

DE LEESTAFEL

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Een Maandelijks Selectie van
Wetenschappelijk GE-nieuws

In deze editie:

- Coloproctologie
- Upper GI
- HPB
- Leverchirurgie
- Bariatrische chirurgie
- Overig

Voor u geselecteerd door
Okker Bijlstra en Meaghan Polack



COLOPROCTOLOGIE

Laxeer en gij zult herstellen

Impact of STIMULant and osmotic LAXatives (STIMULAX trial) on gastrointestinal recovery after colorectal surgery: randomized clinical trial

N.N. Dudi-Venkata, H.M. Kroon, S. Bedrikovetski, M. Lewis, M.J. Lawrence, R.A. Hunter, J.W. Moore, M.L. Thomas, T. Sammour. *British Journal of Surgery*, Volume 108, Issue 7, July 2021, Pages 797–803

PubMed ID: 34498680

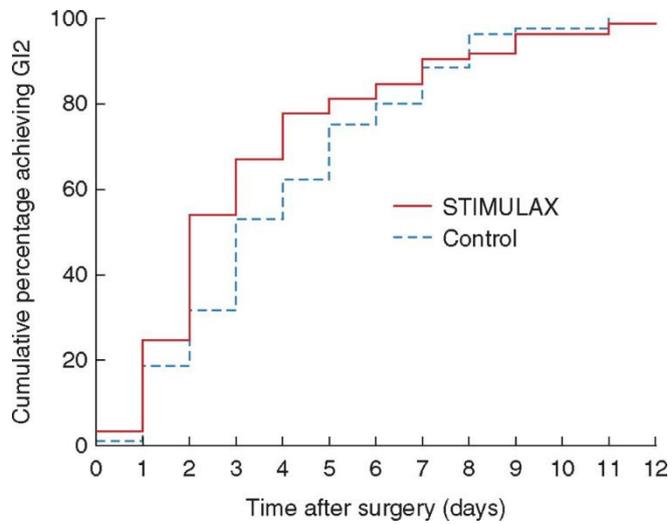
Background: Recovery of gastrointestinal (GI) function is often delayed after colorectal surgery. Enhanced recovery protocols (ERPs) recommend routine laxative use, but evidence of benefit is unclear. This study aimed to investigate whether the addition of multimodal laxatives to an ERP improves return of GI function in patients undergoing colorectal surgery.

Methods: This was a single-centre, parallel, open-label RCT. All adult patients undergoing elective colorectal resection or having stoma formation or reversal at the Royal Adelaide Hospital between August 2018 and May 2020 were recruited into the study. The STIMULAX group received oral Coloxyl® with senna and macrogol, with a sodium phosphate enema in addition for right-sided operations. The control group received standard ERP postoperative care. The primary outcome was GI-2, a validated composite measure defined as the interval from surgery until first passage of stool and tolerance of solid intake for 24 h in the absence of vomiting. Secondary outcomes were the incidence of prolonged postoperative ileus (POI), duration of hospital stay, and postoperative complications. The analysis was performed on an intention-to-treat basis.

Results: Of a total of 170 participants, 85 were randomized to each group. Median GI-2 was 1 day shorter in the STIMULAX compared with the control group (median 2 (i.q.r. 1.5–4) versus 3 (2–5.5) days; 95 per cent c.i. –1 to 0 days; $P = 0.029$). The incidence of prolonged POI was lower in the STIMULAX group (22 versus 38 per cent; relative risk reduction 42 per cent; $P = 0.030$). There was no difference in duration of hospital day or 30-day postoperative complications (including anastomotic leak) between the STIMULAX and control groups.

Conclusion: Routine postoperative use of multimodal laxatives after elective colorectal surgery results in earlier recovery of gastrointestinal function and reduces the incidence of prolonged POI.





Figuur 1. Kaplan–Meier curves for time to achieve GI-2

GI-2, validated composite measure defined as the interval from surgery until first passage of stool and tolerance of solid intake for 24 h in the absence of vomiting. $P = 0.029$ (log rank test).



Transanaal voor vergelijkbare controle locoregionaal

Local Recurrence After Transanal Total Mesorectal Excision for Rectal Cancer: A Multicenter Cohort Study

Roodbeen, Sapho Xenia; Spinelli, Antonino; Bemelman, Willem A.; Di Candido, Francesca; Cardepont, Maylis; Denost, Quentin; D'Hoore, Andre; Houben, Bert; Knol, Joep J.; Martín-Pérez, Beatriz; Rullier, Eric; Sands, Dana; Setton, Ilana; Van de Steen, Katrien; Tanis, Pieter J.; Wexner, Steven D.; Hompes, Roel; Wolthuis, Albert M. *Annals of Surgery*: August 2021 - Volume 274 - Issue 2 - p 359-366

