, Internist-intensivist, Ziekenhuis Gelderse Vallei, Ede.

10.30 Feeding interventions in IBD patients
Prof. dr. B.J.M. Witteman, MDL-arts, Ziekenhuis Gelderse Vallei, Ede.

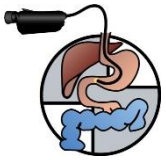
Meet the Expertsessie — Zaal 80

14.00 – 15.00

Thema: Management van ernstige colitis 2019

Deze sessie – waarvoor tevoren moet worden ingeschreven - wordt verzorgd door
Prof. dr. L.P.S. Stassen, chirurg, Maastricht University Medical Center, Maastricht
Prof. dr. C.J. van der Woude, MDL-arts, Erasmus MC, Rotterdam

V&VN ochtendprogramma I **Brabantzaal**



Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *Mw. T.A. Korpershoek, voorzitter V&VN MDL*

Thema: MDL algemeen

09.25 Welkom
T.A. Korpershoek, voorzitter V&VN MDL.

09.30 Galstenen
Dr. M.A. Lantinga, aios MDL, Jeroen Bosch Ziekenhuis, 's Hertogenbosch.

09.50 Percutane Transhepatische Cholangiografie drainage
Dr. M.C. Niekel, fellow interventie radiologie, University Medical Center Utrecht, Utrecht.

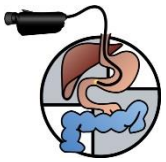
10.10 Familial Adenomatous Polyposis
Dr. A.M.J. Langers, MDL-arts, Leids Universitair Medisch Centrum, Leiden.

10.30 Coeliakie
Prof. dr. M.L. Mearin Manrique, kinderarts MDL, Leids Universitair Medisch Centrum, Leiden.

10.50 Primair Scleroserende Cholangitis (PSC) en IBD
Dr. D. de Jong, MDL-arts, Radboudumc, Nijmegen.

11.10 Pauze

V&VN ochtendprogramma II **Brabantzaal**



Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *Mw. E. Sprong*

Thema: Endoscopie

11.40 ERCP en lithotripsy
Drs. M.L. van Ierland-van Leeuwen, MDL-arts, OLVG, Amsterdam

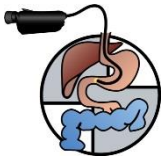
12.00 Syndroom van Boerhaave
Prof. dr. P.D. Siersema, MDL-arts, Radboudumc, Nijmegen

12.20 BVO-De ontwikkeling en resultaten
E. Humer, manager bevolkingsonderzoek darmkanker Midden-West

12.40 Toekomstvisie Endoscopie
Dr. P. Didden, MDL-arts, Universitair Medisch Centrum Utrecht, Utrecht

13.00 Pauze

V&VN ochtendprogramma III — Zaal 63-64



Voorzitters : *Mw. N. Ipenburg*

Thema: MDL chirurgie / oncologie

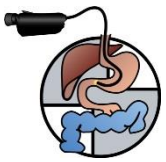
11.40 Zeldzame ziekten: NET en NEC kanker, perspectief vanuit zorgverlener en patiënt
Dr. W.H.M. Verbeek, MDL-arts, NKI-AVL, Amsterdam
Mw. C. Kleinegris, gezondheidsvoorlichter

12.00 Colorectaal carcinoom: de oudere patiënt
Mw. N. Hoogerbrugge, verpleegkundig specialist GE-chirurgie/klinische geriatrie Maasstad ziekenhuis, Rotterdam

12.20 Het nut van darmkanker screening: discussie/tandemtalk tussen MDL-arts en chirurg
Dr. A.M.J. Langers, MDL-arts, Leids Universitair Medisch Centrum, Leiden
Prof. dr. J. A. Roukema, oncologisch chirurg, Tweestedenziekenhuis, Tilburg

13.00 Pauze

V&VN ochtendprogramma IV — Baroniezaal



Voorzitters : *Mw. C. Verstraete*

Thema: Lever

11.40 Benigne tumoren van de lever
Drs. A.J. Klompenhouwer, arts-onderzoeker heelkunde, Erasmus MC, Rotterdam

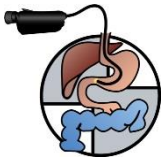
12.00 Psychosociale ondersteuning bij patiënten met primaire levertumoren
Mw. J.I. Franken, verpleegkundig specialist, Erasmus MC, Rotterdam

12.20 Chirurgische behandelingen van HCC
Dr. M.M.E. Coolsen, chirurg-oncoloog, Maastricht Universitair Medisch Centrum, Maastricht

12.40 HCC: Diagnose en lokale behandelingen
Dr. M.J. Coenraad, MDL-arts, Leids Universitair Medisch Centrum, Leiden

13.00 Pauze

V&VN middagprogramma I — Brabantzaal



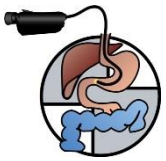
Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *Mw. R. van Rhee*

Thema: Endoscopie

14.00	EUS: FNA / FNB *Dr. J.J. Boonstra, MDL-arts, Leids Universitair Medisch Centrum, Leiden*
14.25	Angst bij endoscopie *Mw. M.M.J. ten Veldhuis, gezondheidspsycholoog, Noordwest ziekenhuisgroep, Alkmaar*
14.50	Endoscopisch hechten: Overstitch *Dr. M.J.M. Groenen, MDL-arts, Rijnstate ziekenhuis, Arnhem*
14.15	Behandeling van naadlekkages na chirurgie met endoscopische EndoVAC *Dr. T. Lubbers, chirurg, Maastricht Universitair Medisch Centrum, Maastricht*
15.40	Borrel

V&VN middagprogramma II — Zaal 63-64



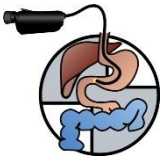
Beroepsvereniging van zorgprofessionals
Maag Darm Lever

Voorzitters : *Mw. A. Boersen*

Thema: Verpleegkundig endoscopisten

14.00	Wat valt er nog meer te beleven wanneer je achter die patiënt zit? *Dr. H.P.M. Festen, gepensioneerd MDL-arts, Jeroen Bosch ziekenhuis, 's Hertogenbosch*
14.25	Rol van de verpleegkundig endoscopist op de kamer *Mw. B. Birza, verpleegkundig endoscopist, Rijnstate ziekenhuis, Arnhem*
14.50	Anticoagulantie bij coloscopie *Dr. P.P.J. van der Veek, MDL-arts, Haaglanden MC, Den Haag*
14.15	Slecht nieuws brengen na endoscopie *Mw. M.M.J. ten Veldhuis, gezondheidspsycholoog, Noordwest ziekenhuisgroep, Alkmaar*
15.40	Borrel

V&VN middagprogramma III **Baroniezaal**



Voorzitters : *Mw. M. Verweij*

Thema: IBD

14.00 Transitie
Mw. M.A.C. van Gaalen, verpleegkundig specialist kinder MDL, Erasmus MC, Rotterdam

14.25 Voeding en IBD
Dr. P.W.J. Maljaars, MDL-arts, Leids Universitair Medisch Centrum, Leiden

14.50 Seksualiteit
Mw. S. Speelman, GZ-psycholoog, seksuoloog NVVS i.o., Máxima Medisch Centrum, Eindhoven

14.15 Vaccinaties en opportunistische infectie
Dr. Q. de Mast, internist-infectieziekten, Radboudumc, Nijmegen

15.40 Borrel

Children from coeliac families benefit from early diagnosis and treatment: an analysis of the PreventCD cohort

C.R. Meijer-Boekel[1], R. Auricchio[2], G. Castillejo[3], P. Crespo Escobar[4], J. Gyimesi[5], C. Hartman[6], S. Kolacek[7], S. Koletzko[8], I. Korponay-Szabo[9], E. Martinez Ojinaga Nodal[10], M. Piescik-Lech[11], I. Polanco[10], C. Ribes Koninckx[4], R. Shamir[12], H. Szajewska[11], P. Szillat[13], R. Troncone[14], K. Werkstetter[15], M. Mearin[1]. [1]Dept. of Pediatrics, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Translational Medical Science, Section of Paediatrics and European, University "Federico II", Naples, Italy. [3]Dept. of Pediatric Gastroenterology Unit, Hospital Universitario Sant Joan de Reus, Reus, Spain. [4]Dept. of Pediatric Gastroenterology and Hepatology, La Fe University Hospital, Valencia, Spain. [5]Dept. of Paediatrics, Heim Pál Children's Hospital, Budapest, Hungary. [6]Institute of Gastroenterology, Nutrition and Liver Diseases, Schneider Children's Medical Center of Israel, Petach Tikva, Israel. [7]Dept. of Pediatric Gastroenterology and Nutrition, Zagreb University Medical School, Referral Center Pediatric Gastroenterology and, Zagreb, Croatia. [8]Dr. von Hauner Children's Hospital, LMU - Ludwig Maximilian's University Munich Medical Center, Munich, Germany. [9]Dept. of Paediatrics, University of Debrecen and Heim Pál Children's Hospital, Debrecen and Budapest, Hungary. [10]Dept. of Pediatric Gastroenterology and Nutrition, La Paz University Hospital, Madrid, Spain. [11]Dept. of Paediatrics, The Medical University of Warsaw, Warsaw, Poland. [12]Institute of Gastroenterology, Nutrition and Liver Diseases, The Netherlands. [13]Thermofisher, Freiburg, Germany. [14]Dept. of Translational Medical Science, Section of Paediatrics and European, University "Federico II", Naples, Italy. [15]Dr. von Hauner Children's Hospital, Munich, LMU - Ludwig Maximilian's University Munich Medical Center, Munich, Germany.

Objectives and study: Because of their increased risk for coeliac disease (CD), ESPGHAN and other guidelines advise to screen children with affected first-degree relatives. However, in the literature there is little information about the benefit of early diagnosis and treatment in these children. Our aim was to prospectively assess whether children from coeliac families benefit from screening, early diagnosis and treatment.

Methods: We analyzed the data from the European, multicentre PreventCD cohort involving 944 newborns recruited from 2007-2010, who are being prospectively assessed for CD development. All the children are positive for HLA-DQ2 and/or HLADQ8 and have at least one first-degree relative with CD. Health status using (parental) questionnaires on CD-related symptoms and CD antibodies (IgA against transglutaminase 2 (TGA)) were assessed at the age of 4, 6, 9, 12, 18, 24 and 36 months, and thereafter at least every two years (www.preventcd.com). TGA was centrally measured using from 2007-2014 the Celikey Varelisa test and from 2015, the Celikey ELIA method, with cut-off values of 5 U/ml and 7 U/ml respectively. If the children presented symptoms and/or increased TGA level indicating CD, diagnostic small bowel biopsies were offered. The biopsies were assessed centrally by an independent pathologist blinded to the clinical and antibody results. All CD diagnoses were discussed and agreed upon by the diagnostic committee of PreventCD. Measured outcomes were improvement of the reported symptoms and of TGA level on a gluten-free diet (GFD) at follow up 1 and 2 years after diagnosis.

Results: As on 01 December 2017, 130 children (mean age: 9.1 years; range: 7.3-10.9; 59.8% female) had been diagnosed with CD at a mean age of 3.8 years (range: 1.1- 9.2). Since 4 asymptomatic CD children did not follow a GFD, 126 CD children were included in this analysis. Seventy-one children (56.3%) were symptomatic at diagnosis and reported one or more symptoms. In total 80.0% and 87.8% of the symptomatic children at diagnosis were symptom-free after one and two year on a GFD, respectively. All symptoms at diagnosis, except constipation and vomiting, significantly improved after treatment. The mean TGA level in symptomatic children decreased from 81.2 U/mL to 4.0 U/mL and 2.2 U/mL after one and two year of treatment, respectively.

Conclusion: Our prospective data show that most children from CD families develop the disease very early in life and about half of them have CD-related symptoms that improve significantly after treatment with a GFD. These results support early screening, diagnosis and treatment in children from CD families.

Endoscopic full-thickness resection of colorectal lesions - a nationwide prospective cohort study

L.W. Zwager[1], M.E.S. Bronzwaer[1], B.W. van der Spek[2], G.D.N. Heine[2], K.J.C. Haasnoot[2], J.J. Boonstra[3], W.R. ten Hove[4], L.E. Perk[5], S.T. Rietdijk[6], H. van der Sluis[7], B.L.A.M. Weusten[8], P. Fockens[1], B.A.J. Bastiaansen[1]. [1]Dept. of Gastroenterology and Hepatology, Academic Medical Center, Amsterdam, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, Noordwest Hospital Group, Alkmaar, The Netherlands. [3]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [4]Dept. of Gastroenterology and Hepatology, Alrijne Medical Group, Leiden, The Netherlands. [5]Dept. of Gastroenterology and Hepatology, Haaglanden Medical Center, Den Haag, The Netherlands. [6]Dept. of Gastroenterology and Hepatology, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands. [7]Dept. of Gastroenterology and Hepatology, Isala Clinics, Zwolle, The Netherlands. [8]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Utrecht, The Netherlands.

Background: A subset of colorectal lesions is not amenable to resection with conventional polypectomy techniques due to an increased risk of incomplete resection or perforation. In particular non-lifting polyps, polyps located at difficult anatomic locations, early colorectal cancer (CRC) and submucosal tumors are challenging to remove en bloc. Recently endoscopic full thickness resection (eFTR) was introduced to allow definite diagnosis and radical treatment of these lesions that otherwise might have required surgical resection. Our objectives were to evaluate technical success and safety of all eFTR procedures performed in the Netherlands with the full thickness resection device (FTRD, Ovesco Endoscopy, Tübingen, Germany).
Methods: All patients undergoing an eFTR procedure between September 2015 and May 2018 in 20 Dutch hospitals were included for analysis. To determine the technical success, we studied the number of macroscopically complete (no macroscopic evidence of residual lesion judged by the endoscopist) en bloc resections. Secondary endpoints were the number of histologically confirmed radical (R0) resections, histologically confirmed full-thickness resections and adverse events.
Results: This prospective multicenter study included 303 procedures in 299 patients (mean age 68.5 ± 8.7 years, 61.2% male). Technical success rate was 82.5% (250/303). In 8.6% (26/303) the target lesion could not be reached, pulled into the cap or successfully clipped. eFTR was performed for T1 CRC related indications (n=177), difficult adenomas (n=111), submucosal tumors (n=14) and one diagnostic procedure for a suspected motility disorder. R0 resection rate was 72.3% (219/303) and full thickness resection was histologically confirmed in 77.6% (235/303) of all cases. The median diameter of the resected target lesion was 12.0 mm (IQR 8.0-17.0) and the median diameter of the resected specimen was 23.0 mm (IQR 20.0-28.0). Overall complication rate was 9.9% (30/303) and 3.0% (9/303) required emergency surgery (5 delayed perforations, 1 direct perforation and 3 secondary appendicitis cases. Peri-procedural bleeding occurred in 17 patients (17/303, 5.6%), one patient required blood transfusion.
Conclusion: Endoscopic full-thickness resection appears to be a feasible and relatively safe technique in our prospective cohort and can offer a minimally invasive alternative approach for surgical resection of complex colorectal lesions. However, safety concerns, in particular related to delayed perforation risk and need for emergency surgery need further assessment.

Laparoscopic versus Open Pancreatoduodenectomy (LEOPARD-2): a Multicenter Randomized Controlled Trial

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Introduction: Laparoscopic pancreatoduodenectomy (LPD) may improve postoperative recovery but concerns exist regarding increased pancreatic fistula rates and, in low-volume centers, increased mortality. In the Netherlands, LPD was introduced within the LAELAPS-2 training program (114 LPDs, 3.5% 90-day mortality), followed by a randomized controlled trial (RCT).
Method: This multicenter patient-blinded RCT was performed in 4 centers that each perform ≥20 pancreatoduodenectomies annually (median 37 (range 23-77)), completed the LPD training program, and had performed ≥20 LPDs (range 23-34). Patients with a neoplasm without signs of vascular involvement were included. Primary outcome was time (days) to functional recovery.
Results: The LEOPARD-2 trial was stopped prematurely after 99 of the projected 136 patients were included because of a difference in 90-day complication-related mortality (LPD 5/50(10%) vs. OPD 1/49(2%), P=0.20). Time to functional recovery was 9 days (95%CI 6-12) after LPD versus 8 days (95%CI 6-10) after OPD (P=0.90). The conversion rate of LPD was 20%. Operative blood loss was 300 versus 400 mL (P=0.20) and operative time 391 versus 235 minutes (P=0.001), for LPD and OPD respectively. Clavien-Dindo ≥3 complications (25(50%) versus 20(41%), P=0.40), pancreatic fistula (B/C) (15(30%) versus 14(29%), P=0.90), hepaticojejunostomy leakage (B/C) (5(10%) versus 6(12%), P=0.2), and hospital stay (11 versus 10 days, P=0.60) were comparable for LPD and OPD.
Conclusion: This early terminated randomized multicenter trial showed comparable time to functional recovery, and morbidity after LPD versus OPD. The high mortality rate after LPD is worrisome and does not align with the prior training program.

Therapeutic drug monitoring of adalimumab in inflammatory bowel disease patients in a teaching hospital setting: results of a prospective cohort study

W. van 't Geloof[1], P.J. Boekema[2], L.P.L. Gilissen[3], M.A.C. Broeren[4], L.J.J. Derijks[1]. [1]Dept. of Clinical Pharmacy, Maxima Medical Center, Veldhoven, The Netherlands. [2]Dept. of Gastroenterology, Maxima Medical Center, Veldhoven, The Netherlands. [3]Dept. of Gastroenterology, Catharina Hospital, Eindhoven, The Netherlands. [4]Dept. of Clinical Laboratory, Maxima Medical Center, Veldhoven, The Netherlands.