PubMed ID: 31972648

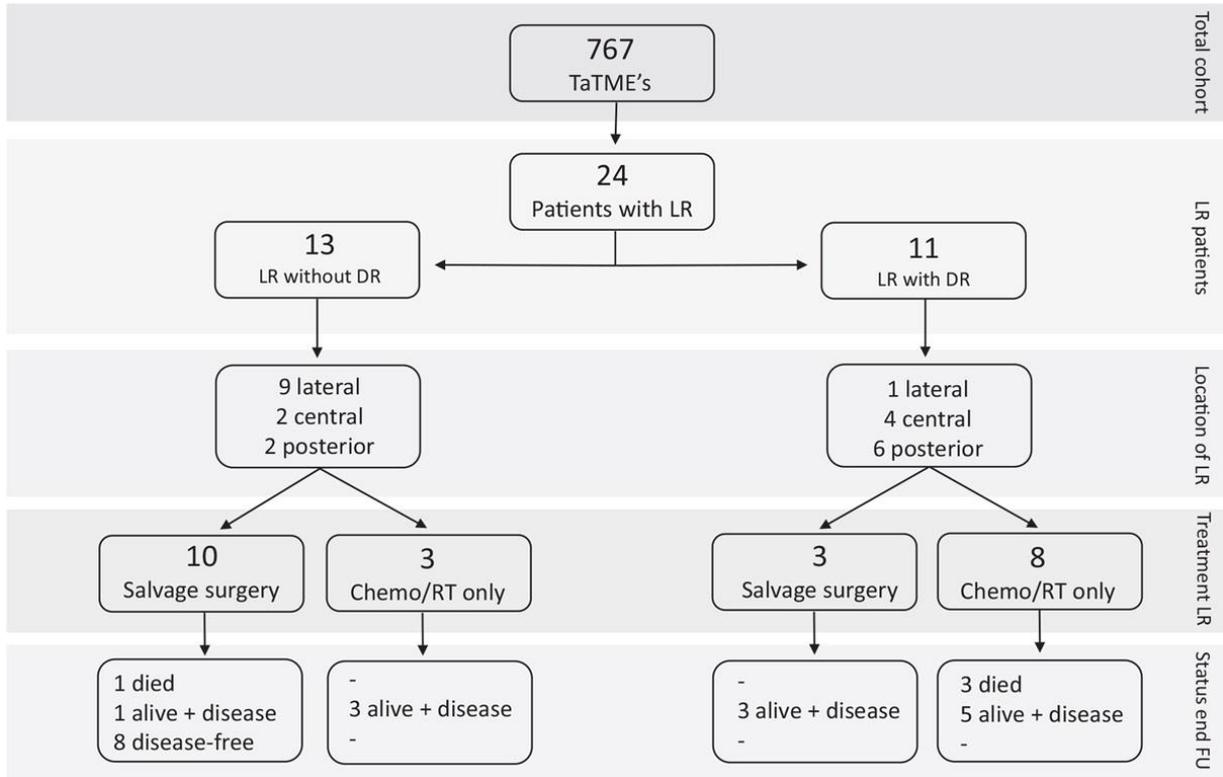
Objective: This study aimed to determine local recurrence (LR) rate and pattern after transanal total mesorectal excision (TaTME) for rectal cancer. Background TaTME for mid- and low rectal cancer has known a rapid and worldwide adoption. Recently, concerns have been raised on the oncological safety in light of reported high LR rates with a multifocal pattern.

Methods: This was a multicenter observational cohort study in 6 tertiary referral centers. All consecutive TaTME cases for primary rectal adenocarcinoma from the first TaTME case in every center until December 2018 were included for analysis. Patients with benign tumors, malignancies other than adenocarcinoma and recurrent rectal cancer, as well as exenterative procedures, were excluded. The primary endpoint was 2- 32 year LR rate. Secondary endpoints included patterns and treatment of LR and histopathological characteristics of the primary surgery.

Results: A total of 767 patients were identified and eligible for analysis. Resection margins were involved in 8% and optimal pathological outcome (clear margins, (nearly) complete specimen, no perforation) was achieved in 86% of patients. After a median follow-up of 25.5 months, 24 patients developed LR, with an actuarial cumulative 2-year LR rate of 3% (95% CI 2–5). In none of the patients, a multifocal pattern of LR was observed. Thirteen patients had isolated LR (without systemic disease) and 10/13 could be managed by salvage surgery of whom 8 were disease-free at the end of follow-up.

Conclusions and Relevance: This study shows good loco regional control after TaTME in selected cases from tertiary referral centers and does not indicate an inherent oncological risk of the surgical technique.





Figuur 2. Flow diagram of treatment and outcome of local recurrence patients.