Background: Adalimumab (ADA) trough levels correlate with clinical remission. Despite suggestions that therapeutic drug monitoring (TDM) of ADA can optimize treatment in this population, it is not yet implemented in clinical practice. This study was conducted to provide more insight in ADA trough levels and antibodies to adalimumab (ATA) in an inflammatory bowel disease (IBD) population already treated with adalimumab. We carried out a prospective cohort study in IBD outpatients already treated with adalimumab. The primary goal of this study was to investigate whether there is a relationship between ADA trough levels and remission in our IBD cohort.
Methods: The study was conducted in two teachinh hospitals. Patient characteristics, comedication, and ADA dose interval were collected from the electronic hospital information system (EZIS, HiX-Chipsoft). Blood was drawn for determination of ADA trough levels and ATA's. A combined questionnaire was developed to calculate the Crohn's Disease Activity Index (CDAI) and the Truelove–Witts Disease Activity Index (TWDAI). Remission was achieved if the CDAI score was below 150 points and the TWDAI was below 6 points. The questionnaire was filled in by the patient in the same week the blood was drawn. Physical well-being such as the presence and severity of abdominal pain, stool, and complications (fistula, fissures, arthralgia/itis, and erythema nodosum) was noted. Patients were asked to score quality-of-life as a Visual Analog Scale (VAS) score.
Results: A total of 92 patients was included. ADA levels varied from < 0.1 to 20.2 mg/L. Mean ADA level was 7.7 mg/L (SD 4.5). Six patients (6,5%) had a ADA trough level < 1mg/L. Four patients (4,3%) demonstrated antibodies against adalimumab. ADA levels ≤ 5 mg/L were demonstrated in 29% of patients. The ADA level was not significantly associated with remission (p=0.467). Quality of life score correlated with ADA level (0,204;p=0.051).
Conclusion: TDM of adalimumab in IBD outpatients revealed large interindividual differences in adalimumab trough levels. Adalimumab trough levels were subtherapeutic in a significant part of IBD patients. TDM has the potential to individualize treatment in IBD patients using adalimumab.

The use of autologous hematopoietic stem cell transplantation as rescue therapy for refractory Crohn's disease

N. Mahmmod[1], S. Mahmmod[2], H.R. Koene[3], B. Oldenburg[2], H.H. Fidder[2]. [1]Dept. of Gastroenterology and Hepatology, St. Antonius Hospital, Nieuwegein, The Netherlands. [2]Dept. of Gastroenterology and Hepatology, University Medical Center Utrecht, Utrecht, The Netherlands. [3]Dept. of Hematology, St. Antonius Hospital, Nieuwegein, The Netherlands.

Background: Immunologic processes play an important role in the pathophysiology of Crohn's disease (CD). Autologous hematopoietic stem cell transplantation (AHSCT) may be an effective last resort treatment for patients with refractory CD. The aim of this study was to assess the clinical benefit of AHSCT in patients with refractory CD. The secondary aim was to evaluate the impact on quality of life (QoL).
Methods: An open-label non-randomized prospective study, in adult patients with refractory CD was performed in two centers. Between 2014-2017 patients from six university hospitals were recruited for AHSCT. The primary outcome was sustained remission at one year defined as clinical remission (CDAI < 150), no use of immunosuppressives or biologicals for the last three months, and no endoscopic or radiologic evidence of active disease. Secondary endpoints were the separate components of the primary combined outcome and QoL.
Results: Eight patients, (62.5% F, median age 49 years (IQR 41.2 – 57.0) underwent AHSCT. Seven patients completed a follow-up > 52-weeks. None of the patients reached the combined primary endpoint at week 52. However, 3/5 (60%) patients reached clinical remission defined as CDAI <150, and a fourth had a significant decrease of 100 points in the CDAI. The CDAI was not measured in 2 patients, because of entero/colostomies. In 2/6 (33.3%) patients no radiologic and in another 2/6 (33.3%) no endoscopic active disease was reported. In 4/7 (57.0%) patients QoL significantly increased (IBDQ increase of >16 points), range 28-49 points. The median IBDQ of 7 patients increased from median 128 (IQR 123 - 145) to 156 (IQR 131 - 156). All patients were discharged within four weeks after AHSCT. In total 35 adverse events were reported of which eight were considered serious.
Conclusion: Although the combined primary endpoint was not reached, we observed clinical benefit in more than half of the patients with refractory CD, treated with AHSCT. This is an important achievement in patients with refractory CD, for whom therapeutic options are exhausted. We believe that these results support the use of AHSCT as a last resort therapy for a very selected group of patients.

Binding properties of vedolizumab in peripheral blood and gut mucosal cells from IBD patients

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Background: The new biological vedolizumab (anti-a4b7) blocks migration of leukocytes from the vasculature into the gut. Treatment leads to steroid-free sustained remission in ~30% of patients with Crohn's disease (CD) and ulcerative colitis (UC). However, this remission is reached faster in UC, making treatment with vedolizumab more cost-efficient in UC than in CD[1]. A profound understanding of vedolizumab binding capacities on both peripheral blood and intestinal immune cells is necessary to explain this difference in effect of therapy between CD and UC.
Methods: Peripheral blood from patients with CD, UC and healthy controls (HC) and biopsies from the mildly inflamed gut of patients with CD and UC were collected prior to vedolizumab treatment. Intestinal biopsies were dissociated into cell suspensions from the epithelial layer and lamina propria separately. We engineered fluorescent-labeled vedolizumab to assess the proportion of vedolizumab binding, and the level of vedolizumab binding in different cell types, using flow cytometry.
Results: Vedolizumab binds to a variety of peripheral blood immune cells ($CD4^+$ T cells, $CD8^+$ T cells, B cells, eosinophils, NK cells and monocytes). The highest proportion of vedolizumab-bound cells was found in eosinophils (median 91% [IQR 83-94]), B cells (median 84% [IQR 75-92]) and gut mucosa directed $CD4^+CD38^+CD62L^-$ T cells[2] (median 82% [IQR 68-91]). Gut mucosa directed $CD4^+$ T cells show a significantly higher level of binding than other $CD4^+$ T cells, $CD8^+$ T cells and B cells ($P<0.0001$). Within the intestinal mucosa, vedolizumab mainly binds lamina propria cells, with the highest binding proportions and level of binding in $CD8^+$ T cells from the terminal ileum (median 64% [IQR 28-94]). No significant differences were found between CD, UC and HC.
Conclusion: Differences in proportion and level of vedolizumab-binding prior to treatment with vedolizumab do not explain the difference in treatment outcome between CD and UC. These results provide baseline data for correlating vedolizumab binding properties to clinical response in IBD patients.

Faecal calprotectin is a reliable marker for endoscopic and histological IBD activity at week 16 after initiation of vedolizumab

R.W.M. Pauwels, A.C. de Vries, C.J. van der Woude. Dept. of Gastroenterology and Hepatology, Erasmus University Medical Center, Rotterdam, The Netherlands.

A reliable non-invasive marker for response to vedolizumab (VDZ) has the potential to guide clinical decisions on (dis)continuation or therapy optimization. We aimed to assess the correlation between faecal calprotectin (FC) and endoscopic disease activity at week 16 after initiation of VDZ.
IBD patients who started VDZ between Oct '14 and Jan '18 were included. FC and endoscopic disease activity were assessed at baseline and at week 16. Correlation between FC, delta (∆) FC (FC at baseline – FC at week 16) and endoscopic response, remission and histological remission were assessed using Spearman and ROC statistics. Endoscopic response was defined as SES-CD reduction ≥50%, Rutgeerts' score reduction or MAYO score reduction ≥1. Endoscopic remission was for CD as SES-CD ≤2 or Rutgeerts' score ≤1 and for IBDU and UC as endoscopic MAYO score 0 . Histological remission was defined as no histological disease activity in intestinal biopsies.
In total 58 CD, 33 UC and 8 IBDU patients (men: 39%, median (IQR) age: 38 years (29–48) were started on VDZ. Data on endoscopy and FC at week 16 were available in n= 39/22/5 patients, and histology in n= 14/7/0 patients. Sixty patients (91%) had received previous anti-TNFα therapy, 52 (79%) were anti-TNF refractory. In 43 patients (65%) VDZ was combined with corticosteroid induction therapy and completely tapered at week 16 in 33 (77%) patients. FC at week 16 was significantly correlated to week 16 endoscopic response and endoscopic remission with (r -0.67 and -0.35 respectively; p <0.01)). Week 16 FC was significantly correlated to histological remission (r 0.85). FC ≤ 250 µg/g predicted endoscopic response (AUC=0.89, PPV=87%, sensitivity=73% ,specificity=86%) and histological remission (AUC=0.95, PPV=86%, sensitivity 86%, specificity 93%). FC ≥ 450 µg/g predicted no endoscopic response (NPV=86%, sensitivity 89%, specificity 86%) and no histological remission (NPV=100%, sensitivity 100%, specificity 79%). In addition, a ∆FC between baseline and week 16 was significantly correlated to week 16 endoscopic response (r 0.49) but not to endoscopic remission nor to histologic remission.
Conclusion: FC levels correlate strongly to endoscopic and histological disease activity at week 16 after initiation of VDZ. FC at week 16 discriminates patients with endoscopic response from endoscopic non-response, and has the potential to guide therapeutic decisions.

Fatigue in Quiescent Inflammatory Bowel Disease is Associated with Low GM-CSF levels and Metabolomic Alterations

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Introduction: Fatigue is common in patients with inflammatory bowel disease (IBD: Crohn's disease (CD), ulcerative colitis (UC)) with profound impairment of health-related quality of life. However, it remains poorly understood and consequently difficult to treat. While active disease and nutritional deficiencies contribute to fatigue in some patients, up to 40% of patients with quiescent IBD report significant fatigue in the absence of overt causes. We examined whether subclinical inflammation or metabolomic abnormalities contribute to fatigue in a prospective cohort.

Methods: This prospective study enrolled patients with quiescent CD and UC defined as clinical remission and a colonoscopy within 1 year which demonstrated no active disease. Fatigue was assessed using the Multidimensional Fatigue Inventory (MFI) and the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) scores. A FACIT-F score < 43 indicated significant fatigue. Serum samples from each parent were analyzed for a panel of 25 inflammatory cytokines and targeted metabolomics.

Results**:** Our study included 87 IBD (58 CD, 29 UC) patients in remission with a mean age of 40 years and disease duration of 13.6 years. The mean MFI was significantly higher (56 vs. 34) and FACIT lower (31 vs. 48) in patients with significant fatigue ($p < 0.0001$). Those with significant fatigue reported lower SIBDQ scores (50 vs. 63) and greater anxiety (53 vs 43), depression (49 vs 43) and disturbed sleep t-scores (50 vs 43) compared to those without ($p < 0.001$). There were no differences in disease related characteristics, demographics, or medication use between the two groups. Analysis of the log-transformed cytokine levels demonstrated significantly lower G-CSF ($p=0.02$), GM-CSF ($p=0.003$), and lymphotoxin α ($p=0.069$) in patients with fatigue. None of the inflammatory cytokines were elevated in fatigue. On metabolomic profiling, 15 metabolites were significantly different between those with and without fatigue (4 down-regulated, 11 up-regulated). Key differences were identified in three pathways - pyrimidine metabolism, branched chain amino acid biosynthesis (valine, leucine, isoleucine), and glyoxylate and dicarboxylate metabolism.

Conclusion: Fatigue in IBD patients in remission is not due to a subclinical pro-inflammatory state. Rather, more complex immune dysregulation and metabolomic abnormalities, particularly in branched chain amino acid metabolism, contribute to this disabling symptom and could be therapeutic targets.

Comparison of resting metabolic rate in patients with active crohn's disease and crohn's disease in remission

E. van Lingen[1], L. Onderstal- van Batenburg[2], I. Molendijk[1], M.E. Van Veen - Lievaart[2], G.D. Hopman[2], J.E.W. Martens[1], M.E.J. Steenhuis[1], S. van der Marel[1], P.W.J. Maljaars[1]. [1]Dept. of Gastroenterology and Hepatology, Leiden University Medical Center, Leiden, The Netherlands. [2]Dept. of Dietetics, Leiden University Medical Center, Leiden, The Netherlands.

Background: Both Crohn's disease (CD) patients and gastroenterologists have emerging interest in dietary interventions as an add-on to regular treatment. However, to design dietary interventions, the expected energy requirement is important. The latest ESPEN guideline states that energy requirements are not influenced by activity of CD. However, evidence for this statement is poor.
Objectives: The aim of our study was to compare the resting metabolic rate (RMR) of patients with active CD and CD in remission using the Fitmate to be able to personalize dietary advises.
Methods: Patients with either active or quiescent CD and age ≥18 years were included. Active CD was defined as a fecal calprotectin (FCP) level ≥150 µg/g. Body Mass Index (BMI) and fat free mass (FFM) were assessed with the Bioelectrical impedance analysis (BIA, GLNP Life Sciences, Breda, The Netherlands), a commonly used method for estimating body composition. In addition, the RMR was determined using the Fitmate (Fitmate, COSMED, Rome, Italy). The Fitmate is a scientifically validated indirect calorimetry for the measurement of the RMR. We calculated the RMR of healthy persons with identical sex, age, body length and body weight using the Harris Benedict equation (HBE) resulting in an estimated RMR.
To be able to compare the measured RMR in CD patients with the estimated RMR in healthy persons, we used the equation %HB= (RMR Fitmate/RMR HBE) x100%. Finally we compared the %HB of patients with active with patients with quiescent CD.
Results: In total, 25 patients were included, of which 13 suffered from active CD. The mean age was 48.3 years (±15.9), sixteen patients were female. Median FCP was higher in the active group, 323.5 µg/g (155.0-1935.0) vs 32.0 µg/g (7.0-102.0) (p=0.006). The mean BMI and mean fat free mass did not differ between groups. Mean RMR by Fitmate in the active group was 1350.8 kcal/24h (±227.8) compared to 1462.6 kcal/24h (±278.6) in the remission group. Mean estimated RMR by HBE was 1528.6 kcal/24h (±229.7) in the active group and 1559.8 kcal/24h (±311.7) in the remission group.
In the active group the mean %HB was 95.46% (±8.4) compared to 87.25% (±9.0) in the remission group (p=0.027).
Conclusion: The resting metabolic rate based on the Fitmate and Harris Benedict equation, is significantly higher in patients with active CD compared to patients with CD in remission indicating a higher energy requirement of patients with active CD.

Geriatric Assessment in Older Inflammatory Bowel Disease Patients

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Aim: The IBD disability index (IBD-DI) was designed to measure disability amongst IBD patients, and has been validated in different patient populations, amongst which older patients. However, older IBD patients show a large variance in functional status and this may affect the level of disability experienced by these patients. The aim of this study was to perform geriatric assessment (GA) and to determine which geriatric factors influence disability in older IBD patients.
Methods: Consecutive IBD patients ≥ 65 years old were included at the outpatient department of a university and large teaching hospital in the Netherlands. Handgrip strength (HGS) was used as a measure of physical functioning: HGS ≤ 1 SD of sex and age specific mean was considered critically weak, ≤2 SD was considered weak. The Geriatric 8 (G8) score was used for assessing frailty (scale 0-17), lower G8 shows higher vulnerability. EuroQol 5D (EQ5D) was used to measure Health Related Quality of Life (HRQoL), (scale 0-1; low to high HRQoL). The IBD-Disability Index (IBD-DI) indicated disability (score <20: no, 20–35 mild, 35–50 moderate, ≥50 severe disability). Disease activity was measured with Partial Mayo Score (PMS) and Harvey Bradshaw Index (HBI), which were comprised to one score indicating remission if PMS≤1 or HBI ≤3. Multiple linear regression was used to assess associations; all were corrected for sex, age and disease activity.
Results: 218 patients were included (mean age 71.00 years (SD 4.76), 45.4% female, 51.4% Crohn's Disease). Most (78.3%) were in remission, 52.8% had a G8 score ≤14 indicating possible frailty and 16.4% a critically weak or weak HGS. Median HRQoL was 0.86 (IQR 0.81-1.00), mean IBD-DI 19.28 (SD 12.46, 2.2% severe disability, 57.4% no disability). G8 score was associated with IBD-DI (B -1.185, p=0.006), just as HRQoL (B -35.866, p=0.000). A critically weak or weak HGS was associated with IBD-DI as well (B 5.618, p=0.033), after correcting for disease activity this correlation was no longer significant. Age was not associated with disability. When all geriatric measurements, except HRQoL which was considered a confounding factor, were analysed in multiple linear regression G8 score (B -1.114, p=0.015) was associated with disability.
Conclusion: Older IBD patients are diverse and should not be classified by age. Multiple linear regression showed G8 to be significantly associated with disability. We can thus conclude that frailty correlates with IBD related disability and could be an appropriate measure to predict disability in older IBD patients.

Intestinal acidification sensed by pH-sensing receptor OGR1 (GPR68) contributes to fibrogenesis

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Background and aims: pH-sensing ovarian cancer G-protein coupled receptor-1 (OGR1/GPR68) is regulated by key inflammatory cytokines. Patients suffering from inflammatory bowel diseases (IBD) express increased levels of OGR1 in the mucosa compared to non-IBD controls. pH-sensing may be relevant for progression of fibrosis, as extra-cellular acidification leads to fibroblast activation and extracellular matrix remodeling. We aimed to determine *OGR1* expression in fibrotic lesions in the intestine of patients with Crohn's disease (CD), and the effect of *Ogr1* deficiency in fibrogenesis.
Methods: Human fibrotic and non-fibrotic terminal ileum was obtained from CD patients undergoing ileocecal resection due to stenosis. Gene expression of fibrosis markers and pH-sensing receptors was analyzed. The *in vivo* murine heterotopic transplantation model of intestinal fibrosis was used. Collagen layer thickness and hydroxyproline content was determined.
Results: Increased expression of fibrosis markers was accompanied by an increase of *OGR1* (2.71±0.69 vs. 1.18±0.03, P=0.016) in fibrosis-affected human terminal ileum, compared to the non-fibrotic resection margin. Positive correlation between *OGR1* expression and pro-fibrotic cytokines (*TGFB1* and *CTGF*) or pro-collagens was observed. The heterotopic animal model for intestinal fibrosis transplanted with terminal ileum from *Ogr1-/-* mice showed a significant decrease in mRNA expression of fibrosis markers as well as a decrease in collagen layer thickness and hydroxyproline compared to grafts from wildtype mice.
Conclusions: *OGR1* expression correlates with the expression of pro-fibrotic genes and increased levels of collagen deposition. *Ogr1* deficiency is associated with a decrease in fibrosis formation. Targeting OGR1 may be a potential new treatment option for IBD-associated fibrosis.

High dose vitamin D does not prevent postoperative endoscopic and clinical recurrence in Crohn's disease

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Vitamin D deficiency is common in Crohn's disease (CD). Preclinical experiments and a clinical trial suggested anti-inflammatory effects of vitamin D in CD. We studied the anti-inflammatory effect of vitamin D in a prospective placebo-controlled clinical trial in patients with CD undergoing ileocolonic resection with ileocolonic anastomosis.