UPPER GI

Klop op de borst voor de anastomose in lage oesofagusectomieën

Intrathoracic vs Cervical Anastomosis After Totally or Hybrid Minimally Invasive Esophagectomy for Esophageal Cancer: A Randomized Clinical Trial

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PubMed ID: 33978698

Background: Transthoracic minimally invasive esophagectomy (MIE) is increasingly performed as part of curative multimodality treatment. There appears to be no robust evidence on the preferred location of the anastomosis after transthoracic MIE.

Objective: To compare an intrathoracic with a cervical anastomosis in a randomized clinical trial.

Design, Setting, and Participants: This open, multicenter randomized clinical superiority trial was performed at 9 Dutch high-volume hospitals. Patients with midesophageal to distal esophageal or gastroesophageal junction cancer planned for curative resection were included. Data collection occurred from April 2016 through February 2020.

Intervention: Patients were randomly assigned (1:1) to transthoracic MIE with intrathoracic or cervical anastomosis.

Main Outcomes and Measures: The primary end point was anastomotic leakage requiring endoscopic, radiologic, or surgical intervention. Secondary outcomes were overall anastomotic leak rate, other postoperative complications, length of stay, mortality, and quality of life.

Results: Two hundred sixty-two patients were randomized, and 245 were eligible for analysis. Anastomotic leakage necessitating reintervention occurred in 15 of 122 patients with intrathoracic anastomosis (12.3%) and in 39 of 123 patients with cervical anastomosis (31.7%; risk difference, -19.4% [95% CI, -29.5% to -9.3%]). Overall anastomotic leak rate was 12.3% in the intrathoracic anastomosis group and 34.1% in the cervical anastomosis group (risk difference, -21.9% [95% CI, -32.1% to -11.6%]). Intensive care unit length of stay, mortality rates, and overall quality of life were comparable between groups, but intrathoracic anastomosis was associated with fewer severe complications (risk difference, -11.3% [-20.4% to -2.2%]), lower incidence of recurrent laryngeal nerve palsy (risk difference, -7.3% [95% CI, -12.1% to -2.5%]), and better quality of life in 3 subdomains (mean differences: dysphagia, -12.2 [95% CI, -19.6 to -4.7]; problems of choking when swallowing, -10.3 [95% CI, -16.4 to 4.2]; trouble with talking, -15.3 [95% CI, -22.9 to -7.7]).

Conclusions and Relevance: In this randomized clinical trial, intrathoracic anastomosis resulted in better outcome for patients treated with transthoracic MIE for midesophageal to distal esophageal or gastroesophageal junction cancer.



Table 3. Detailed Outcomes of Patients With Anastomotic Leakage

Characteristic	Anastomotic leakage, No. (%)	
	After intrathoracic anastomosis (n = 15)	After cervical anastomosis (n = 42)
Anastomotic leakage by Esophagectomy Complications Consensus Group classification, grade		
I	0	3 (7.1)
II	11 (73.3)	35 (83.3)
III	4 (26.7)	4 (9.5)
Anastomotic leakage by Clavien-Dindo classification, grade		
I	0	5 (11.9)
II	0	8 (19.0)
IIIa	9 (60)	15 (35.7)
IIIb	0	4 (9.5)
IVa	4 (26.7)	10 (23.8)
IVb	1 (6.7)	0
V	1 (6.7)	0
Total number of reinterventions, No.		
Radiologic	8	6
Endoscopic	16	41
Reoperation	4	7
Hospital admission		
Hospital length of stay, median (IQR), d	30.5 (19.8)	19.0 (20.0)
Hospital readmission	3 (20.0)	11 (26.2)
Intensive care unit admission		
Length of stay, median (IQR), d	1.0 (5.0)	2.0 (4.8)
Readmission	4 (26.7)	15 (35.7)
Mortality		
In-hospital	1 (6.7)	1 (2.4)
30-d	1 (6.7)	1 (2.4)
90-d	1 (6.7)	2 (4.8)

Abbreviation: IQR, interquartile range.

Figuur 3. Table 3. Detailed Outcomes of Patients with Anastomotic Leakage



Momenteel is omentumsparend niet minderwaardig

Omentum preservation as an oncologically comparable and surgically superior alternative to total omentectomy during radical gastrectomy for T3–T4 gastric cancer

Won Jun Seo, Seohee Choi, Chul Kyu Roh, Minah Cho, Yoo Min Kim, Hyoung-Il Kim, Woo Jin Hyung
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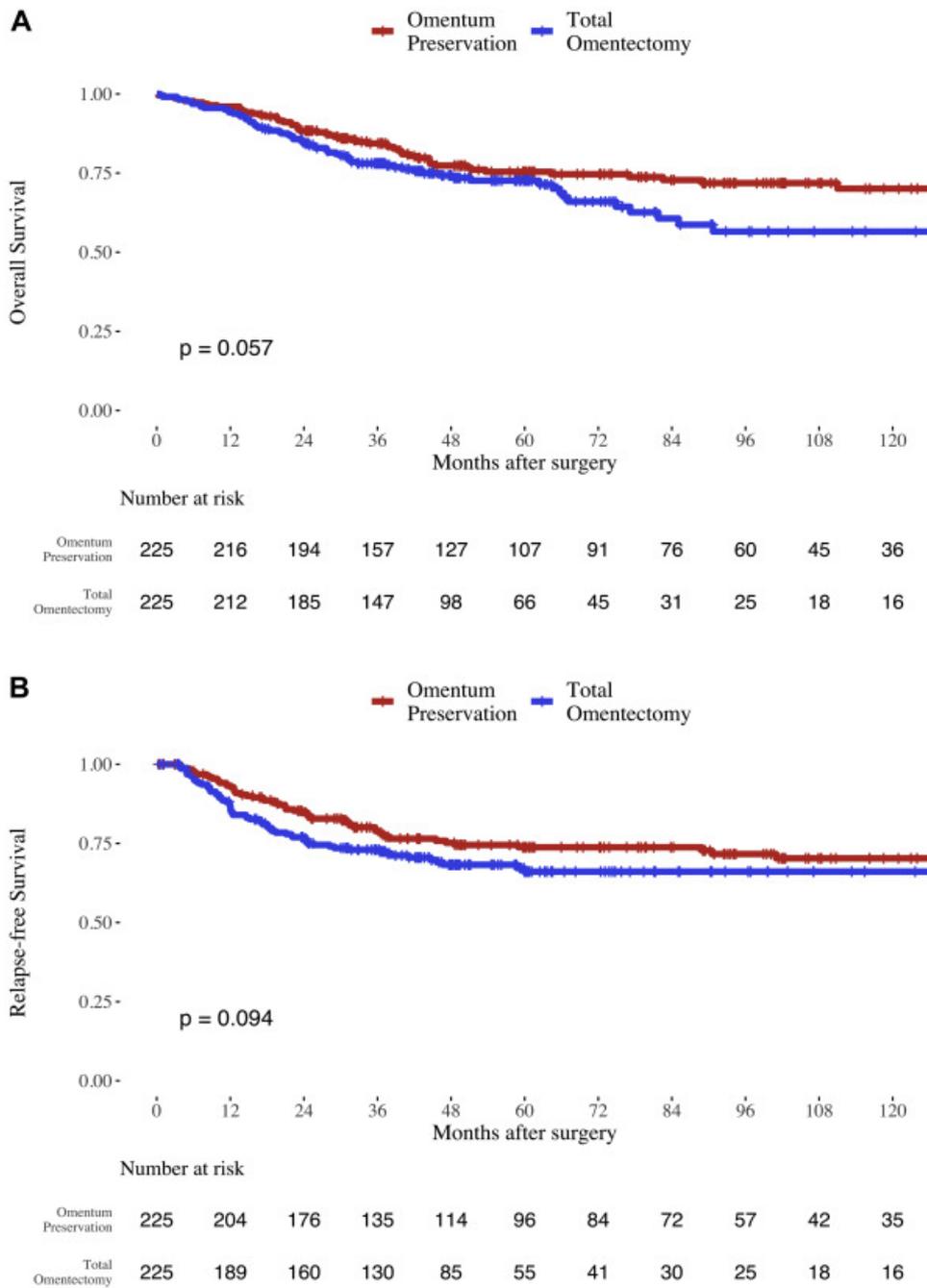
Background and objective: Total omentectomy has conventionally been performed and has been regarded as standard procedure in radical gastrectomy for cancer. However, omentum preservation is the preferred procedure during minimally invasive surgery, without sufficient evidence of oncological safety, especially for T3–T4 gastric cancer.

Method: A total of 3,510 patients who underwent radical gastrectomy for T3–T4 gastric cancer between January 2003 and December 2015 were reviewed, retrospectively. After propensity score matching, 225 patients in the omentum preservation group were compared with 225 patients in the total omentectomy group. The primary outcome was 5-year overall survival.

Results: The omentum preservation group showed significantly shorter operation time ($P = .001$) and less blood loss ($P = .004$) than the total omentectomy group. Shorter operation time was also observed with both open and minimally invasive approaches ($P < .001$ and $P = .007$, respectively). The 5-year overall survival rates were 75.4% for the omentum preservation group and 72.6% for the total omentectomy group (log-rank $P = .06$; hazard ratio 0.7 [95% confidence interval, 0.48–1.01]). The 5-year relapse-free survival was higher in the omentum preservation group (73.8%) than in the total omentectomy group (66.1%), without statistical significance (log-rank $P = .09$; hazard ratio 0.74 [95% confidence interval, 0.52–1.06]).

Conclusion: Regardless of the surgical approach, omentum preservation provided comparable oncologic outcomes with better surgical outcomes, suggesting that this could be an acceptable alternative to total omentectomy for T3–T4 gastric cancer. These findings warrant further investigation in randomized clinical trials.