This was a prospective randomized, placebo-controlled trial in 17 centres in Belgium and the Netherlands. CD patients were randomized to receive weekly 25.000 IU vitamin D or placebo for 6 months following first or second ileocolonic resection. All other CD medication was stopped. The primary endpoint was endoscopic recurrence defined as a modified Rutgeerts score ≥i2b at 26 weeks (>5 aphthous ulcerations in the neoterminal ileum with or without anastomotic lesions); secondary endpoints included clinical recurrence (Crohn's disease activity index (CDAI) ≥220), quality of life (SF-36, IBD-Q and EQ-5D), safety and differential outcomes by baseline vitamin D serum concentrations. All endoscopies were centrally read and adjudicated by 2 expert blinded endoscopists (GD, PB).

143 patients were randomized (72 to vitamin D and 71 to placebo); baseline patient characteristics were comparable between the two groups (mean age (±SD) 34 (±12) vs 37 (±15) years, and 38% vs 40% male, respectively). Serum 25-OHvitamin D levels increased from median (IQR) 42 (27-56) nmol/L to 87 (73-105) nmol/L in the intervention group at week 26 (p=<0.00001), and remained unchanged at 43 (29-64) nmol/L in patients on placebo throughout the whole study. No difference was seen in the incidence of endoscopic recurrence at 26 weeks (Rutgeerts ≥i2b 58% vs 66% in respectively vitamin D vs placebo treated patients, p=0.37). In addition, the cumulative clinical recurrence rates at week 26 were comparable with CDAI ≥220 of 18% in both groups, p=0.93. Quality of life as measured by SF-36, IBD-Q and EQ-5D improved slightly over time in both groups but was not significantly different between the two groups. Adverse events were uncommon in either group; adverse events with an incidence >5% included abscess formation in both groups and wound infection in the placebo group and were related to the prior surgery. Outcome was not affected by baseline serum vitamin D level, season of inclusion or ethnicity.

Conclusion: High dose vitamin D treatment did not reduce the incidence of postoperative endoscopic and clinical recurrence in Crohn's disease patients, despite normalization of serum 25(OH)D concentrations. Hence vitamin D deficiency might merely be a consequence of disease activity rather than a causal explanation in the pathophysiology of Crohn's disease.

Development and Validation of a Model to Predict Regression of Hepatocellular Adenoma

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Background: Hepatocellular adenomas (HCA) are benign liver tumors. In HCA >5cm bleeding or malignant transformation may occur and preventive surgery is indicated. However, HCA may also regress and typically patients are followed for at least 6-12 months to see whether regression occurs. The aim of this study was to develop a model to predict whether HCA eventually will regress to <5cm in patients diagnosed with HCA >5cm that still exceed 5cm at first follow-up imaging.
Method: Patients with HCA >5cm at diagnosis (T0) and HCA still exceeding 5cm at first follow-up imaging (T1, intentionally 6 months after diagnosis according to guidelines) were identified in two tertiary referral centers in the Netherlands. Diagnosis was based on contrast enhanced MRI or histological examination. Predictors considered were age at diagnosis, BMI at diagnosis, HCA diameter at T0, HCA-subtype (steatotic [H-HCA], inflammatory [I-HCA] or unclassified [U-HCA]) and 'T0 to T1 regression over time', which was calculated by dividing the total percentage of regression between T0 and T1 by the number of weeks between T0 and T1. Cox proportional hazards regression was used to develop a multivariable prediction model with time to regression of the HCA to <5cm as outcome, variables with $p<0.05$ were selected. The concordance (c) statistic was calculated to assess model performance in terms of discriminative ability.
Results: In total 156 patients were included, all female, with a median age of 35 years and median BMI of 31.9 kg/m^2 at diagnosis. HCA subtypes were H-HCA (9%), I-HCA (62.2%) and U-HCA (28.8%). The median HCA diameter was 83mm at T0 and 65mm at T1. The median time between T0 and T1 was 6 months and the median total follow-up time was 23 months. Sixty-eight patients (43.6%) reached the clinical endpoint after a median of 35 months. (95%-CI 25-45 months). In multivariable analysis, the strongest predictors for regression to <5cm were HCA diameter at T0 (logtransformed, HR 0.01, 95%-CI 0.00-0.05, p<.001), T0 to T1 regression over time (HR 3.09, 95%-CI 2.34-4.07, p<.001) and HCA subtype I-HCA (HR 3.16, 95%-CI 1.25-8.02, p=.015) and U-HCA (HR 3.14, 95%-CI 1.20-8.25, p=0.020), compared to H-HCA as reference. The model including these variables yielded a c-index of 0.81 (corrected for optimism), which indicates good discriminative ability.
Conclusion: In patients diagnosed with HCA >5cm that still exceed 5cm at first follow-up imaging, regression to <5cm can be predicted reliably using our multivariable model. The model can of great help in making a well-informed management decision, and implementation could avoid unnecessary surgery.

Mean week 24 hbsag declines predict subsequent rate of hbsag clearance and could be a valuable endpoint for early development hbv trials

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Background: Identification of potentially efficacious treatment modalities for HBV infection in early development trials requires on-treatment response markers. We hypothesized that the mean HBsAg decline at week 24 could serve as a useful marker for subsequent off-treatment sustained HBsAg clearance at the treatment arm level.
Methods: We used individual patient data from the HBV 9901 study (peginterferon (PEG-IFN) versus PEG-IFN with lamivudine for HBeAg-positive chronic hepatitis B [CHB]), PARC study (PEG-IFN alone or with ribavirin for HBeAg-negative CHB) and published data from study 0149 (various combinations of PEG-IFN with or without tenofovir for HBeAg-positive and HBeAg-negative CHB) to define the relationship between mean week 24 HBsAg decline and subsequent HBsAg loss at six months post-treatment. A within-study comparison of HBsAg decline at week 24 between patients with and without HBsAg clearance was used to make projections beyond the observed HBsAg clearance rates.
Results: Across trials, a more pronounced mean HBsAg decline at week 24 was associated with higher rates of subsequent HBsAg loss. In addition, mean HBsAg decline data at week 24 for patients with and without HBsAg clearance from HBV 9901 (3.7 vs 0.6), PARC (4.8 vs 0.3) and the peginterferon plus TDF arm from study 149 (4.6 vs 0.6) were used to extrapolate this relationship beyond the observed rates of HBsAg loss. Based on these analyses, an additional mean 1 log10 decline compared to a comparator treatment arm would be expected to translate into a 20 - 30% increase in subsequent HBsAg loss during off-treatment follow-up and could therefore be a clinically meaningful target for early development trials in HBV.
Conclusions: Mean week 24 HBsAg decline predicts subsequent HBsAg loss and an additional 1 log10 decline compared to a comparator arm is projected to translate to a 20-30% increase in subsequent HBsAg loss. Mean week 24 HBsAg decline could therefore be used as a valuable early endpoint in HBV early treatment development trials.

Role of age in presentation, response to therapy and outcome of autoimmune hepatitis

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Background*:* Few studies with diverging results and a small sample size have compared autoimmune hepatitis (AIH) in the elderly to younger patients.
Aim: To unbiasedly investigate the role of age in behaviour and treatment outcome of AIH.
Methods: All patients with probable or definite AIH type 1 in four tertiary academic centres were included in this retrospective -and since 2006 prospective- cohort study. Influence of age on presentation, remission and outcome of AIH were investigated.
Results*:* 359 patients were included. Presence of cirrhosis at AIH diagnosis around 30% was independent of age. ALAT was higher at age 30-60 years on AIH diagnosis, and above age 60 there were less acute onset, less jaundice and more concurrent autoimmune disease. Remission was reached in 80.2%, incomplete remission in 18.7%, only 1.1% (all aged 50-65) was treatment-refractory. Age was not an independent predictor of remission, while cirrhosis was. Above age 45 there was more diabetes, above age 60 more loss of remission. Rate of progression to cirrhosis was 10% in the 10 years after diagnosis and unrelated to age at AIH diagnosis. With onset below age 30 there was more development of decompensated cirrhosis over time. With higher age at AIH diagnosis there was a lower survival free of liver-related death or liver transplantation.
Conclusions: AIH presents at all ages. Age influences features at diagnosis, but not response to treatment, while survival without liver-related death or liver transplantation decreases with higher age at diagnosis.

The gut microbiome and liver steatosis in a Western adult population: The Rotterdam Study

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Background: Previous studies suggested a role for the gut microbiome in liver steatosis development. However, there is a need for large studies evaluating the association between the gut microbiome and ultrasound-confirmed steatosis controlling for potential confounders.
Methods: 1718 fecal stool samples were collected from participants of the population-based Rotterdam Study and stored at -20ºC. The 16S ribosomal RNA gene (variable regions 3/4) was amplified and sequenced using Illumina MiSeq Technology. We clustered reads into operational taxonomic units (OTUs), excluded singletons and OTUs with <40 reads, and determined taxonomy using silva reference database (v128). The diversity within an individual, i.e. the α-diversity, was calculated on the denovo OTU-table. We calculated the β-diversity, i.e. diversity between individuals, using Bray-Curtis dissimilarities, and tested for differences between steatosis and controls using PERMANOVA. We selected relevant log(1+OTU) via lasso shrinkage for regression analyses of liver steatosis on ultrasound. All analyses were adjusted for age, sex, BMI, technical traits, education, alcohol, smoking, diet, diabetes, physical activity, triglycerides, hdl, and waist-hip ratio.
Results: After excluding duplicate and >3 days travel samples, and participants with recent antibiotic use; we included 1355 participants of which 472 had liver steatosis (35%). Median (IQR) age was 62 (8) years and BMI was 27 (5) kg/m^2. Mean relative abundance of phyla was 77% *Firmicutes,* 13% *Bacteroidetes*, and 5% *Proteobacteria*. *Firmicutes/Bacteroidetes* ratio was similar in steatosis and controls (*P*=0.3). α-Diversity was lower in individuals with steatosis (*P*=1.1e-9). We found significant variation in β-diversity between steatosis and controls on genus level (*P*<0.01). Lasso selected 18 genera, of which 9 were significantly associated with liver steatosis in subsequent regression. We found an inverse association for genera *Coprococcus3* (β/SE=-2.7; *P*<0.01), *Enterorhabdus* (β/SE=-2.6; *P*<0.01), and *LachnospiraceaeND3007* (β/SE=-2.0; *P*=0.04). Whereas there was a positive association for genera *Collinsella* (β/SE=2.4; *P*=0.02), *Prevotella2* (β/SE=2.0; *P*=0.05), *R.Gauvreauiigroup* (β/SE=3.7; *P*<0.01), *R.Gnavusgroup* (β/SE=2.7; *P*<0.01), *Ruminococcus 2* (β/SE=3.1; *P*<0.01), and *Bilophila* (β/SE=2.2; *P*=0.03).
Conclusion: The microbiome diversity was lower in liver steatosis. We confirmed the previously known association of liver steatosis with *Ruminococcus, Prevotella* and *Coprococcus*, and have identified 6 additional genera that were independently associated with liver steatosis. This is the largest gut microbiome study in liver steatosis to date.

Track & Trace: Results from a retrieval strategy to identify lost to follow-up chronic hepatitis C patients

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Background: There are an estimated 23,000 chronic Hepatitis C infected patients in the Netherlands. An unknown proportion has been lost to follow-up and received no adequate treatment. The advent of direct antivirals offers the prospect of safe and efficacious therapy. We designed this study to examine a retrieval strategy that identifies chronic HCV (cHCV) patients lost to follow-up (LTFU) and brings them back into care. We also mapped disease and patient characteristics of this cohort.
Methods: Our diagnostic pipeline started with data analysis of patient records of a virology laboratory that serves 2 hospitals in Nijmegen: a tertiary referral and liver-expert centre and a rehabilitation clinic. Records from patients with positive HCV antibodies, positive immunoblot and/or HCV quantitative RNA PCR measurements between 2003-2017 were identified and linked to personal data. Chart review was performed to assess possibility of loss to follow-up and to map phenotypical characteristics of the LTFU cohort. Identification data was checked with the governmental citizen administration to adjust for death or change of municipality.
Results: Of all tested patients (n=45,276), 359 had at least one positive HCV RNA. Prevalence in this cohort would be estimated at 0.21%, which is similar to the prevalence in the Netherlands. In 183/359 patients (51%) the last measured RNA was still positive. Of these cHCV patients, 19 had already been cured, 12 were still in care and 51 were deceased. In 50 anti-HCV-positive patients, PCR measurements had not been performed. Of these patients, 4 had already been cured and 11 were deceased. A total of 105 patients (26%) is LTFU and could benefit from linkage to care. The majority of LTFU patients was male (77%) and did not reside in the Netherlands anymore (55%). The most common probable mode of infection was intravenous drug use (48%). Roughly a quarter had a previous treatment attempt, most often with an interferon-based regimen (79%). In approximately 50% disease severity is unknown, with data on imaging or fibrosis severity missing.
Conclusion: Identification of patients through analysis of archival laboratory results and chart review is feasible. Disease severity is unknown in a significant part of the LTFU population. These patients could be at risk for serious complications. Together with the high percentage of LTFU patients observed in this centre, this emphasizes the need for a nationwide retrieval project to bring this group back in care.

Systematic review and meta-analysis of risk factors for recurrent primary sclerosing cholangitis

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Background: Primary sclerosing cholangitis (PSC) is a chronic inflammation of the bile ducts leading to fibrosis and eventually cirrhosis. Aetiology of PSC remains unknown and no specific treatment can delay or arrest the progressive disease course, with orthotopic liver transplantation (OLT) remaining the only curative option. Nonetheless, primary sclerosing cholangitis can reoccur after liver transplantation (rPSC) with considerable morbidity often leading to retransplantation. In the past decade large cohorts of patients with PSC undergoing OLT were analysed to identify risk factors for rPSC.
Objective: The aim of this study was to summarize all available data to define risk factors for rPSC.
Methods: Search of the following databases was performed: Pubmed, Embase, Web of Science, Cochrane library for articles published until March 2018 using the medical subject headings sclerosing cholangitis, recurrence, liver transplantation, risk and risk factors. Studies addressing risk factors for rPSC after OLT were eligible for inclusion in the review. Studies able to provide data to calculate hazard ratios (HR) and 95% confidence intervals (95% CI) were included in the meta-analysis. Quality of included studies was independently evaluated by two authors with the Newcastle Ottawa Scale (NOS) for cohort studies. Statistical analysis was performed using Cochrane Review Manager.
Results: The electronic database search yielded 449 results. Sixteen retrospective cohort studies met the inclusion criteria for the review. Twelve studies were included for meta-analysis. Studies scored a median of 8 points (6-9) on the NOS. After excluding possibly overlapping cohorts, we analysed recurrence in a total cohort of 1899 patients, with median age ranging from 31 to 49 years, 1330 were male (70.0%) and 321 developed rPSC (16.9%). We found that colectomy before OLT, HR 0.63 (95% CI: 0.41 - 0.99), presence of cholangiocarcinoma (CCA) before OLT, HR 2.81 (95% CI: 1.34 - 5.87), presence of inflammatory bowel disease (IBD), HR 1.76 (95% CI: 1.19 - 2.61), donor age, HR 1.02 (95% CI: 1.01 - 1.04), MELD score per point, HR 1.05 (95% CI: 1.02 - 1.08) and acute cellular rejection (ACR), HR 2.37 (95% CI: 1.30 - 4.32), were associated with the risk of rPSC. Recipient or donor gender, donor-recipient gender mismatch, recipient age, living or deceased donor, cytomegalovirus status of recipient, type of biliary anastomosis and primary immunosuppressants were not significantly associated with rPSC.
Conclusion: IBD presence, CCA before OLT, donor age, MELD score and development of ACR were risk factors for rPSC. Performing a colectomy before liver transplantation was protective for rPSC.

Reason of discontinuation after transarterial chemoembolization influences survival in patients with hepatocellular carcinoma

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Background: Transarterial chemoembolization (TACE) for intermediate stage hepatocellular carcinoma (HCC) is repeated until unTACEable progression. Still, there is little data on the various reasons of TACE discontinuation in daily clinical practice and impact on survival.
Aim: To assess the prognostic impact of the reason of TACE discontinuation.
Methods: Consecutive patients treated with TACE for HCC at a tertiary center between 2003 and 2016, were analysed retrospectively for the reason of TACE discontinuation. UnTACEable progression was defined according to the current EASL guidelines. Radiological pattern of progression, liver function and performance status (PS) were assessed at TACE discontinuation, determining second-line eligibility and comparing overall and post-progression survival (OS, PPS). The correlation between time-to-unTACEable progression (TTUP) and OS was analysed.
Results: 192 patients (Barcelona Clinic Liver Cancer stage A: 39%; B: 51%, C: 10%) were included, receiving a median of 2 TACE (range 1-7). 159 patients discontinued TACE, mostly due to radiological tumor progression (74%) or liver dysfunction (Child-Pugh =B8, 19%). Of the 36 patients who developed liver decompensation after TACE, only 3/36 (8%) recovered to receive second-line treatment. The pattern of radiological progression included intrahepatic growth (n=22), new intrahepatic lesion(s) (n=44) and macrovascular invasion or extrahepatic spread (n=52). Second-line treatment was given in 63/159 (33%) patients, and these patients had a significantly better OS than patients who received best-supportive care (BSC) after discontinuation (21 vs 12 months, log-rank p<0.001). Patients who did not receive second-line treatment despite eligibility, had a poorer PPS (4.8 months, 95% CI 2.1-6.8) than those who did receive second-line treatment (13.0 months, 95% CI 8.8-17.3; log-rank p<0.001). UnTACEable progression occurred in 135 patients (72%) after a median TTUP of 11.9 months (95% CI 9.4-14.4). There was a strong positive correlation (ρ=0.803, p<0.001) between TTUP and OS.
Conclusion: In patients who discontinued TACE, most had radiological progression. Patients who discontinued due to liver dysfunction rarely recover to receive second-line treatment. Second-line treatment options and survival outcomes following TACE discontinuation are significantly impacted by PS and liver function.

Validation of the Amsterdam-Oxford survival prediction model in Primary Sclerosing Cholangitis in a tertiary center setting

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Background: Recently the Amsterdam Oxford Model (AOM) was introduced; a prognostic model developed in a population-based cohort to predict the risk for death and/or liver transplantation in Primary Sclerosing Cholangitis (PSC). We aimed to validate the AOM in a large cohort of PSC patients from three tertiary centers in Europe.
Methods: Clinical and laboratory data were collected from start of follow-up until last visit, death or transplantation. A combined endpoint of death or liver transplantation was used. The AOM was calculated at yearly intervals, starting at diagnosis up to 5 years follow-up (AOM=0.323*PSC subtype +0.018*Age at diagnosis - 2.485*Albumin+ 2.451* Platelets+ 0.347*AST + 0.393 *ALP +0.337*Total Bilirubin). Model performance was assessed by calculation of the C-statistic to assess discrimination, and by comparing predicted curves with Kaplan-Meier estimates to assess calibration. A repeated linear model was applied to model the AOM scores over time. Afterwards the association of AOM scores over time with clinical endpoints was assessed using Cox-proportional hazards analysis with time until a patient developed values above a grid of AOM thresholds as a time-dependent covariate.
Results: A total of 462 PSC patients aged (median (IQR)) 38 (30-51) years at diagnosis, 64.8% male, and 92% UDCA-treated were included of whom 403 (87.2%) had large duct PSC, 45 PSC-AIH overlap and 14 small duct-PSC. During the median follow-up period of 8.4 (4.2-19.3) years a total of >14.000 laboratory measurements were performed. In total 137 patients underwent liver transplantation and 53 patients died. Transplant-free survival was 98.3% at 1 year, 86.0% at 5 years, and 67.6% at 10 years of follow-up. In patients followed from diagnosis onwards (n=255) transplant-free survival could be accurately calculated by the AOM up to 5 years of follow-up (C-statistic 0.75-0.84). A significant proportion of patients developed AOM values above the threshold of 2.0 during follow-up: 23% within 1 year, 32% within 3 years, 42% within 5 years, and 58% within 10 years following PSC diagnosis. Patients withAOM scores > 2.0 were at significant risk of death or liver transplantation (time-dependent HR 7.3 95% CI 4.6-11.8; C-statistic 0.70-0.78).
Conclusion: The AOM model for PSC adequately estimated the risk for death and/or liver transplantation in PSC patients in a tertiary center setting. Development of AOM scores > 2.0 during follow-up is associated with a considerable risk for death or transplantation. We confirm that the AOM is a valuable tool for risk stratification in PSC.

Body composition is an independent predictor of outcome in patients with hepatocellular carcinoma treated with sorafenib

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Background: Previous studies suggested body composition as a predictor of sorafenib toxicity and outcome in patients with advanced hepatocellular carcinoma (HCC). Large studies on the impact of body composition parameters in European HCC patients are lacking. Our aim was to validate the prognostic value of body composition parameters in Dutch patients with HCC treated with sorafenib.
Patients and methods: A retrospective analysis was performed in a cohort of HCC patients treated with sorafenib at two Dutch tertiary referral centers between 2007 and 2016. Body composition (adipose and skeletal muscle tissues) was measured at baseline by computed tomography (CT). Sarcopenia and low muscle density were defined using published cut-offs. Body composition parameters were correlated with overall survival (OS), time-to-progression (TTP), response rate and toxicity.
Results: 278 patients were included, mostly Child-Pugh A (85%) and Barcelona Clinic Liver Cancer stage C (73%), with a median OS of 9.5 months (95% CI 8.1-11.0). Patients with combined sarcopenia and low total adiposity index (TATI)(n=68, 25%) had a poor median OS (5.8, 95% CI 4.8-6.8) compared with other patients (11.7, 95% CI 9.4-14.0). Combined sarcopenia and low TATI remained an independent predictor of OS (HR 1.57, 95% CI 1.15-2.14, *p*=0.005) after adjusting for known prognostic factors. There was no association between body composition and sorafenib toxicity.
Conclusion(s): In Dutch HCC patients treated with sorafenib, combined presence of sarcopenia and low total fat was associated with impaired survival, independent of known prognostic factors. CT-assessment of body composition may provide additional prognostic information prior to sorafenib treatment.

Early closure of ileal pouch-anal anastomotic leakage preserves long-term results; a prospective cohort study

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Background: Endosponge-assisted early surgical closure of anastomotic leakage after ileal pouch-anal anastomosis (IPAA) surgery results in 100% closure rates at 6 months, significantly higher compared to the conventional wait and see approach of abscess drainage. The aim of this study was to compare the long-term pouch function and failure after early closure to conventional management and to control-IPAA patients without anastomotic leakage in Ulcerative Colitis (UC) patients.
Methods: All consecutive prospectively included patients who underwent IPAA for UC between 2002 and 2016, were sent a validated pouch dysfunction questionnaire. Early closure, consisting of short course Endosponge therapy followed by surgical closure, became standard practice in our center from 2010. The primary outcomes were pouch failure (ileostomy or excision of the pouch) and clinical relevant pouch dysfunction (pouch symptoms affecting quality of life (QoL)).
Results: A total of 307 patients were included and 83% returned the questionnaire (n=255). Anastomotic leakage occurred in 40 patients, 17 treated with early reconstruction and 23 conventionally. Early reconstruction resulted in more successful closed anastomosis at 6 months (n=17/17, 100%) compared to conventional management (n=15/23, 65%, P=0.01). Pouch failure was significantly higher after conventional management (n=5/23, 22%) compared to early closure (n=1/17, 6%) and control-patients (11/267, 4%) (P0.006). Taken the difference in follow-up into account using Kaplan-Meier analysis, the significant association of pouch failure at median follow-up with conventional management compared to early closure and control group remained (P= 0.03). Pouch dysfunction affecting QoL was worst after conventional management (47%), but not significantly different between the three groups (38% early closure and 32% control patients, P= 0.47).
Conclusion: With early closure IPAA anastomotic leakage in UC patients is treated more successfully. Early closure of IPAA leakage is significantly associated with the prevention of pouch failure compared to conventional management. The pouch function correlated QoL after early closure is preserved, with comparable results as control patients without leakage.

Outcomes and risk score for distal pancreatectomy with celiac axis resection (DP-CAR score): an international multicenter analysis

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Background: Distal pancreatectomy with celiac axis resection (DP-CAR) is a treatment option in selected patients with pancreatic cancer involving the celiac axis. A recent multicenter European study reported a 16% 90-day mortality, highlighting the importance of patient selection. We constructed a risk score to predict 90-day mortality and assessed oncological outcomes.
Methods: Multicenter retrospective cohort study in patients undergoing DP-CAR at 20 European centers from 12 countries (model design; 2000-2016) and three very-high volume international centers in the USA and Japan (model validation; 2004-2017). We used the area-under-receiver-operator-curve (AUC) and calibration plots for validation of the 90-day mortality risk model. Secondary outcomes assessed included resection margin status, (neo-)adjuvant therapy use and survival.
Results: Among 191 DP-CAR patients, 90-day mortality was 5.5% (95CI: 2.2-11%) in 5 high-volume (≥1 DP-CAR/year) and 18% (95CI: 9-30%) in 18 low-volume DP-CAR centers (*P*=0.020). A risk score with age, sex, BMI, ASA, multivisceral resection, open versus minimally invasive surgery, and low versus high-volume center performed well in both the design and validation cohort (AUC 0.79 versus 0.74, *P* value = 0.642). In 174 patients with pancreatic ductal adenocarcinoma, the R0 resection rate was 60%, neoadjuvant and adjuvant therapy was used in 69% and 67% of patients, and median overall survival was 19 (95CI 15-25) months.
Conclusions: DP-CAR is associated with acceptable 90-day mortality and overall survival, when performed on selected patients at high-volume centers. We proposed a 90-day mortality risk score to improve patient selection and outcomes, with DP-CAR volume as dominant predictor.

Preoperative Education and Informed Consent in Young Adults undergoing Bariatric Surgery: Patients' Perspectives on Current Practice

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Introduction: Preoperative education is part of the informed consent process and should enable patients to make an informed decision. Information about the quality of the perceived education and informed consent process in bariatric surgery, especially in young adults is lacking. Aim of this study was to evaluate the informed consent process in young adults undergoing bariatric surgery.
Methods: semi-structured interviews were executed in 27 out of the 55 young adults, aged 18-25 years, who underwent bariatric surgery between 2012 and 2017 at our centre. The interview included three sections: education of the specific informed consent domains; perioperative expectations and experiences; personal (un)certainties to undergo bariatric surgery. Pre- and postoperative health and anthropometric data was collected retrospectively from the electronic patient files.
Results: 27 patients were interviewed. At baseline, mean age was 23.1 ± 1.6 years and mean BMI was 43.9 ± 7.2 kg/m^2. All consent domains were remembered. However, 24/27 patients could not mention one or more complications. The outcome inadequate weight loss was not known by 6/27. The main focus of the preoperative education was on the positive results and the negative effects were inadequately educated. Preoperative expectation was never primary regarding weight loss, but improved physical condition, overall health and to conceive were mentioned as being the primary factor for a successful outcome.
Conclusion: the preoperative education and informed consent process is an essential step in the treatment process for bariatric surgery. This study provides new information on perceived education and informed consent issues in young adults. Improved preoperative education including possible scenarios after bariatric surgery to assess risks and lifetime consequences should be developed to help these patients in making a well-informed decision.

Active involvement of relatives in postoperative care: a pilot study

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Background: Surgical patients are often cared for by relatives after hospital discharge, but these relatives are usually unprepared for that role. Active involvement of relatives during an elective hospital admission is an unused opportunity to better prepare them; this may lead to less hospital readmissions and less *'missed care'*. We developed a program in which relatives participated in care during hospital admission

Methods: To assess the feasibility of our program, we performed a preference-based trial among patients undergoing esophageal or pancreatic resection. Patients with a relative willing and able to participate formed the intervention group (N=20). Patients not willing to participate formed the control group (N=20) and received usual postoperative care.

The program consisted of rooming-in, presence at morning rounds, written information, training by nurses and hands-on participation in fundamental care, focusing on care activities that may help prevent complications (early mobilization, coughing and deep breathing, cognitive activities, oral hygiene).

For both groups, patient-delivered care was registered. Patients and relatives completed surveys on their experiences and caregiver strain (CarerQol—7d) at baseline, hospital discharge and 3 weeks after discharge. We surveyed opinions of doctors and nurses regarding the program

Results: All participants completed the program. Patients in the intervention group mobilized more often during the first 7 days postoperatively ($p<0.01$), and showed more adherence to breathing exercises ($p<0.05$), oral hygiene ($p<0.05$) and cognitive activities ($p=0.08$). Patients and relatives in the intervention group were more satisfied with the hospital admission. Of the participating relatives, 92% felt better prepared for discharge and 96% would recommend the program to others. Caregiver strain did not deteriorate over time ($p=0.75$). Nurses and doctors appreciated the program positively in evaluation.

We observed a non-significant trend towards less readmissions (4/20 versus 7/20, $p=0.48$), a shorter length of stay (mean days 11,45 ± 6.1 versus 13,25 ± 11.4, $p=0.65$), and a lower rate of pneumonia (0/20 patients versus 4/20 patients, $p=0.11$), all in favor of the intervention group. Overall morbidity did not differ between groups (55% versus 55%, $p>0.99$)

Conclusions: Active involvement of relatives in postoperative care is feasible and is positively valued by patients, relatives, nurses and doctors. This program leads to less missed care and promotes *patient- and family centered care*. Further research is necessary to establish the effect of this program on clinical outcomes such as complications and hospital readmissions

Risk of pain and gastrointestinal complaints after elective abdominal surgery

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Objectives: The incidence of chronic postoperative abdominal pain (CPAP) after surgery of the alimentary tract is substantial and decreases overall quality of life. One in three patients report to have pain-related interference with mood, sleep and enjoyment of life and 12% visit the emergency department for pain related symptoms. Previous studies lack data on preoperative health and pain status, or are limited by small patient samples. The aim of this study is to assess risk factors for CPAP and gastrointestinal complaints six months after surgery.
Methods: Prospective cohort study including patients undergoing an elective laparotomy or laparoscopy at a tertiary referral centre. Relevant patient, pain, surgical, and medical data as well as the Gastrointestinal Symptom Rating Scale (GSRS) were assessed before, during and after hospital stay and at the outpatient clinic until 6 months after discharge. Linear and logistic regression analysis were used to assess risk factors.
Results: Out of 518 included patients, 184 (36%) had CPAP. The median GSRS score was 5 (IQR 3 – 10). The presence of pre-operative pain shorter (OR 2.69; p 0.016) or longer than three months (OR 3.99; p 0.000), usage of opioid analgesia preoperatively (OR 3.54; p 0.001), severe adhesions underneath the incision (OR 1.63; p 0.040) and the NRS pain score on postoperative day 2 (OR 1.23; p 0.004) showed to independently increase the risk for chronic abdominal pain. Chronic pancreatitis as indication for surgery (B 4.20; p 0.03), 3 or more previous abdominal operations (B 1.03; p 0.03), presence of pain more than 3 months before surgery (B 1.61; p <0.01), upper gastrointestinal tract as the anatomical location of surgery (B 1.43; p 0.03) and a higher preoperative GSRS score (B 0.36; p <0.01) independently increased the GSRS score six months after surgery.
Discussion: The duration and severity of preoperative pain and more severe acute postoperative pain were the most relevant risk factors for CPAP. The number of operations and the anatomical location of the operation showed to be important risk factors for increasing the number of gastrointestinal complaints.
Key words: Chronic postoperative abdominal pain; abdominal surgery; adhesions

Circulating cell free tumor DNA for disease monitoring after neoadjuvant chemoradiotherapy for esophageal cancer: proof-of-principle

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Background: An active surveillance approach has been proposed for patients with a clinically complete response (cCR) after neoadjuvant chemoradiotherapy (nCRT) in esophageal cancer (SANO trial). To justify renouncing surgical resection, patients with residual disease after nCRT should be accurately identified. However, substantial residual disease (TRG3-4) cannot be detected in 10% of patients with current diagnostic tests (preSANO trial). Circulating cell free tumor DNA (ctDNA) potentially improves detection of residual malignancy after nCRT and could be used for disease monitoring. The objective of this study was to investigate the feasibility of using ctDNA as biomarker for disease status after nCRT in esophageal cancer.

Methods: Twelve typical patients from the preSANO trial with variable pathological responses to nCRT were included. Blood was drawn and processed pretreatment. The feasibility of detecting TP53 mutations in baseline tumor biopsies was investigated using a next generation sequencing (NGS) panel. Subsequently, baseline blood samples of patients in whom specific TP53 mutations could be identified in baseline tumor biopsies or the surgical resection specimen were analyzed for ctDNA using cell free DNA NGS kits with single molecule barcoding (Oncomine Thermo Fisher).

Results: Baseline biopsy samples were available in 8 out of 12 patients. In 7 of these 8 patients (88%) specific TP53 mutations could be identified in their baseline biopsies. In 11 out of 12 patients (92%) specific TP53 mutations could be identified in baseline biopsies or the resection specimen. Eight of these 11 mutations were potentially detectable by the Oncomine panel. The panel detected TP53 mutational ctDNA in 4 of these 8 samples (50%).

Conclusion: Specific and clonal TP53 mutations can be identified in pretreatment biopsy samples and in surgical resection specimens of patients with esophageal cancer. These mutations can be matched to ctDNA identified in blood samples. Hence, ctDNA analyses in blood samples can potentially be used for disease monitoring during active surveillance and for disease monitoring in follow-up after surgical resection.

Active surveillance versus surgery in clinically complete responders after neoadjuvant chemoradiotherapy for esophageal cancer: a propensity-matched study

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Nearly one third of esophageal cancer patients show a pathologically complete response in their resection specimens after neoadjuvant chemoradiotherapy (nCRT) according to CROSS regimen. This raises questions whether all patients benefit from surgery or if active surveillance can be applied to patients with a clinically complete response (cCR) after nCRT. This retrospective-multicenter propensity matched study compared outcomes of patients with a cCR after nCRT undergoing active surveillance or standard surgery.
Patients that refused surgery after nCRT between 2012-2017 from 4 hospitals were included. For the standard surgery group, patients from the preSANO trial were enrolled. A cCR was defined as endoscopies with multiple (bite-on-bite) biopsies, EUS-FNA and PET-CT showing no residual disease 6 and 12 weeks after completion of nCRT.
Optimal propensity-score matching generated a matched cohort (1:2) matched for age, comorbidities, cT, cN, histology of the tumor and biopsy type. For comparison of severity of complications according to Clavien-Dindo (CD) classification, a separate optimal propensity-score matching cohort was generated (1:2) for all patients in the active surveillance group that underwent surgery.
Primary outcome was overall survival, secondary outcomes were rate of radically resected tumors, distant dissemination rate and rate of postoperative complications according to the CD-classification.
75 patients were identified of whom 50 patients underwent standard surgery and 25 patients underwent active surveillance. 13 of 25 patients in the active surveillance group underwent surgery for locoregional recurrent disease. Median follow-up was 23.7 months for the standard surgery group and 18.8 months for the active surveillance group.
There was no statistically significant difference between the groups in overall survival (HR=0.48, 95%C.I. 0.10–2.2,P=0.96). In both groups, all tumors were radically resected. There were no statistically significant differences in distant dissemination rate between the active surveillance and standard surgery group (16.0% versus 22.0%,*P=0.76*) or in severity of complications (CD≥3;46.2% versus 23.1%,*P=0.16*).
There was no statistically significant difference in overall survival, distant dissemination rate and severity of complications between patients undergoing standard surgery or active surveillance after nCRT. However, since sample sizes were small, especially for the severity of complications, these results should be interpreted with caution.

Impact of Postoperative Ileus in patients undergoing colorectal surgery

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Background: Colorectal surgery is associated with postoperative ileus (POI), affecting up to 40% of patients. POI is an important clinical determinant of short-term morbidity, however, it is considered by many to be an integrated part of the surgery performed. The underlying mechanism of POI has been unraveled in rodent models and local inflammation lies at the basis of the pathogenesis. Furthermore, therapeutic interventions have been successfully tested in animal models, however effective treatment options in daily clinical practice are lacking. The aim of this study was to investigate the impact of POI in clinical practice and to assess whether the inflammatory processes found in experimental studies similarly occur in the human situation.

Methods: For this study data from the SANICS II trial, a multicenter RCT investigating patients undergoing colorectal resection with POI as primary endpoint was used. Patients were divided into two groups: patients with POI and patients without POI. Inflammatory parameters were measured in blood before surgery and at 4, 24 and 48 hours after surgery via cytometric bead analysis (CBA). Data on cost-effectiveness was collected via self-reported questionnaires for health-care consumption and productivity losses. Quality of life was measured via EQ-5D-5L and EORTC-QLQ-C30 questionnaires at baseline, 3 and 6 months after surgery.