Figuur 4. Kaplan-Meier estimates of overall survival probability of all patients: (A) overall survival and (B) relapse-free survival between omentum preservation and total omentectomy procedures.



HPB

Liever in twee etappes dan helemaal niet

Revision of Pancreatic Neck Margins Based on Intraoperative Frozen Section Analysis Is Associated With Improved Survival in Patients Undergoing Pancreatectomy for Ductal Adenocarcinoma

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Annals of Surgery: August 2021 - Volume 274 - Issue 2 - p e134-e142

PubMed ID: 31851002

Objective: To test the hypothesis that complete, tumor-free resection at the pancreatic neck, achieved either en-bloc or non-en-bloc (ie, revision based on intraoperative frozen section [FS] analysis), is associated with improved survival as compared with incomplete resection (IR) in pancreatic ductal adenocarcinoma.

Summary Background Data: Given the likely systemic nature of pancreatic ductal adenocarcinoma, the oncologic benefit of achieving a histologically complete local resection, particularly through revision of a positive intraoperative FS at the pancreatic neck, remains controversial.

Methods: Clinicopathologic and treatment data were reviewed for 986 consecutive patients with ductal adenocarcinoma at the head, neck, or uncinate process of the pancreas who underwent open pancreatectomy as well as intraoperative FS analysis between 1998 and 2012 at Massachusetts General Hospital and between 1998 and 2013 at the University of Verona. Overall survival (OS) and perioperative morbidity and mortality were compared across 3 groups: complete resection achieved en-bloc (CR-EB), complete resection achieved non-en-bloc (CR-NEB), and IR.

Results: The CR-EB cohort comprised 749 (76%) patients, CR-NEB 159 patients (16%), and IR 78 patients (8%). Other than a higher incidence of vascular resection among CR-NEB and IR patients, no demographic, pathologic (eg, tumor grade, lymph node positivity, superior mesenteric artery involvement), or treatment factors (eg, neoadjuvant and adjuvant therapy use) differed between the groups. Median OS was significantly higher in patients with CR-EB (28 mo, $P = 0.01$) and CR-NEB resections (24 mo, $P = 0.02$) as compared with patients with IR resections (19 mo). After adjusting for clinicopathologic and treatment characteristics, CR-EB and CR-NEB margin status were found to be independent predictors of improved OS (relative to IR, CR-EB hazard ratio [HR] 0.65, 95% confidence interval [CI] 0.49–0.86; CR-NEB HR 0.69, 95% CI 0.50–0.96). There were no intergroup differences in perioperative morbidity and mortality, including rates of pancreatic fistula.

Conclusions: For patients with ductal adenocarcinoma at the head, neck, or uncinate process of the pancreas undergoing pancreatectomy, complete tumor extirpation via either en-bloc or non-en-bloc complete resection based on FS analysis is associated with improved OS, without an associated increased perioperative morbidity or mortality.



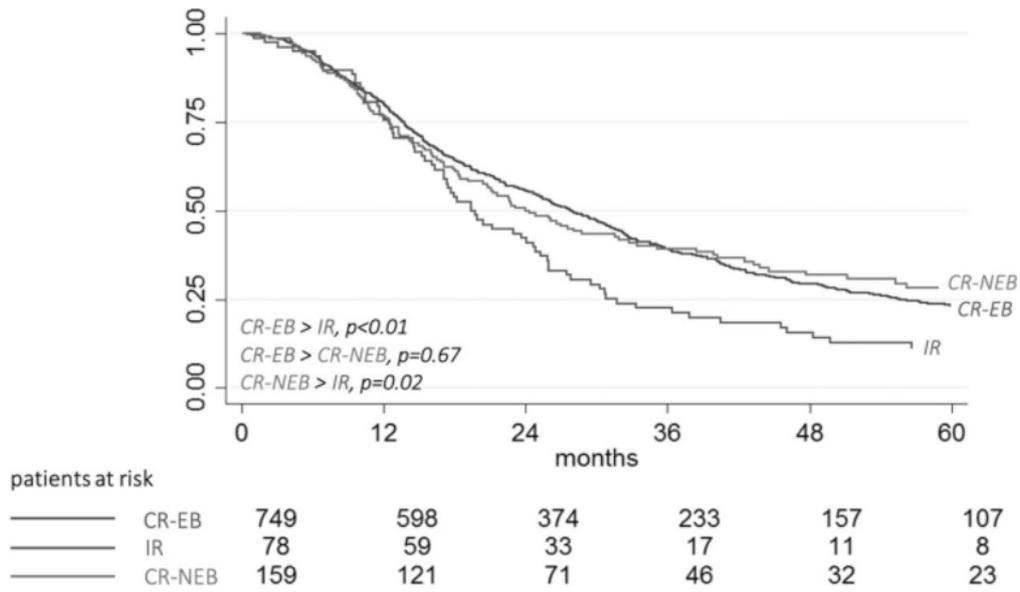


Figure 2. Overall survival of patients with ductal adenocarcinoma at the head, neck, or uncinate process of the pancreas who underwent pancreatectomy, stratified by pancreatic neck margin status. Cohorts were defined as follows: CR-EB Neck—en-bloc complete resection; CR-NEB Neck—non-en-bloc complete resection; IR Neck—incomplete resection.