Results: Sixty-six patients met the criteria of POI, and 199 patients did not have POI. Levels of CRP were increased in patients with POI versus patients without POI (POD2: 210 vs 142 mg/mL; $p<0.001$, POD3: 169 vs 110 mg/mL; $p<0.001$, POD4: 120 vs 82 mg/mL; $p=0.003$ respectively). Also, plasma levels of IL-6, IL-8 and IL-10 were significantly raised 24 and 48 hours after resection in patients with POI. Fifty-three percent of patients with POI had more accompanying complications against 28% of patients without POI ($p<0.001$), leading to an increased length of stay and readmissions. The mean societal cost per patient was significantly higher 3 months postoperatively for patients with POI versus without POI (€8197 versus €4461, $p<0.001$). Three and six months after surgery utility was lower in patients with POI than in patients without POI (3 months: 0.79 versus 0.87; $p<0.01$, 6 months: 0.79 versus 0.85; $p=0.040$)

Conclusion: In this study was found that inflammatory parameters were significantly increased in patients with POI, supporting findings from experimental studies. Considering the impact of POI in high costs, reduced quality of life, the high complication rate and length of stay it is necessary to focus on strategies reducing the inflammatory response and POI in colorectal surgery.

Image-guided pathology for evaluation of resection margins in locally advanced rectal cancer using the near-infrared fluorescent tracer bevacizumab-800CW

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Introduction: Negative circumferential resection margins (CRM) are the cornerstone for curative treatment of patients with locally advanced rectal cancer (LARC). Unfortunately, perioperative techniques for evaluation of resection margins are lacking, whereas standard histopathological examination is time-consuming. In this study, we evaluated the feasibility of optical molecular imaging as a tool for evaluation of resection margins at the surgical theater, i.e. Image-Guided Pathology (IGP), to improve clinical decision making.
Methods: Fluorescence imaging data of fresh surgical specimens and subsequent bread-loaf slices from patients with LARC (NCT01972373) were analyzed as a side study. All patients were administered intravenously with 4.5 mg of the fluorescent tracer bevacizumab-800CW 2-3 days prior to surgery. Seven patients met the inclusion criteria for correlation of fluorescence intensities in fresh surgical specimens with histology, to evaluate resection margins. For analysis of bevacizumab-800CW localization in bread-loaf slices, sufficient data was available from 17 patients. A receiver operating characteristics (ROC) curve was plotted to determine the mean fluorescence intensity (MFI) cut-off value for tumor detection.
Results: Using IGP, in one patient a histologically confirmed tumor-positive CRM was predicted correctly at the surgical theater (Figure 1). Tumor-negative CRMs were predicted correctly in four patients using IGP. One tumor-positive CRM could not be detected; however, this positive margin was based on the presence of only an isolated microscopic tumor deposit in the CRM. One close CRM (1.4 mm) was identified as tumor-positive. Optical imaging enabled a clear differentiation between tumor and surrounding tissue in the bread-loaf slices (n=42) of all 17 patients *ex vivo*. In our limited sample size, an optimal MFI cut-off value of 5085 was determined based on the ROC curve, with a sensitivity and specificity of 98.2% and 76.8% respectively.
Conclusion: We demonstrate for the first time the potential of IGP for identification of positive resection margins directly after surgery in patients with LARC. Clearly, this might change current peri-operative decision making with regard to additional targeted resections or intraoperative brachytherapy. Based on the initial results from this study, a standardized methodology was developed to confirm these findings in a subsequent larger IGP study.

Reporting Outcomes Of The Dutch Upper Gastrointestinal Cancer Audit According To The Platform Of The Esophageal Complications Consensus Group

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Introduction: To standardize outcome reporting in esophageal surgery, the Esophageal Complications Consensus Group (ECCG) developed a standardized platform. The aim of this study was to report postoperative morbidity and mortality in the Netherlands according to the definitions of the ECCG.
Methods: All patients who underwent an esophagectomy or gastrectomy for cancer in the Netherlands between 2016-2017 were selected from the Dutch Upper gastrointestinal Cancer Audit (DUCA). Patient outcomes including postoperative complications, 30-day mortality were reported according to the definitions of the ECCG platform. The severity of the complications was defined according to Clavien-Dindo, and grade III or higher were major complications.
Results: Some 2545 patients were included from 22 hospitals. The completeness of the DUCA was estimated at 99.8%. The accuracy of data on different items was 94-100%. After esophagectomy, 1046 of 1617 (65%) patients had a postoperative complication. Some 468 patients (29%) had a major complication. Most common complications were pneumonia (21%), esophagoenteric leak from anastomosis, staple line or localized conduit necrosis (19%), and atrial dysrhythmia (15%). Readmissions occurred in 15% of patients. The 30-day/in-hospital mortality was 2.4%.
After gastrectomy, 397 of 928 patients had a postoperative complication. Some 180 patients (19%) had a major complication. Most common complications were pneumonia (12%), esophagoenteric leak from anastomosis, staple line or localized conduit necrosis (9%), and acute delirium (5%). Readmissions occurred in 14% of patients. The 30-day/in-hospital mortality was 5.3%.
Conclusion: Reporting complications according to the ECCG platform is feasible in the Netherlands and facilitates international benchmarking.

A Population-Based Study On Risk Factors For Tumor-Positive Resection Margins In Patients With Gastric Cancer

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Introduction: Radical gastrectomy is the cornerstone of the treatment of locally advanced gastric cancer. This study aimed to evaluate factors associated with a tumor-positive resection margin after gastrectomy and to evaluate the influence of hospital volume.
Methods: In this national cohort study, patients with junctional or gastric cancer that underwent curative gastrectomy between 2011-2017 were included. The primary outcome was irradicality of the operation defined as the microscopic presence of tumor cells at the resection margin. The association of patient- and disease characteristics with irradicality was tested with multivariable regression analysis. The association of annual hospital volume with irradical resections was tested and adjusted for the patient- and disease characteristics.
Results: In total, 2799 patients were included. An irradical resection was seen in 265 (9.5%) patients. Factors associated with irradicality were: tumor located in the entire stomach (OR [95%CI]: 3.38 [1.91-5.96] reference: gastro-esophageal junction), cT3, cT4, cTx (1.75 [1.20-2.56], 2.63 [1.47-4.70], 1.60 [1.03-2.48], reference: cT0-2), pN+ (2.73 [1.96-3.80], reference: pN-), and diffuse and unknown histological subtype (3.15 [2.14-4.46] and 2.05 [1.34-3.13], reference: intestinal). Unknown differentiation grade was associated with a decrease risk for an irradical resection (0.50 [0.30-0.83], reference: poor differentiated/undifferentiated). Compared to a hospital volume of <20 resections per year, 20-39 and>39 resections was associated with lower probability for irradicality (OR 0.56 [0.42-0.76] and 0.34 [0.18-0.64]).
Conclusions: Tumor location, cT category, pN status, histological subtype and tumor differentiation are associated with irradicality. The association of irradicality with an annual hospital volume of <20 resections may underline the need for further centralization of gastric cancer care in the Netherlands.

Concomitant Portal Vein Resection for perihilar cholangiocarcinoma

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Background: Standard resection of the portal vein bifurcation has been proposed to improve oncological outcomes in patients resected for perihilar cholangiocarcinoma (PHC). However, the impact of concomitant portal vein resection (PVR) on oncological outcomes for patients with PHC remains unclear. The policy in our center is to resect the portal vein bifurcation only selectively when it is involved, because of the increased risk of postoperative morbidity. We aimed to analyze the effect of selective portal vein resection on survival and postoperative morbidity in patients undergoing resection for PHC.
Methods: A retrospective cohort study was performed on patients with pathologically proven PHC, resected at our center between 2000 and 2018 (3). Primary outcomes were 90-day morbidity, mortality and overall survival. Survival analysis was performed using the Kaplan-Meier method. Cox regression analysis was used to evaluate whether PVR is an independent factor for improved survival.
Results: A total of 162 patients undergoing resection for pathologically proven PHC were evaluated, of which 39 procedures combined with PVR. Patients' characteristics showed that patients undergoing PVR were significantly younger (60 vs 65 years), had significantly larger tumor size (25 vs 30 mm) and more advanced Bismuth-Corlette classification (type III-IV). Overall five-year survival of the entire cohort was 37%. R0 resection rate of the entire cohort was 59%. Patients resected with PVR and no PVR showed no differences in 90-day morbidity and mortality (p=0.680 and p=0.976, respectively), R0 resection rate (p=0.554), or overall survival (p=0.880). Univariate cox regression analysis showed that PVR was not an independent factor for improved survival (HR 1.054, p = 0.868).
Conclusion: Survival and overall 90-day morbidity and mortality did not significantly differ for patients with PHC undergoing concomitant PVR to those who did not. A direct comparison of a policy of selective and standard PVR is needed to further evaluate the role of PVR on survival and morbidity.

Time to therapeutic intervention following ileocecal resection versus infliximab for ileocecal Crohn's disease: Long-Term follow up of the LIR!C trial

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Background: The LIR!C trial showed that laparoscopic ileocecal resection (ICR) could be an alternative treatment to infliximab for Crohn's disease patients with non-stricturing and immunomodulator refractory terminal ileitis. Our aims were to (i) compare the long-term efficacy of both interventions (ii) identify predictive factors associated with the time to therapeutic intervention within each group.
Methods: Long-term follow-up data was retrospectively collected for patients who participated in the LIR!C trial; a multicenter, randomized controlled trial that compared laparoscopic ICR with infliximab maintenance therapy for adults with non-stricturing and immunomodulator refractory ileocecal Crohn's disease (<40CM). Primary outcome was time to therapeutic intervention defined by the initiation or modification of medical therapy or surgery for disease flare or intolerance to treatment. Time to therapeutic intervention was analysed by Kaplan-Meier survival analysis. Potential predictive factors were defined a priori, identified through Cox proportional hazards regression analysis and expressed as hazard ratio (HR) [95% confidence interval (CI)]. The following explanatory variables were included: gender, age at diagnosis, CD disease duration, smoking, family history for IBD, extra intestinal manifestations, corticosteroid use before randomization, perianal disease and C-reactive protein.
Results: Data were obtained for 128 of the 143 LIR!C patients (89.5%). Median time of follow-up was 25.5 [IQR 10.3-57.8] months. In the IFX group 37 (59.7%) patients received immunomodulator treatment after randomization as opposed to 24 (36.4%) in the ICR group. No difference was observed in the distribution of interventions between groups (log-rank p=0.560). The incidence rate of intervention was 20% and 18% per patient-year in the IFX and ICR group respectively. The median time without an intervention was 34 [IQR 0.0-68.9] and 33 [IQR 3.1-62.9] months respectively. In both the IFX group (HR 0.457 [95%CI 0.224-0.932] p=0.031) and the ICR group (HR 0.306 [95%CI 0.144-0.648] P=0.002), immunomodulator use after randomization was associated with lower risk of a therapeutic intervention in multivariable analysis.
Conclusion: No difference in the need for additional therapeutic interventions was observed for ICR compared to IFX in adult patients with immunomodulator refractory ileocecal Crohn's disease. These long-term data corroborate the results of the LIR!C trial. The use of an immunomodulator was associated with a lower risk of therapeutic intervention in both groups.

Optimal Timing Of Ileocecal Resection In Crohn's Disease: Clinical Outcome After Acute, Early And Late Surgery

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Early ileocecal resection (ICR) in Crohn's disease (CD) may prolong clinical remission and reduce the risk of complications. Optimal timing of ICR is yet unknown as long-term data comparing the clinical outcome after ICR at different CD stages are scarce. In this study, we aim to compare the disease course in CD patients following acute, early and late surgery.
CD patients aged >16 years who underwent ICR between 2000 and 2018 in one academic and two teaching hospitals were included. Patients were identified in local pathology and clinical databases. Demographic, clinical and surgical data were collected from medical charts. The timing of surgery was subdivided into three groups: ICR within 1 month after diagnosis (acute surgery), within 1 year after diagnosis (early surgery) or more than 1 year after diagnosis (late surgery). The primary outcome was clinical recurrence, defined as the start or switch of CD medication for symptomatic disease. Secondary outcomes were endoscopic recurrence (Rutgeerts score ≥i2b) and/or radiologic recurrence (echo, CT and MRI), surgical recurrence (reresection), hospitalization and mortality. Kaplan Meier survival analysis and Cox proportional hazard analysis were performed.
A total of 206 CD patients (120 females (58%)) were included. Acute ICR was performed in 31 (15%), early surgery in 47 (23%, median 5.6 months, range 1-12) and late surgery in 128 patients (62%, median 68 months, range 12-457). The median follow-up after ICR was 4.7 years (IQR 2.1-9.3). The cumulative probability of clinical recurrence after acute surgery was 14%, 43% and 53% after 1, 5 and 10 years respectively, significantly lower as compared to 27%, 66% and 87% for early surgery (p=0.043) and 24%, 76% and 92% for late surgery (p=0.006). The difference between early and late surgery was not statistically significant (p=0.406). No significant differences between the groups were observed regarding endoscopic and/or radiologic recurrence (p=0.288), surgical recurrence (p=0.196) and hospitalization (p=0.495). No mortality occurred. At backward multivariate analysis, BMI (HR 1.09, 95%CI 0.32-1.15, p=0.004) and ileocolonic disease (HR 3.31, 95%CI 1.75-6.25, p<0.001) were significantly associated with clinical recurrence, whereas postoperative prophylactic CD medication was identified as a protective factor (HR 0.51, 95%CI 0.28-0.94, p=0.03).
Conclusion: The long-term outcome of acute ICR at CD diagnosis is characterized by lower rates of clinical recurrence as compared to early and late surgery. Although a trend was seen in favor of early ICR, no statistically significant difference in clinical outcome was observed between early and late surgery.

Long-term efficacy and safety of allogeneic bone marrow-derived mesenchymal stromal cells for perianal fistulas in patients with Crohn's disease: a 4-year follow-up study

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Background: Very few effective treatment options to accomplish closure of the perianal fistula track in patients with Crohn's disease have been reported. The results from our dose-finding study showed that local administration of mesenchymal stromal cells (MSCs) is safe and local injection of $1x10^7$ and $3x10^7$ MSCs promoted fistula healing. In the current study we present the 4-years efficacy and safety data of two of the three dose cohorts.
Methods: All patients from cohort 1 (2 - placebo; 5 - $1x10^7$ MSCs) and cohort 2 (2 - placebo; 5 - $3x10^7$ MSCs) were invited for evaluation. The patients treated in cohort 3 (2 - placebo; 5 - $9x10^7$ MSCs) will be seen in the next few months. Adverse events were registered and fistula healing was evaluated. All MSC-treated patients were asked to undergo a pelvic MRI scan.
Results: From both groups of patients treated with MSCs, 4 out of 5 patients were available for long-term follow-up after 4 years. One of the patients in cohort 1 died because of an adenocarcinoma of the cecum (described in the original paper) and one patient in cohort 2 was lost to follow-up. With regards to therapy efficacy, fistula closure 4 years after MSC-therapy was observed in 3 out of 4 patients treated with $1x10^7$ MSCs and in 4 out of 4 patients treated with $3x10^7$ MSCs. All 4 placebo-treated patients in cohort 1 and 2, still had draining fistulas at deblinding of the study and were offered post study treatment with MSCs. Two of these 4 patients were indeed treated, now 2 years ago (both are not included in the current follow-up study). A total of 6 out of 8 evaluated MSC treated patients were willing to undergo a pelvic MRI in the 4 year follow-up visit. In all 6 patients, the original perianal fistula tract(s) were still seen on MRI.
Most of the reported adverse events, both in placebo and in MSC treated patients, were in line with the nature of the underlying disease and immunosuppressive medication. However, in one patient treated with $3x10^7$ MSCs, a superficial lesion in the distal rectum showed the presence of Epstein-Barr virus-associated B-cell proliferative disease. Molecular and cellular analysis indicated no relation with MSC-therapy.
Conclusion: After 4 years, 8 of 10 patients treated with 1 or $3x10^7$ MSCs could be evaluated and 88% of these patients reported the absence of draining fistulas, compared to 0% of the patients treated with placebo after 3 years of follow-up. Two serious adverse events have been reported in the long-term follow-up, but found not to be directly related to MSC therapy. Our preliminary data show that long-term fistula closure can be achieved with a single MSC treatment.

Implementation and evaluation of a screening and treatment protocol for the low anterior resection syndrome

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Introduction: The introduction of the Total Mesorectal Excision for colorectal cancer has resulted in significantly improved survival rates. However, even years after a low anterior resection (LAR), many patients experience persisting bowel complaints. This is referred to as Low Anterior Resection Syndrome (LARS) and has a severe adverse effect on quality of life (QoL). Its diverse nature makes it difficult to find a univocal treatment. This study aimed to evaluate a structured multi-model screening and treatment protocol for patients with LARS after colorectal cancer surgery.
Methods: A retrospective comparative cohort study was conducted among patients who underwent LAR or sigmoid resection between 2010-2017. Bowel dysfunction was assessed by the LARS score, while the EORTC QLQ-C30 and QLQ-CR29 questionnaires assessed general and colorectal specific QoL. Results of patients treated after protocol implementation were compared with a cohort before implementation.
Results: 243 patients were included, 195 of them were treated before and 48 after protocol implementation. Patients that underwent LAR after protocol implementation showed significantly lower median LARS scores (31 vs. 18, p=0.02) and less major LARS (51.9% vs. 26.3%, p=0.045). Patients that underwent sigmoid resection after protocol implementation did not present with similar changes. Nevertheless, multiple QoL domains showed clinically and statistically significant positive changes for patients treated with LAR or sigmoid resection after implementation of the protocol.
Conclusion: The use of this simple and non-invasive screening and treatment protocol for LARS after colorectal surgery results in lower LARS scores and better QoL.

Simultaneous resection of colorectal carcinoma and liver metastasis, a safe alternative

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Introduction: As much as 25-30% of the patients presenting with colorectal carcinoma has metastatic disease, mostly liver metastases. If resectable, a simultaneous resection is increasingly performed, because of faster recovery, shorter length of stay, and efficiency. This study evaluates the safety and applicability of simultaneous resection.
Methods: Patients with colorectal carcinoma and synchronous liver metastasis who were treated with simultaneous resection between july 2013 and september 2017 were included. Patients only treated with radio frequency ablation (RFA) were excluded. Patients were analyzed on morbidity and mortality. Clavien-Dindo scores of 3 or higher (re-intervention) were considered as significant morbidity. Subgroups were analyzed in order to identify risk groups.
Results: For this analysis 54 patients were included. The colorectal resection was performed 38 times for colon carcinoma and 16 times for rectal carcinoma. In 7 cases the liver resection was major (3 Couinaud segments or more). The operation was performed laparoscopically in 8 patients, 40 patients had open surgery, and 6 patients had partly open and partly laparoscopic surgery. No post-operative mortality was reported. In 20% of the patients, significant morbidity occurred. Unplanned hospital readmission occurred in 30% of the patients, for various reasons. Morbidity for colon resection and rectal resection was not different. No higher morbidity was reported for major liver resections relative to minor resections, 0% and 23% respectively (p=0,32).
Conclusion: Simultaneous resection in both colon carcinoma and rectum carcinoma with liver metastasis can be performed safe in a selective group of patients, even with major liver resection.

Validation of the CLASSification of Intra-operative Complications (CLASSIC) score: a prospective cohort study of abdominal surgeries

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Background: Surgical outcomes depend on the quality of both operative and postoperative care. Validated classification systems for evaluation of intraoperative adverse events (iAEs) are not available. Recently, the *class*ification of *i*ntraoperative *c*omplications (CLASSIC) score has been proposed to grade iAEs. The aim of this study is to assess the internal validity of the CLASSIC score and its predictive value for postoperative complications in a large cohort of elective abdominal surgeries.
Methods: We made use of the detailed data on iAEs from the LAPAD study that was previously collected by an independent researcher in the operating room. Two independent teams, consisting of a dedicated researcher and surgeon, scored all registered iAEs according to the CLASSIC score . An interclass correlation coefficient was calculated to determine the internal validity. Univariate and multivariate analyses were used to correlate the CLASSIC score with post-operative complications (Clavien-Dindo).
Results: We reviewed a total of 755 abdominal surgeries for iAEs. Intraoperative adverse events were scored in 333 surgeries (44.1%) by team 1, and 324 (42.9%) by team 2 .. In 86.9% there was an agreement between both teams in the classifications of iAEs. The inter-rater reliability for CLASSIC score was 0.873 (95% CI 0.842-0.904). In 86 (11.4%) patients a severe iAE (CLASSIC score 3 or higher) was scored. Post-operative complications were scored in 278 (36.8%) surgeries. In 27 (31.4%) patients with severe iAE, a major post-operative complication was scored (Clavien-Dindo grade 3 or higher), compared to 52 (20.9%) of patients with minor iAE, and 50 (11.9%) with no iAE ($p<0.001$). An iAE was a significant and independent risk factor for severe post-operative complications in multivariate analysis, with OR 1.97 (95% CI 1.28 - 3.04) for minor iAEs and OR 3.07 (95% CI 1.76 - 5.34) for severe iAEs.
Conclusions: The newly proposed CLASSIC score is a reliable tool for the classification of iAEs, with a good inter-observer correlation. The classification of iAEs according to CLASSIC correlates with the risk of severe post-operative complications.

National Colorectal Cancer Screening Program: Increasing Number of Surgical Procedures Does Not Lead to More Complications

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Background: In January 2014, the Dutch population screening program was introduced to reduce the mortality rate of colorectal cancer (CRC). Due to this program, the number of endoscopically detected colorectal adenomas has increased substantially. In general, benign polyps are removed endoscopically, and only in selected cases surgery is required. The aim of this study was to evaluate and compare the clinical outcome and the number of surgical resections before and after implementation of the Dutch CRC screening program.
Method: Patients who underwent surgical removal of colorectal polyps between January 2012 and December 2017 were retrospectively analyzed. Patients with preoperatively established malignancy, hereditary (non-)polyposis and those who underwent emergency surgery were excluded.
Results: 164 patients were included. A segmental colectomy (major surgery) was performed in most cases (70.1%, *n* = 115); the remaining 49 patients (29.9%) underwent transanal endoscopic microsurgery or laparoscopic wedge resection (minor surgery). Surgery was performed laparoscopically in 80.5% (*n* = 132) with a conversion rate of 4.4% (*n* = 6). In the two years before implementation of the CRC screening program, a total number of 18 patients in 2012 and 17 patients in 2013 with surgically resected colorectal polyps were included. Since the implementation, this number has increased every year to 36 patients in 2017. Though prior to the implementation all surgical procedures were major surgeries, 41.2% of surgical resections were minor surgical procedures afterwards ($p < 0.001$). In 2017, 50% of the included patients who underwent surgery had a positive fecal immunochemical test (FIT) in the Dutch screening program. The overall complication rate after minor surgery was 16.3%, compared to 44.3% after major surgery ($p = 0.001$). Major complications (Clavien-Dindo ≥ 3b) occurred in 8 patients (4.9%), of which 7 after major surgery, with no mortality. The anastomotic leakage rate was 3.5% (*n* = 4).
Conclusion: Since the implementation of the CRC screening program, the number of surgically resected colorectal polyps has doubled, with a shift towards minor surgery. Minor surgery is associated with a lower complication rate compared to major surgery.

A shared decision approach to chronic abdominal pain based on cine-MRI: a prospective cohort study

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Objective: Chronic abdominal pain develops in 11-20% of patients undergoing surgery of the gastro-intestinal tract. Patients with chronic pain after surgery are frequently admitted to gastro-enterologists, surgeons and gynaecologists. One of the most frequent causes of pain is postoperative adhesions. Diagnosis and treatment of adhesions, however, are controversial. In this study we evaluate results of a novel diagnostic and therapeutic approach for pain associated with adhesions.
Methods: Prospective cohort study including patients with a history of abdominal surgery referred to the outpatient clinic of a tertiary referral centre for evaluation of chronic abdominal pain. Subgroups were made based on outcome of adhesion mapping with cine-MRI and shared decision making. In operatively managed cases anti-adhesion barriers were applied after adhesiolysis. Long-term results for pain were evaluated by a questionnaire.
Results: 106 patients were recruited. 79 patients had adhesions on cine-MRI, 45 of whom underwent an operation. Response rate to follow-up questionnaire was 86.8%. In the operative group (Group 1), the number of negative laparoscopies was 3 (6%). After a median of 19 (range 6-47) months follow- up 80.0% of patients in group 1 reported improvement of pain, compared to 42.9% in patients with adhesions on cine-MRI who declined surgery (group 2), and 26.3% in patients with no adhesions on cine-MRI (group 3), P=0.002. Consultation of medical specialists was significantly lower in group 1 compared to groups 2 and 3 (35.7% vs. 65.2% vs. 58.8%; P=0.023).
Conclusion: We demonstrate long-term pain relief in two-thirds of patients with chronic pain likely caused by adhesions, using cine-MRI and a shared decision making process. Long-term improvement of pain was achieved in 80% of patients who underwent surgery with concurrent application of an anti- adhesion barrier.
The study was registered at clinicaltrials.gov under NCT01236625 26
Keywords: Chronic pain, functional bowel disorders, adhesions, laparoscopy, MRI

Adding family history of colorectal cancer to the fit-based screening program in a dutch colorectal cancer screening population sample

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Background: Screening for colorectal cancer (CRC) with the fecal immunochemical test (FIT) has suboptimal sensitivity for detecting advanced neoplasia (cancer and advanced adenomas). To increase the sensitivity and yield of a FIT-based screening program, FIT could be combined with other risk factors for advanced neoplasia, such as family history of CRC. We evaluated the incremental yield of adding questionnaire on family history of CRC and Lynch syndrome associated tumors to a FIT-based screening program.
Methods: In this prospective population-based CRC screening trial, we randomly selected 6,000 screening naive men and women in North-Holland, aged 59 to 75 years. All of them received an invitation to complete a FIT (FOB-Gold) and a validated, online family history questionnaire. Participants with a positive FIT (cut-off value 275ng/ml) and/or a positive family history, confirmed after genetic counseling, were referred for colonoscopy. The yield of detecting advanced neoplasia in the FIT-only strategy was compared to the combined strategy.
Results: Of the 5,979 invitees, 1,952 (33%) participants completed FIT only, 2,379 (40%) completed both FIT and the family history questionnaire and 95 (2%) completed only the family history questionnaire. Of the 125 participants eligible for referral to a clinical geneticist based on their questionnaire responses, only 50 (40%) underwent genetic counseling; 46 (37%) declined referral and 29 (23%) had previously received genetic counseling or colonoscopy surveillance. After genetic counseling, fourteen additional colonoscopies were performed in individuals with a FIT negative result, with no additional advanced neoplasia detected. The positive predictive value for advanced neoplasia of the combined strategy was 54% (95%CI: 47-61%) compared to 58% (95%CI: 51-65%) using the FIT only strategy (p-value = 0.43).
Conclusion: In this study in the Dutch FIT-based screening program we observed no added value of using a validated, online family history questionnaire in detecting advanced neoplasia. However, patients at increased risk of developing CRC, who should undergo colonoscopy screening instead of participating in the CRC screening program, were identified.

Practice And Yield Of CT-Colonography In Ifobt Positive Individuals In The Dutch Bowel Cancer Screening Program, A 4 Years' Experience

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Background and Aims: The Dutch bowel cancer screening program was introduced in January 2014. In iFOBT positive patients a colonoscopy is offered as first choice diagnostic work-up. A CT-colonography (CTC) is performed as an alternative, e.g. in patients with (severe) comorbidity. The aim of this study is to evaluate the practice of CTC and the yield of both colonic as extra-colonic pathology in iFOBT positive individuals.
Methods: All primary and secondary CTCs performed in iFOBT positive individuals referred to our large community hospital between 1 January 2014 and 31 December 2017 were included. CTC imaging and initial reports were re-evaluated by two radiologists (1 senior and 1 junior). Both colonic and extra-colonic pathology were assessed. Also were clinical, endoscopy and pathology reports reviewed. Significant extra-colonic pathology is defined as a radiological finding for which further diagnostic and/or therapeutic work-up is indicated. The actual clinical management after CTC with significant extra-colonic pathology was also evaluated.
Results: In the 4 year time period, 3966 individuals were referred because of an iFOBT positive test. The majority (3752 individuals, 95%) underwent a colonoscopy. In 79 (2%) individuals a CTC was performed as primary work-up; in 66 (84%) individuals because of multiple comorbidity, in 9 (11%) cases on own request and 4 (5%) individuals because of expected difficult colonoscopy e.g. due to previous intra-abdominal surgery. 23 (29%) individuals underwent an additional colonoscopy after primary CTC. In only 39 (1%) individuals a secondary CTC was performed because of incomplete colonoscopy. Colonic findings in primary CTC were found in 29 (37%) individuals and consisted of the suspicion of colorectal cancer (n=15), polyps ≥10 mm (n=11) and (segmental) colitis/diverticulitus (n=6). In all performed CTCs (n=118) significant extra-colonic pathology was found in 11 (9%) individuals. Etiologies were: cardiovascular (e.g. AAA) (n=6); thickened gastric wall (n=3); and malignant findings (pancreas and lymphoma) (n=2). Finally, in 36% of these individuals the clinical management was adjusted.
Conclusion: In our center a primary CTC was performed in the minority of the referred iFOBT positive individuals. In almost one third primary CTC was followed by a colonoscopy. Overall, one out of ten performed CTCs showed extra-colonic findings that have an indication for further diagnostic and/or therapeutic work-up. The latter can be of importance for the informed consent procedure.

Scar-biopsies after malignant colorectal polypectomy of uncertain radicality

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Background and aims: Approximately 50% of T1 colorectal carcinomas (T1 CRCs) are misjudged as benign. Inadequate endoscopic resection often results in unclear resection margins at histology. Adjuvant surgery shows residual malignancy in 6-14% of cases. Biopsies from the polypectomy site are variably used in clinical practice to provide additional evidence for a local radical excision if they are negative for residual cancer. We aimed to evaluate the sensitivity of biopsies from the endoscopic polypectomy site for residual tumor in the bowel wall.
Methods: This concerns an interim report of an ongoing prospective multicenter study (SCAPURA study). Patients scheduled for adjuvant surgery or full thickness resection after endoscopic irradical polypectomy without high-risk features for lymph node metastasis were asked to consent for biopsies from the polypectomy site before surgery.
Results:Eighty-one patients have been prospectively included (mean age 66.9 years, 34% female, rectosigmoid location 82%). In 84% malignancy had not been recognized during initial polypectomy. Resection margins of fragments were tumor positive in 34 (42%), impossible to assess in 32 (40%) and < 1 mm free in 15 (18%) patients. Segmental bowel or full thickness resection was performed in 56 and 25 patients, respectively. At second look, tumor or adenomatous remnants were visible in 3 and 6 patients respectively, with adenocarcinoma in biopsies in 2 and 1 patient respectively. Two of these 3 cases with adenocarcinoma in biopsies had also malignancy in the resection specimen (expert review is going on). Despite the absence of visible neoplastic remnants and clean biopsies, 4 patients had tumor remnant in the bowel wall from the resection specimen. In patients without visible neoplasia during biopsies no malignancy was found in biopsies. In total, 6 (7.4%, 95% CI 2.5-13.6%) of patients had residual adenocarcinoma in the resection specimen, of whom only 2 were detected at preoperative biopsies (sensitivity 33%, one-tailed 95% CI < 67%, one-tailed 95% CI > 96%, specificity 99%). As all of these patients had visible remnants, the sensitivity of biopsies from a postpolypectomy site without visible neoplastic remnants was 0/4 (number too low to make statistical assumptions). The likelihood of remnant tumor in case of negative biopsies was reduced from 7.4% to 5.1%.
Conclusion: Negative biopsies from the polypectomy site probably have a low sensitivity for remnant tumor. The presence of visible neoplastic remnants is a strong indicator for additional resection.

Endoscopic cryoballoon ablation for eradication of esophageal squamous cell neoplasia: 12-months results of a prospective cohort study in China

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Introduction: Globally 80% of all esophageal cancers are esophageal squamous cell cancer (ESCC), arising from squamous cell neoplasia (ESCN). Although patients with ESCC have poor prognosis, curative endoscopic treatment can be performed for ESCN. ESCN mainly occurs in developing countries often with limited endoscopic expertise and resources, like Central and Eastern Asia. Hence, an easy-to-use, low-cost treatment for ESCN would be of great value. The cryoballoon focal ablation system (CbFAS) is a novel endoscopic ablation therapy that comprises a portable handle, a through-the-scope catheter with a conformable balloon and a cartridge with nitrous oxide. The balloon is simultaneously inflated and cooled, resulting in ice patches of ±2cm^2. Although early studies for CbFAS of Barrett's esophagus have shown promising results, limited data are available for its use in ESCN. We aimed to assess the safety, tolerability and efficacy of CbFAS in the eradication of ESCN.
Methods: In this single-center prospective trial in China, patients with one flat (Paris type 0-IIb) unstained lesion (USL) on Lugol's chromoscopy, <6cm in length and <50% of the esophageal circumference, with a diagnosis of Moderate/High Grade Intraepithelial Neoplasia (MGIN/HGIN) were enrolled. At baseline, the entire USL was ablated with side-by-side ablations of 10 seconds each. Safety phone calls were performed at days 2, 7 and 30. Follow-up endoscopies with biopsies and retreatment of persisting USLs were performed at 3 month intervals, and all patients underwent a 12 months endoscopy. Outcomes: adverse events; 11-point visual analogue scale (VAS) for pain; complete response (CR: absence of MGIN or worse in biopsies) rates at 3 and 12 months.
Results: We enrolled 80 patients (59 MGIN, 21 HGIN) with a median USL length of 3 (IQR 3-4) cm. Median 5 (IQR 4-7) side-by-side ablations were performed per patient over a median ablation time of 8 (IQR 5-10) minutes. After a single treatment, 70/78 patients (90%) exhibited CR and 8/78 (10%) patients had residual USL and were retreated; all had CR 3 months later. The other 2 patients were lost to follow-up. At 12 months, 76/78 patients (97%) exhibited CR whereas 2 patients had a recurrent USL with MGIN. No strictures or serious adverse event had been noted. Three patients developed self-limiting mucosal lacerations upon balloon inflation. Post-procedure median VAS was 1 (IQR 0-2) at day 2 and 0 (0-0) at days 7 and 30.
Conclusions: Results of our prospective cohort study in China suggest that CbFAS of ESCN is safe, well-tolerated, and highly effective in inducing endoscopic and histological remission.

How to handle tissue specimens after endoscopic mucosal resection for Barrett's esophagus related neoplasia: a multicenter randomized trial comparing three specimen handling methods

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Introduction: Endoscopic resection is the cornerstone in treatment of Barrett's esophagus (BE) related neoplasia. The optimal method for handling of endoscopic mucosal resection (EMR) specimens directly after the endoscopy however, remains unknown. As a result, practice varies widely around the world. The aim of this study is to compare three specimen handling methods for 1) enabling optimal evaluation of all clinically relevant histologic parameters and 2) required time for handling.
Methods: In this multicenter, randomized trial, EMR specimens of visible lesions in BE with no suspicion of submucosal invasion during endoscopy were randomized to three handling methods: pinning on paraffin, direct fixation in formalin and the newly introduced cassette technique. The cassette is a small box in which a specimen can be enclosed after stretching it out on paper. By closing it, gentle pressure is applied during formalin fixation to prevent curling of the lateral margins. The pinning method comprises smooth stretching of the specimen and pinning it on cork or paraffin. Direct fixation in formalin requires no handling at all. Primary outcome was an overall optimal histopathologic evaluation score of 5, on a 5 point Likert scale. Secondary outcomes were evaluation scores for all histopathologic parameters separately and time required for handling. The evaluation scores were assessed by 2 BE expert pathologists blinded for the handling method.
Results: In total, 127 specimens of 42 patients were randomized, with a median of 2 (IQR 1-4) specimens per patient. Of these, 45 were assigned to pinning on paraffin, 40 to the cassette technique, and 42 to direct fixation in formalin. The percentages of specimens with overall optimal evaluation scores were similar for the pinning method (96%) and direct fixation in formalin (93%), but significantly lower for the cassette technique (64%, $p<0.001$). Additional analysis per histologic parameter shows that this difference is caused by the ability to assess the 1) lateral from vertical margin ($p=0.001$); 2) deep vertical margin ($p=0.005$); and 3) lateral margin ($p=0.003$). Time required for handling was shortest with direct fixation in formalin ($p<0.001$ vs. pinning and Cassette). Needle artifacts were present in 25 of the pinned specimens (57%).
Conclusion: EMR specimens can be directly fixated in formalin, provided that there is no suspicion of submucosal invasion during endoscopy and that the specimens will be evaluated by experienced BE pathologists. Direct fixation in formalin is the preferred handling method, since it results in a significantly shorter handling time without derogating the histopathological evaluation.