Nederland de slechtste van de klas, maar relatief goed in hoog-volume centra

The use and clinical outcome of total pancreatectomy in the United States, Germany, the Netherlands, and Sweden

Anouk E.J. Latenstein, Tara M. Mackay, Joal D. Beane, Olivier R. Busch, Susan van Dieren, Elizabeth M. Gleeson, Bas Groot Koerkamp, Hjalmar C. van Santvoort, Ulrich F. Wellner, Caroline Williamsson, Bobby Tingstedt, Tobias Keck, Henry A. Pitt, Marc G. Besselink
Surgery: August 2021 – Volume 170 – Issue 2 – p 563-570
PubMed ID: 33741182

Background and objective: Total pancreatectomy has high morbidity and mortality and differences among countries are currently unknown. This study compared the use and postoperative outcomes of total pancreatectomy among 4 Western countries.

Methods: Patients who underwent one-stage total pancreatectomy were included from registries in the United States, Germany, the Netherlands, and Sweden (2014–2018). Use of total pancreatectomy was assessed by calculating the ratio total pancreatectomy to pancreatoduodenectomy. Primary outcomes were major morbidity (Clavien Dindo ≥ 3) and in-hospital mortality. Predictors for the primary outcomes were assessed in multivariable logistic regression analyses. Sensitivity analysis assessed the impact of volume (low-volume <40 or high-volume ≥ 40 pancreatoduodenectomies annually; data available for the Netherlands and Germany).

Results: In total, 1,579 patients underwent one-stage total pancreatectomy. The relative use of total pancreatectomy to pancreatoduodenectomy varied up to fivefold (United States 0.03, Germany 0.15, the Netherlands 0.03, and Sweden 0.15; $P < .001$). Both the indication and several baseline characteristics differed significantly among countries. Major morbidity occurred in 423 patients (26.8%) and differed (22.3%, 34.9%, 38.3%, and 15.9%, respectively; $P < .001$). In-hospital mortality occurred in 85 patients (5.4%) and also differed (1.8%, 10.2%, 10.8%, 1.9%, respectively; $P < .001$). Country, age ≥ 75 , and vascular resection were predictors for in-hospital mortality. In-hospital mortality was lower in high-volume centers in the Netherlands (4.9% vs 23.1%; $P = .002$), but not in Germany (9.8% vs 10.6%; $P = .733$).

Conclusion: Considerable differences in the use of total pancreatectomy, patient characteristics, and postoperative outcome were noted among 4 Western countries with better outcomes in the United States and Sweden. These large, yet unexplained, differences require further research to ultimately improve patient outcome.



LEVERCHIRURGIE

Een ‘draconische’ maatregel leidt tot betere hypertrofie

Preoperative portal vein or portal and hepatic vein embolization: DRAGON collaborative group analysis

J.Heil, R. Korenblik, F. Heid, W.O. Bechstein, M. Bemelmans, C. Binkert, B. Björnsson, S. Breitenstein, O. Detry, A. Dili, R.F. Dondelinger, L. Gerard, T. Giménez-Maurel, B. Guiu, D. Heise, M. Hertl, J.A. Kalil, J.J. Klein, A. Lakoma, U.P. Neumann, B. Olij, S.G. Pappas, P. Sandström, A. Schnitzbauer, A. Serrablo, J. Tasse, C. Van der Leij, P. Metrakos, R. Van Dam, E. Schadde
British Journal of Surgery, Volume 108, Issue 7, July 2021, Pages 834–842
PubMed ID: 33661306

Background: The extent of liver resection for tumours is limited by the expected functional reserve of the future liver remnant (FRL), so hypertrophy may be induced by portal vein embolization (PVE), taking 6 weeks or longer for growth. This study assessed the hypothesis that simultaneous embolization of portal and hepatic veins (PVE/HVE) accelerates hypertrophy and improves resectability.

Methods: All centres of the international DRAGON trials study collaborative were asked to provide data on patients who had PVE/HVE or PVE on 2016–2019 (more than 5 PVE/HVE procedures was a requirement). Liver volumetry was performed using OsiriX MD software. Multivariable analysis was performed for the endpoints of resectability rate, FLR hypertrophy and major complications using receiver operating characteristic (ROC) statistics, regression, and Kaplan–Meier analysis.