Artificial Intelligence identifies early Barrett's neoplasia in in-vivo biopsy-correlated Volumetric Laser Endomicroscopy images

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Background & aims: Volumetric laser endomicroscopy (VLE) provides a circumferential near-microscopic scan of the superficial esophageal wall layers, and has potential to improve the detection of early Barrett's esophagus (BE) neoplasia. However, the interpretation of numerous grey-shaded VLE images is complex and time-consuming. Artificial intelligence using novel machine and deep learning techniques may aid in this process. Recent studies have focused on neoplasia detection algorithms based on *ex-vivo* VLE images. Our study is the first to investigate the feasibility of *in-vivo* BE neoplasia detection using computer-aided detection of VLE images.

Patients & Methods: A prospective single-center study was conducted including 23 Barrett's patients with and without early neoplasia. High quality *in-vivo* VLE-histology correlation was provided by laser marking. Laser marked regions of interest consisted of non-dysplastic BE (88 NDBE), and high-grade dysplasia and/or esophageal adenocarcinoma (34 HGD/EAC). Conventional machine learning and recent deep learning techniques were evaluated for the analysis of these regions of interest and differentiate between non-dysplastic and neoplastic tissue. Tissue was first segmented with a pre-trained convolutional neural network (U-net) and clinically inspired features were used for classification between non-dysplastic tissue and neoplasia. The reproducibility of the results were independently validated by leave-one-out cross-validation.

Results: In total, eight different machine learning methods were used for BE neoplasia detection resulting in area under the curves ranging from 0.82 – 0.90. The clinically derived feature layer histogram in combination with Naive Bayes Classifier demonstrated the most optimal performance. This i*n-vivo* method resulted in an accuracy of 84.4% and an area under the curve of 0.90. Corresponding sensitivity was 73.5% and specificity was 88.6% for the differentiation between 88 NDBE and 34 HGD/EAC VLE images. Negative predictive value and positive predictive value were 89.7% and 71.4%, respectively. Average time for the computer algorithm to analyze a VLE image was 15 milliseconds.

Conclusions: Artificial intelligence, using both machine- and deep learning techniques, correctly identify *in-vivo* biopsy-correlated VLE images of early BE neoplasia. The clinically derived feature layer histogram shows high detection accuracy. This study shows feasibility of fast and objective computer aided detection, bringing real-time, red-flag identification one step closer.

The argos project: computer aided detection system can detect barrett neoplasia on endoscopic images with high accuracy

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Background: Early neoplasia in Barrett's esophagus (BE) is difficult to detect during endoscopy This is partly because of its subtle appearance and partly because most endoscopists rarely encounter early BE neoplasia and therefore are unfamiliar with its endoscopic appearance . Computer aided detection (CAD) systems might assist endoscopists in the recognition of early BE neoplasia, thereby improving efficacy of BE surveillance. Ideally, a CAD system is incorporated in the endoscopy system and would run real-time on the background during surveillance endoscopies. Clinically-inspired CAD systems are trained with labelled data and predefined image features. These systems have shown to be suitable for small and unbalanced databases.
Aim: To develop a clinically inspired CAD system using high quality endoscopic images of BE neoplasia.
Methods: Endoscopic overview images of 40 subtle early neoplastic BE lesions and 20 non-dysplastic (ND)BE patients were prospectively collected in White Light Endoscopy (WLE) in three tertiary referral centers. Six international BE experts annotated all neoplastic images using a proprietary online delineation module specifically designed for this project.
The overlap area of ≥4 expert delineations was considered to have the highest suspicion of visible neoplasia and was labeled as *the sweet spot*. The area with ≥1 expert delineations was labelled as *the soft spot*. The CAD system was trained on local color and texture features (using Gabor filters) of the images, where positive features were taken from the sweet spot of the neoplastic images and negative features from the area outside the soft spot and from the NDBE images. Performance was evaluated using a leave-one-out cross validation on a per image basis.
Outcome parameters: 1) Detection scores: diagnostic accuracy of the algorithm per image in terms of accuracy, sensitivity, specificity, NPV and PPV; 2) Localization scores: Percentage of recognized neoplastic images where the delineation of the algorithm detected the soft spot and sweet spot.
Results: Accuracy, sensitivity, specificity, NPV and PPV for detection were 88.3%, 92.5%, 80%, 84.2% and 90.2% respectively. The percentage of the soft- and sweet spot that was recognized was 94.6% and 89.2%, respectively.
Conclusion: This CAD system detected early neoplastic BE lesions on endoscopic WLE images with high accuracy, thereby showing feasibility of CAD systems as a red-flag detection technique and taking an important step towards real-time automated detection of early BE neoplasia.
Future work will focus on further development of the algorithm towards video analyses and the development of a deep learning algorithm.

Early Diagnosis Is Associated With Improved Clinical Outcome In Benign Esophageal Perforations: An Individual Patient Data Meta-Analysis

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Introduction: Benign esophageal perforations (BEP) are subdivided in two groups; (1) spontaneous esophageal perforations, also known as Boerhaave's syndrome, and (2) iatrogenic esophageal perforations. The time of diagnosis of BEP is regarded as an important risk factor for poor outcome. However, no strong evidence exists to support this finding. We investigated whether timing of diagnosis is associated with clinical outcome of patients with BEP.

Methods: A systematic review (PROSPERO registry: CRD42018093473) was performed following the PRISMA-guidelines. Clinical studies of adult patients treated for iatrogenic or spontaneous perforations were identified from Medline, Embase and Cochrane databases. After including studies that met the study criteria, invited corresponding authors shared individual patient data (IPD) and a meta-analysis was performed. Patients were divided in two groups; (1) early diagnosis (ED) (≤ 24 hours); and (2) late diagnosis (LD) (> 24 hours), after symptom onset. To compare both groups, we used propensity score analysis to match while correcting for age, gender, etiology, location of perforation and treatment (conservative, endoscopic or surgical therapy). Outcomes were mortality, intensive care unit (ICU) admittance and re-interventions.

Results: The systematic search yielded 146 studies eligible for inclusion. If possible, we invited corresponding authors of included studies (n = 115) to share IPD. In total, 20 authors (17%) responded and shared IPD. A total of 751 patients (iatrogenic n = 429, spontaneous n = 322) were included in the IPD meta-analysis. The mean age of BEP was 65 years (± 18.0) and 491 patients (65%) were male. Initial treatment strategies consisted of a conservative (n=165), endoscopic (n=176) or surgical (n=399) management. Of all patients, 107/751 (14.2%) died, 441/628 (58.7%) required ICU care and 215/746 (28.6%) a re-intervention. After matching, we selected 324 ED patients and 125 LD patients for comparative analysis. ED was associated with a 16.3% reduction in need for ICU admittance (ED: 61.9% vs LD: 78.2%; p = 0.024) and a 27.8% reduction in need for re-intervention (ED: 21.3% vs LD: 49.1%; p = < 0.001). A reduction of 6.4% in mortality was observed in the ED group, but this was not significantly different (ED: 12.7% vs LD: 19.1%; p = 0.17).

Conclusion: Real-world data show that early diagnosis of a BEP is associated with improved clinical outcome. This association confirms results from previously published small cohort studies and expert opinion.

Measurement of mucosal mitochondrial oxygen during upper endoscopy as a potential novel test for the diagnosis of mesenteric ischemia

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Background: Chronic mesenteric ischemia (CMI) is a grave and debilitating condition. Variability of symptoms and abundant collateral circulation, makes diagnosing CMI challenging, especially in single vessel disease. Functional tests such as tonometry and visible light spectroscopy (VLS) are used to detect mucosal ischemia, but both have their limitations. An easy-to-use and accurate functional test to diagnose CMI is highly desired. Protoporphyrin IX-triplet state lifetime technique (PpIX-TSLT) is a novel method used to measure oxygen in mitochondria. After administration of aminolevulinicacid (ALA) mitochondrial PpIX increases. Green light is used to excite PpIX during the measurements. After collision with oxygen molecules PpIX returns to its ground state, while emitting light. The duration of light emission is measured. When few mitochondrial oxygen is present, collisions are less likely to occur resulting in a longer duration of light emission. *In vivo* measurements of mitochondrial oxygen have been performed in skin and liver, but this technique has never been applied to perform *in vivo* endoscopic mucosal oxygen measurements. Aim of the current study was to verify the feasibility of measuring mucosal mitochondrial oxygen during upper endoscopy.
Methods: Mitochondrial oxygen measurements were performed in seven healthy volunteers during upper endoscopy, 4 hours after oral administration of ALA. Two volunteers received a dose of 5mg/kg, 5 volunteers received 20mg/kg. In all volunteers measurements were conducted at 3 mucosal spots in the antrum, duodenal bulb and descending duodenum. Measurements were performed with the catheter close to the mucosa and while applying pressure in order to induce local ischemia by compromising capillary circulation. Measurements are reported as 1 divided by duration of light emission in microseconds, whereby high values represent high oxygen content.
Results: Measurements proved easy to perform and were successful in all 7 volunteers. Median and interquartile ranges (IQR) of the measurements without application of pressure were 92.2 (61.2-131.7) in antrum, 41.2 (31.6-48.9) in duodenal bulb and 15.6 (11.1-26.4) in duodenum. Values decreased significantly ($p<0.001$) in all locations when pressure was applied. Median (IQR) during pressure in the antrum was 52.1 (32.4-69.4), in the duodenal bulb 12.5 (9.6-22.0) and in the duodenum, 8.7 (7.7-10.9).
Conclusion: Endoscopic measurement of mucosal mitochondrial oxygen is technically feasible and demonstrated to be oxygen dependent. *In vivo* endoscopic mucosal mitochondrial oxygen measurements are a possible novel functional test for the diagnosis of CMI.

Endoscopic resection of ampullary adenomas; a retrospective cohort study

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Background and goal: Endoscopic papillectomy (EP) is a minimal invasive treatment for adenoma of the ampulla of Vater. Ampullary adenomas can be found sporadically but also in the context of familial adenomatous polyposis (FAP). Although EP is currently the standard treatment for non-malignant ampullary tumors without significant extension into the biliary or pancreatic duct, large series are still scarce. Primary goal was to assess the incidence of short term complications and local recurrence. Secondary aim was to assess technical success and to establish risk factors for complications and local recurrence.
Methods: A single centre retrospective cohort study was performed including all patients who underwent EP between 2003 and 2017 at a large tertiary referral centre. Primary outcomes were local recurrence and overall short-term (30 days) complications and mortality. Recurrence was defined as either histologic proven or suspicion based on endoscopic appearance treated with argon plasma coagulation (APC) at follow-up endoscopy. Technical success was defined as macroscopic complete resection during the initial EP procedure. Complications included pancreatitis, delayed bleeding, cholangitis and perforation, and were defined using general consensus criteria. The chi-square test was used to identify risk factors for complications and local recurrence.
Results: A total of 147 patients were identified from a prospectively collected endoscopic database. Thirty patients (20%) were known with FAP. Technical success was accomplished in 81% (119 patients). The overall complication rate was 18.3% (27). The individual complication rates were: delayed bleeding 10% (15), pancreatitis 6% (9), cholangitis 4% (6) and perforation 0% (0). Mortality was 0.7% (1). 103 patients underwent at least 1 follow-up at our centre. The total recurrence rate was 33% (34), 24% (25) had histological proven recurrence and 9% (9) were treated with APC based on endoscopic suspicion without biopsies. Independent risk factors for recurrence were piece-meal resection (OR 2.72, CI 1.15-6.44) and intraductal growth (OR 3.19, CI 1.071-9.50). No significant risk factors for complications were identified.
Conclusion: Endoscopic papillectomy has a relatively low morbidity and mortality rate. Recurrence rate however, was relatively high at follow-up endoscopy, which emphasizes the need for strict follow-up protocols. Piece-meal resection and intraductal growth of the adenoma were independent risk factors for recurrence. Large prospective multicentre trials are needed to improve endoscopic treatment of this relatively rare disease.

Complications After Endoscopic Resection Of T1 Colorectal Carcinomas

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Background and Aims: Complications after endoscopic resection (ER) of T1 colorectal cancer (CRC) are scarcely reported in literature. Reported complications for ER of premalignant polyps are bleeding (0.3-6.1%), perforation (0.2-3.0%) and postpolypectomy syndrome (0.5-2.1%). We aimed to determine the incidence of complications after ER of T1 CRC and to identify risk factors associated with these complications.

Methods: From a retrospective cohort of 1891 T1 CRC patients diagnosed in 15 hospitals in the Netherlands between January 2000 and December 2014, 1069 patients with an ER of T1 CRC (with or without adjuvant surgery) were selected. Primary outcome was the number of endoscopic treatment related complications (i.e., bleeding, perforation, postpolypectomy syndrome) requiring re-colonoscopy, surgery, prolonged hospital stay, readmission, or other interventions such as antibiotic therapy or blood transfusion. Secondary outcome was identification of risk factors for endoscopic complications. Patients with complications were compared with random controls from our total cohort in a 1:3 ratio and additional information on anticoagulant therapy and prophylactic clip placement was collected for the identification of risk factors with logistic regression.

Results: Endoscopic complications occurred in 75/1069 (7%) patients. This consisted of delayed or immediate post-polypectomy bleeding (N=56, 5.2%), perforation (N=13, 1.3%) and post-polypectomy syndrome (N=6, 0.6%). No fatal complications were observed. Patients with pedunculated T1 CRC had significantly more bleedings compared with non-pedunculated T1 CRC (6.4% vs. 3.5%; p=0.05) and less perforations (0.6% vs. 2.0%; p=0.05). Univariate analysis showed that the occurrence of complications was associated with larger tumor size (2.5 cm vs. 2.0 cm; p< 0.001) higher ASA score (ASA III + IV, p=0.04), and increasing age (median age 73 years vs. 68 years). In a multiple logistic regression model, higher age (odds ratio (OR) = 1.044; 95% confidence interval (CI) = 1.016-1.072) and larger tumor size (OR=1.273, 95% CI=1.072-1.512) were independent risk factors for complications.

Conclusion: In our cohort, reflecting daily practice, the overall complication rate of ER for T1 CRC was 7.0%, which is comparable with the complication rate of ER for larger premalignant polyps. Larger tumor size and higher age were independent risk factors for complications. This study suggests that endoscopic treatment of T1 CRCs is not associated with an increased risk of treatment related complications.

Primary Sclerosing Cholangitis-Associated Biliary Neoplasia Demonstrate A High Inter- And Intratumour Heterogeneity Of P53 And P16 Protein Expression

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Intratumour heterogeneity in primary sclerosing cholangitis (PSC)-associated cholangiocarcinoma (CCA) may attribute to the diagnostic limitations of cytology and FISH analysis of brushes obtained during ERCP. In addition, these tumours are remarkably resistant to widely different chemotherapeutic drugs. A possible explanation may lie in that PSC-CCA is made up of divergent clones, each with their own genetic defense mechanisms to counteract therapeutic agents. In this study, tumour heterogeneity was assessed through p53 and p16 protein expression analysis in PSC-associated biliary neoplasia.
Formalin-fixed paraffin-embedded tissue samples from resection material of PSC-CCA patients were selected. Sections with CCA and foci with dysplastic epithelium were identified by a GI-pathologist. Immunohistochemistry with p53 and p16 monoclonal antibodies was performed. Two investigators independently scored protein expression, p53 0-mutation/ wildtype/ overexpression and p16 negative/ heterogeneous/ positive.
A total of 21 resection specimens of PSC-CCA were included, and 44 tumour and 10 dysplasia sections were selected. P53 protein expression was classified as 0-mutation, wildtype and overexpression in 4/25/13 in CCA and 1/4/4 in dysplasia. In two patients, 2 CCA and 1 sample with dysplasia showed p53 overexpression with an abrupt transition to 0-mutation. In 6 patients, 7 CCA and 3 samples with dysplasia showed 0-mutation or overexpression surrounded by neoplastic cells with wildtype expression. P16 protein expression was classified as negative, heterogeneous and positive in 14/22/8 in CCA and 1/4/4 in dysplasia. In one sample with dysplasia the heterogeneous pattern gradually changed into diffuse positive. Strikingly, two cases demonstrated heterogeneous p16 protein expression in tumour tissue, whereas dysplasia showed a positive staining.
PSC-associated biliary neoplasia are characterized by a high inter- and intratumour heterogeneity of p53 and p16 protein expression, indicating that such cancers consist of multiple clones with substantially different genetic makeup. This observation may explain the difficulty encountered to reliably diagnosis of this condition using brush cytology and FISH diagnostic strategies and provides a rational explanation for the resilience of these cancers to a large spectrum of chemotherapeutic agents.

Survival of patients with distal cholangiocarcinoma: a population-based Dutch cohort

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Background: Real-life treatment and outcomes of distal cholangiocarcinoma in the Western world are largely unknown. This study investigated treatment, outcomes, time trends and predictors for survival in a nationwide cohort of patients with distal cholangiocarcinoma.
Methods: A population-based cohort derived from the Netherlands Cancer Registry was studied. All patients (resected and unresected) registered to have distal cholangiocarcinoma between 2009-2015 were included. Missing data were handled using multiple imputation. Survival and predictors for survival were analyzed using Kaplan Meier and Cox regression analysis (backward selection).
Results: During the study period, 1152 patients were registered; 537 (46.6%) underwent resection, 376 (32.6%) had unresected non-metastasized disease (M0) and 239 (20.7%) had metastasized disease (M1). In the resected group, 30-day mortality was 5.4% (n=29) and adjuvant chemotherapy was rarely used (8.4%, n=45). Palliative chemotherapy was administered in 19 (5.1%) of the patients with non-resected M0 and in 74 (31.0%) of the M1 tumors. Median overall survival for patients with resected, unresected M0, and M1 tumors was 23 months (95% CI 20-25), 7 months (95% CI 6-8) and 4 months (95% CI 3-5) ($p<0.001$), respectively. Over time, survival did not improve in any of the subgroups. Negative independent prognostic factors for survival in resected patients were increasing age ($p=0.01$), T3/T4 stage ($p=0.02$), higher lymph node ratio ($p<0.001$), poor differentiation ($p<0.001$), and microscopic ($p<0.001$) or macroscopic ($p=0.03$) residual disease.
Conclusion: This largest nationwide Western study demonstrates a 47% resection rate with acceptable survival despite limited use of adjuvant chemotherapy, and poor survival and limited use of chemotherapy in non-resected patients. The study identified predictors for survival which can be useful to stratify future trials with (neo-)adjuvant or palliative treatment.

Quality of life and fear of cancer recurrence in T1 colorectal cancer patients treated with endoscopic or surgical tumour resection

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Background and aims: To optimise therapeutic decision-making in T1 colorectal cancer (T1 CRC) patients, it is important to elicit the patient's perspective next to considering medical outcome. Because empirical data on patient-reported impact of different treatment options are lacking, we evaluated patients' quality of life, perceived time to recovery and fear of cancer recurrence after endoscopic or surgical treatment for T1 CRC.
Methods: In this cross-sectional study, we selected patients with histologically confirmed T1 CRC, who participated in the Dutch Bowel Cancer Screening Programme and received endoscopic or surgical treatment between January 2014 and July 2017. Quality of life was measured using the EORTC QLQ-C30 and the EQ-5D-5L questionnaire. We used the Cancer Worry Scale (CWS) to evaluate patients' fear of cancer recurrence. A question on perceived time to recovery after treatment was also included in the set of questionnaires sent to the patient.
Results: Of all 119 eligible patients, 92.4% responded to the questionnaire (endoscopy group: 55/62, surgery group: 55/57). Compared with the surgery group, perceived time to recovery was on average three months shorter in endoscopically treated patients after adjustment for confounders (19.9 days vs. 111.3 days; p = 0.001). The two treatment groups were comparable with regard to global quality of life, functioning domains as well as symptom severity scores. Moreover, patients in the endoscopy group did not report more fear of cancer recurrence than those in the surgery group (CWS score range 0-40; endoscopy: 7.6 vs. surgery: 9.7; p = 0.140).
Conclusions: From the patient's perspective, endoscopic treatment provides a quicker recovery than surgery, without provoking more fear of cancer recurrence or any deterioration in quality of life. These results contribute to the shared therapeutic decision-making process of clinicians and T1 CRC patients.

Molecular profiling of longitudinally observed small colorectal polyps

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Knowledge of the natural history of colorectal adenomas is limited because these lesions are removed upon detection. The few studies in which small adenomas have been left *in situ* for a limited period of time have shown that most lesions remain stable or even completely vanish. Lesions that have grown in size more often turn out to be advanced adenomas when resected. Specific DNA copy number changes ('cancer associated events' or CAEs) are associated with progression of adenomas to cancer. The aim of this study was to evaluate whether growth of small colorectal polyps left *in situ* is associated with specific molecular features.

In the CT-colonography (CTC) arm of a screening trial, 95 small (6-9mm) colorectal polyps detected on CTC were left *in situ* and remeasured after a surveillance interval of three years. Based on volumetric change, polyps were classified as either grown (>30% growth), stable (<30% growth and <30% regression) or regressed (>30% regression). The surveillance CTC was followed by colonoscopy, during which all lesions were resected and histologically classified. Using DNA isolated from FFPE material, low-coverage whole genome sequencing was performed to determine DNA copy number profiles, as well as target enrichment mutation analysis and CpG island methylator phenotype (CIMP) analysis. In addition, expression of DNA mismatch repair (MMR) genes was determined by immunohistochemistry.

FFPE material could be retrieved from 65 lesions, including 47 (72%) tubular adenomas with low grade dysplasia (LGD), 9 (14%) tubulovillous adenomas with LGD, 1 (2%) sessile serrated lesion without dysplasia and 8 (12%) hyperplastic polyps without dysplasia. Of the lesions 31 (48%) had grown, 27 (41%) remained stable and 7 (11%) regressed. Growth rates were higher in lesions having ≥1 CAEs compared to lesions without CAEs (143% (s.e. 56%) vs 52% (s.e. 14%), respectively, p=0.02). CAEs were absent in lesions that had regressed, as well as in serrated polyps. Mutations occurred in 94% of the lesions, with higher growth rates being associated with lesions having ≥2 mutations compared to lesions with 0-1 mutations (127% (s.e. 34%) versus 27% (s.e. 13%), respectively, p=0.03). Based on the molecular definition of having ≥2 CAEs, 9% of all lesions were classified as being at high risk of progression. These lesions included both grown and stable lesions.

Conclusion: Molecular alterations associated with adenoma to carcinoma progression are more frequent in growing polyps. Even within the polyps that had grown or remained stable, only a small number carried 'bad' features that are associated with risk of progression.

Recurrent and second primary cancers at the one year surveillance colonoscopy following curative colorectal cancer resection

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After curative resection of colorectal cancer (CRC), postoperative surveillance is aimed at reducing disease specific morbidity and mortality by early detection of recurrent or second primary CRC. Controversy exists on the timing of the first postoperative colonoscopy. Aim of this study was to assess the yield of CRC at the one year surveillance colonoscopy after curative CRC resection.
Retrospectively, medical records of patients having undergone a curative surgical resection of a first CRC between June 2013 and April 2016 were checked for eligibility in four hospitals. Patients were included in the database if a complete clearing colonoscopy was performed prior to surgery and when the interval between the pre- and postoperative colonoscopy was 6-20 months. Patients with hereditary CRC or inflammatory bowel disease were excluded. Data were collected on patient demographics, quality of colonoscopy, baseline CRC characteristics, and adenomas and serrated polyps of the preoperative colonoscopy and one year surveillance colonoscopy. A sample size of 571 individuals was needed to assess whether the CRC yield exceeded the 0.5% yield of CRC of primary colonoscopy screening. A multivariable logistic regression was performed to identify risk-factors associated with finding advanced neoplasia (*i.e.* CRC, advanced adenomas or advanced serrated lesions) at follow-up.
Five-hundred seventy-two patients (54.9% male, mean age 66.2 (±9.9) years) were enrolled in the study. After a mean surveillance interval of 13.7 (±2.8) months, 10/572 (1.7%, 95% CI: 0.7-2.8%) were diagnosed with CRC. Of these, five were second primary cancers and five were recurrences at the anastomosis. The second primary CRCs encompassed mostly T3 and T4 tumours (4/5; 80%), of which two qualified for palliative treatment only. In two of these five patients a polyp had been resected at preoperative colonoscopy in the same segment as the second primary cancer. Of the recurrent CRCs, 4/5 (80%) were either T3 or T4, and one of these qualified for palliative treatment only. Resection margins of the baseline CRC were clear in all five patients with recurrent CRC. In 11.4% (95%CI: 8.9-13.8) of all patients included in the study advanced neoplasia was detected at the one-year surveillance colonoscopy. Synchronous baseline advanced neoplasia was a risk-factor for finding advanced neoplasia at follow-up.
Conclusion: The yield of CRC at the one year surveillance colonoscopy after CRC resection was 1.7% (95% CI: 0.7-2.8%). This concerned recurrences as well as second primary tumours, which were often of advanced stage. The high yield justifies the increased colonoscopy demand of one year surveillance interval.

Quantitative Fluorescence Endoscopy: a new and promising tool to predict and evaluate response to neoadjuvant chemoradiotherapy in locally advanced rectal cancer patients

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Introduction: Patients with locally advanced rectal cancer (LARC) are treated with neoadjuvant chemoradiotherapy (nCRT) followed by surgery. To date, there is a growing interest in the non-operative 'watchful waiting' management of patients with a clinically complete response to nCRT, as this is associated with good survival rates and reduced long-term morbidity. However, current restaging techniques are suboptimal to identify patients that might benefit from watchful waiting. Therefore, we investigated if quantitative molecular fluorescence endoscopy (Q-MFE) can improve clinical response assessment after nCRT in LARC patients.

Methods: We evaluated Q-MFE using 4.5mg of the near-infrared (NIR) fluorescent tracer bevacizumab-800CW targeting vascular endothelial growth factor A (VEGF-A) in 30 patients with LARC. Q-MFE procedures were scheduled at two time points during neoadjuvant treatment: 1) at baseline, prior to the start of nCRT; 2) following completion of nCRT. At both time points, fluorescence was visualized using a NIR fluorescence endoscopy platform. Additionally, fluorescence signals were quantified *in vivo* and *ex vivo* using multi-diameter single-fiber reflectance and single-fiber fluorescence (MDFSR/SFF) spectroscopy. Results were correlated with current clinical standards: radiological restaging, white-light endoscopy and pathological staging.

Results: Firstly, Q-MFE procedures performed at baseline showed clear fluorescence in tumor tissue ($Q \cdot \mu fa,x = 3.75 \cdot 10^{-4}$) compared to normal rectal tissue ($1.20 \cdot 10^{-4}$). Higher fluorescence signals were seen in tumor tissue of good responding patients compared to patients with an intermediate and poor response to nCRT ($4.62 \cdot 10^{-4} \pm 0.29 \cdot 10^{-4}$ vs. $3.74 \cdot 10^{-4} \pm 0.44 \cdot 10^{-4}$ and $2.48 \cdot 10^{-4} \pm 0.56 \cdot 10^{-4}$ respectively). Secondly, Q-MFE procedures performed after nCRT showed significantly higher fluorescence in tumor tissue compared to normal rectal tissue and fibrosis, with an area under the curve of 0.925. Q-MFE results showed a promising correlation to pathological staging of the surgical specimen, with for Q-MFE and white-light endoscopy respectively a positive predictive value of 92% vs. 90% and negative predictive value of 100% vs. 20% after nCRT. Overall, Q-MFE correctly changed restaging diagnosis in 4 (16%) of the LARC patients.

Conclusion: VEGF-A targeted Q-MFE showed to be a promising new tool for individualized treatment of LARC patients, by predicting tumor response to nCRT already at baseline and recognizing a clinical complete response after nCRT. These results might lead to a paradigm shift in the management of patients with locally advanced rectal cancer.

Patterns of recurrence in the CRITICS gastric cancer trial

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The aim of this study is to describe patterns of recurrence in patients with resectable gastric cancer treated with preoperative chemotherapy, surgery, and postoperative chemotherapy or chemoradiotherapy in the international multicenter randomized phase III CRITICS trial.
Event-free survival and patterns of recurrence were determined for 788 patients with adenocarcinoma of the stomach who were randomized to perioperative chemotherapy (CSC), or preoperative chemotherapy, surgery and postoperative chemoradiotherapy (CSCRT). Event-free survival was defined as time from randomization until progressive/recurrent disease (disease progression before surgery, irresectable disease at surgery, or tumor recurrence after potentially curative resection) or death from any cause. Sites of progressive/recurrent disease were classified as locoregional only and locoregional in combination with another site. The log-rank test was used to compare event-free survival between the two study arms. Time to first site-specific event accounted for competing risks and was summarized as cumulative incidences.
Of the 788 patients (393 in the CSC and 395 in the CSCRT arm) included between 2007 and 2015, 636 (81%) patients (310 in the CSC and 326 in the CSCRT arm) underwent surgery with curative intent, and 478 (61%) patients (233 in the CSC and 245 in the CSCRT arm) started postoperative treatment. Median follow-up was 6.1 years at the time of analysis and 488 patients experienced an event (240 patients in the CSC arm and 248 patients in the CSCRT arm). Event-free survival rates at 2 and 5 years were 52% vs. 51% and 39% vs. 39% (CSC arms vs. CSCRT arm; stratified log-rank p = 0.94). The 2-year and 5-year cumulative incidences of progressive/recurrent disease were comparable between CSC and CSCRT. Locoregional recurrence was detected within 2 years in 16% of patients (7% locoregional only + 9% in combination with another site) in the CSC arm vs. 16% of patients (5% locoregional only + 11% in combination with another site) in the CSCRT arm. Of the 245 patients who underwent surgery with curative intent and started postoperative chemoradiotherapy, the 2-year and 5-year cumulative incidences for locoregional recurrence were 12% (4% locoregional only + 8% in combination with another site) and 15% (6% locoregional only + 9% in combination with another site).
Conclusion: Cumulative incidences of locoregional progressive/recurrent disease were comparable between postoperative chemotherapy and postoperative chemoradiotherapy.

Factors Associated With Pathological Complete Response After Neoadjuvant Chemoradiotherapy In Patients With Oesophageal Cancer: Results From A Nationwide Study

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Background: Over the last decade neoadjuvant chemoradiotherapy (nCRT), preferably the CROSS regimen, has become standard of care for resectable oesophageal cancer in The Netherlands. About 20% to 50% of the patients achieve a pathological complete response (pCR) after nCRT. A pCR is associated with improved outcome and the role of surgery is questioned in these patients. The aim of this population-based cohort study was to investigate factors associated with pCR after nCRT and surgery.
Methods: Oesophageal cancer patients treated with nCRT followed by oesophagectomy in the period 2009-2015 were identified from the nationwide Netherlands Cancer Registry. Patients with unknown tumour response were excluded. Pathological tumour response was categorized as pCR (ypT0N0) and non-pCR (ypT0N+, ypT1-4N0 and ypT1-4N+). The 3-year survival rates were compared with log-rank analysis. Univariable and multivariable logistic regression models were used to investigate the association between clinicopathological variables and pCR. The effect of chemotherapy schedule and radiotherapy dose on pCR were analysed in a subgroup of patients from whom details on neoadjuvant treatment were available. Multivariable Cox regression on overall survival within the group of patients with pCR was performed.
Results: A total of 3533 patients were included and 841 patients (24%) had a pCR (19% in adenocarcinoma and 41% in squamous cell carcinoma). Patients with pCR had higher 3-year survival rate compared to non-pCR patients (68% vs. 48%, p<0.001). In the non-pCR group, ypT1-4N+ patients had the lowest 3-year survival rate, followed by ypT0N+ and ypT1-4N0 (respectively 30%, 52% and 60%, p<0.001). In multivariable analysis age above 70 years (OR 1.2, 95% CI 1.0-1.5), squamous cell histology (OR 3.0, 95% CI 2.6-3.6), cT1-2 (OR 1.2, 95% CI 1.0-1.5), cN+ (OR 0.74, 95% CI 0.6-0.9) and cNx (OR 0.3, 95% CI 0.1-0.7) were associated with higher or lower chance of pCR. In subgroup analysis (N=668), completion of the CROSS chemotherapy cycles (complete vs. incomplete, p=0.86) and radiotherapy dose (41.4 Gy vs. >41.4 Gy, p=0.22) were not associated with pCR. Factors inversely associated with overall survival in patients who achieved pCR were: age above 70 years (HR 1.4, 95% CI 1.0-1.7) and less than 10 dissected lymph nodes (HR 1.4, 95% CI 1.1-1.9).
Conclusion: Pathological tumour response is not only determined by treatment-related (e.g. number of dissected lymph nodes) factors, but also by patient-related (e.g. age) and tumour-related (e.g. histology and clinical stage) factors. Completing recommended chemotherapy and/or radiotherapy schedules was not related to pCR in our series.

Rapid diagnosis of bloodstream infections in patients on home parenteral nutrition

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Background: Home parenteral nutrition (HPN) patients have an increased risk of catheter-related bloodstream infections. Early identification of causative microorganism(s) is critical to optimize patient care and antimicrobial use. The droplet digital polymerase chain reaction (ddPCR) is a novel culture-independent molecular technique to rapidly identify pathogens in whole blood. The aim of this study was to measure the diagnostic accuracy of the ddPCR in the HPN-setting in comparison with the current gold standard blood cultures.
Methods: We analyzed a set of historically collected frozen blood samples from adult HPN patients with a suspected bloodstream infection, and compared these with blood cultures drawn on the same day. In a relative short procedure (±4 hours), whole blood samples with possible DNA from microorganisms were isolated and analyzed with ddPCR. The analyses were independently performed by two research analysts, without knowledge of the blood culture results. Study outcomes included sensitivity, specificity, the positive– and negative predictive value, and the positive– and negative likelihood ratio of the ddPCR.
Results: In total, 40 blood samples were analyzed (Table 1). The sensitivity was 80% (95%CI 44–97) and the specificity 83% (95%CI 65–94). The positive– and negative predictive value were 62% (95%CI 40–79) and 93% (95%CI 78–98), respectively. The positive– and negative likelihood ratio were 4.8 (95%CI 2.0–11.3) and 0.24 (95%CI 0.07–0.84), respectively.
Conclusions: ddPCR has an acceptable sensitivity and specificity for identifying pathogens from whole blood. At this moment, ddPCR seems to work especially well in predicting true negative results. A larger prospective study will be conducted to confirm these results.

No evidence for increased risk for candidaemia in the presence of polymorphisms in the CD58, LCE4A-Clorf68 and TAGAP loci in home parenteral nutrition patients

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Background: Home parenteral nutrition (HPN) patients have an increased risk of catheter-related bloodstream infections, including candidaemia. In a large hospital cohort, three single-nucleotide polymorphisms (SNPs) in CD58, LCE4A-Clorf68 and TAGAP loci have recently been associated with an increased risk for candidaemia.[1] We hypothesized that HPN patients with one or more SNPs have an increased risk for candidaemia.
Methods: We analyzed blood samples of adult HPN patients who started HPN between 1976 and 2017 at our referral center for intestinal failure (IF). Patient characteristics were retrospectively collected, such as sex, age at start HPN, pathological mechanism of intestinal failure, diabetes, and the time on HPN. A Poisson regression analysis was performed to correct for confounders. Primary outcome was the risk for candidaemia of patients with and without a SNP in CD58, LCE4A-Clorf68 or TAGAP loci.
Results: In total, 342 patients were included in the analysis. The median follow-up time was 3.6 years (IQR 1.5–7.2). In 41 (12%) patients, at least one episode of candidaemia (range 1-6) occurred. When comparing candidaemia–positive and –negative patients, 0 (0%) and 7 (2.3%) had a SNP in the CD58 locus, 1 (2.4%) and 7 (2.3%) in the LCE4A-Clorf68 locus, and 1 (2.4%) and 4 (1.3%) in the TAGAP locus, respectively. There was no increased risk for candidaemia for any of these three SNPs (rate ratio, 0.65; 95%CI, 0.08–5.51; P=0.70).
Conclusions: In this study, known SNPs in CD58, LCE4A-Clorf68 or TAGAP loci were not associated with an increased risk for candidaemia in HPN patients. An explanation for these results may be that having a venous access device itself is a more predominant risk-factor than a genetic predisposition for candidaemia.