Results: In total, 39 patients had undergone PVE/HVE and 160 had PVE alone. The PVE/HVE group had better hypertrophy than the PVE group (59 versus 48 per cent respectively; $P = 0.020$) and resectability (90 versus 68 per cent; $P = 0.007$). Major complications (26 versus 34 per cent; $P = 0.550$) and 90-day mortality (3 versus 16 per cent respectively, $P = 0.065$) were comparable. Multivariable analysis confirmed that these effects were independent of confounders.

Conclusion: PVE/HVE achieved better FLR hypertrophy and resectability than PVE in this collaborative experience.



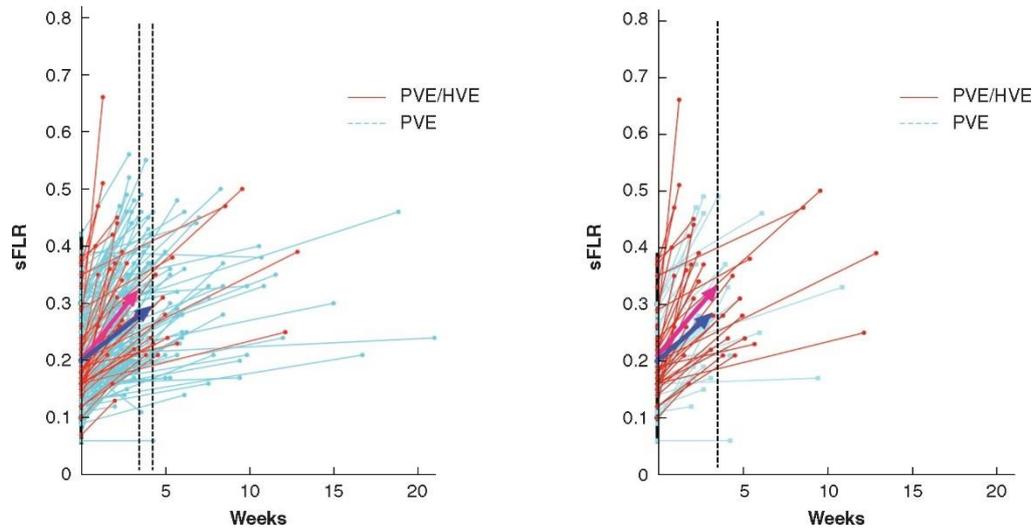


Fig. 2 Kinetic growth rate

Volume increase of standardized future liver remnant (sFLR) simultaneous portal and hepatic vein embolization (PVE/HVE) versus portal vein embolization (PVE) for a all patients and b matched subgroups. The coloured arrows show median liver growth for PVE–HVE (red) and PVE (blue).



OVERIG

Overzicht voor ouderen tegen over- of onderbehandeling

All-Cause and Cancer-Specific Death of Older Adults Following Surgery for Cancer

Tyler R. Chesney; Natalie Coburn; Alyson L. Mahar; Laura E. Davis; Victoria Zuk; Haoyu Zhao; Amy T. Hsu; Frances Wright; Barbara Haas; Julie Hallet; for the Recovery After Surgical Therapy for Older Adults Research–Cancer (RESTORE-Cancer) Group *JAMA Surg.* 2021;156(7):e211425. PubMed ID: 33978695

Importance: Cancer care has inherent complexities in older adults, including balancing risks of cancer and noncancer death. A poor understanding of cause-specific outcomes may lead to overtreatment and undertreatment.

Objective: To examine all-cause and cancer-specific death throughout 5 years for older adults after cancer resection.

Design, Setting, and Participants: This population-based cohort study was conducted in Ontario, Canada, using the administrative databases stored at ICES (formerly the Institute for Clinical Evaluative Sciences). All adults 70 years or older who underwent resection for a new diagnosis of cancer between January 1, 2007, and December 31, 2017, were included. Patients were followed up until death or censored at date of last contact of December 31, 2018.

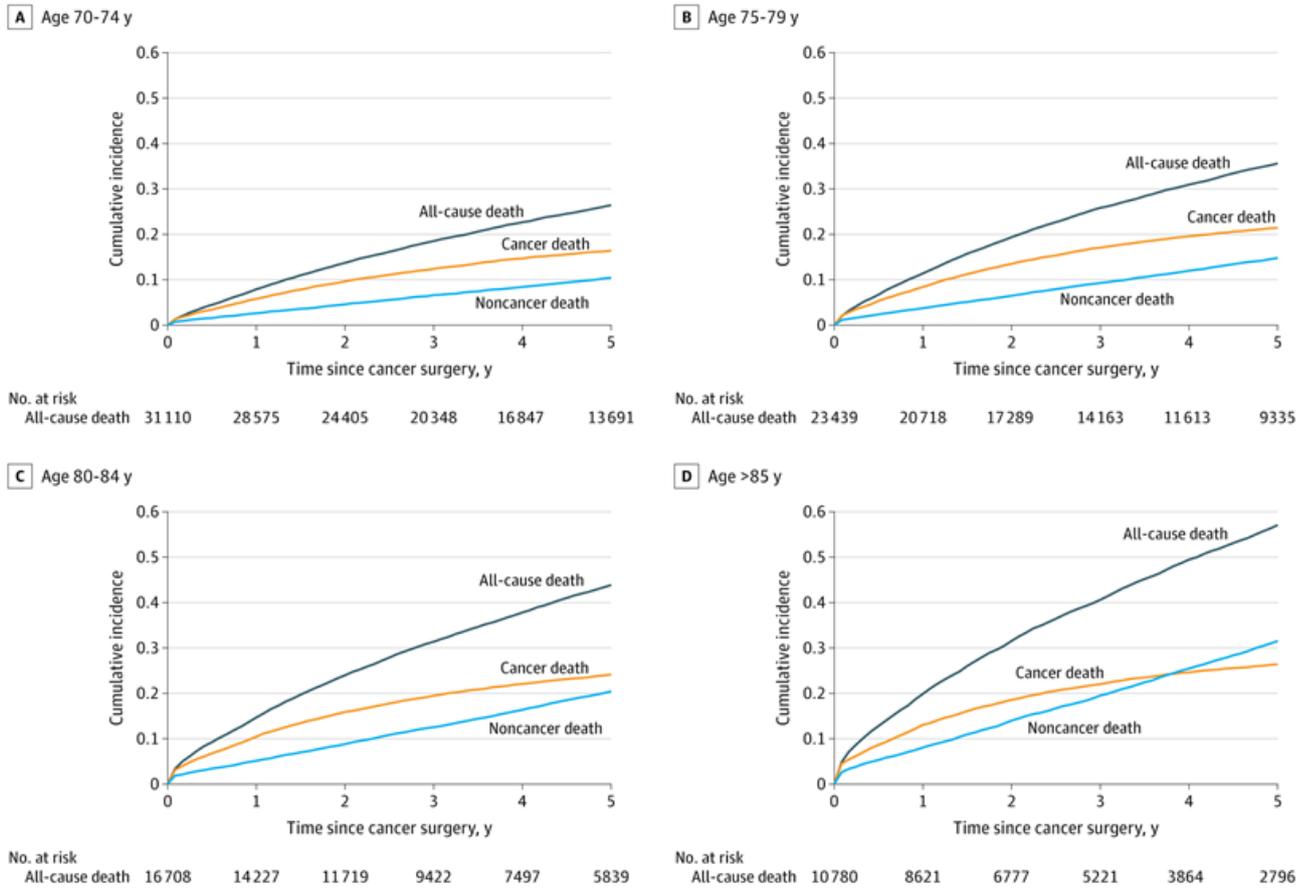
Exposures: Cancer resection.

Main Outcome and Measures: Using a competing risks approach, the cumulative incidence of cancer and noncancer death was estimated and stratified by important prognostic factors. Multivariable subdistribution hazard models were fit to explore prognostic factors.

Results: Of 82 037 older adults who underwent surgery (all older than 70 years; 52 119 [63.5%] female), 16 900 of 34 044 deaths (49.6%) were cancer related at a median (interquartile range) follow-up of 46 (23-80) months. At 5 years, estimated cumulative incidence of cancer death (20.7%; 95% CI, 20.4%-21.0%) exceeded noncancer death (16.5%; 95% CI, 16.2%-16.8%) among all patients. However, noncancer deaths exceeded cancer deaths starting at 3 years after surgery in breast, prostate, and melanoma skin cancers, patients older than 85 years, and those with frailty. Cancer type, advancing age, and frailty were independently associated with cause-specific death.

Conclusions and Relevance: At the population level, the relative burden of cancer deaths exceeds noncancer deaths for older adults selected for surgery. No subgroup had a higher burden of noncancer death early after surgery, even in more vulnerable patients. This cause-specific overall prognosis information should be used for patient counseling, to assess patterns of over- or undertreatment in older adults with cancer at the system level, and to guide targets for system-level improvements to refine selection criteria and perioperative care pathways for older adults with cancer.





Figuur x. Cumulative Incidence of Cancer, Noncancer, and All-Cause Death by Age Group



Op naar een CO₂-neutrale operatiekamer: reduceren en hergebruiken

Strategy for net-zero carbon surgery

C. Rizan, M.F. Bhutta

British Journal of Surgery, Volume 108, Issue 7, July 2021, Pages 737–739

Surgical care generates huge amounts of greenhouse gases, particularly in the operating theatre, owing to single-use medical equipment and choice of anaesthetic gases. To meet net-zero carbon in surgical services we need to support public health measures to reduce surgical disease, optimize surgical patient pathways and associated processes, and focus on operations with the greatest clinical benefit. Surgeons need to challenge the single-use culture, and shift to reusables across all settings, including operating theatres, emergency departments, and outpatients. This will require leadership, collaboration with supporting services and industry, research evidence, and education.

