

DE LEESTAFEL

SEPTEMBER 2020

Een Maandelijks Selectie van Wetenschappelijke GE-nieuws

Coloproctologie

MRI betrouwbaar voor de stadiëring van rectum carcinoom?

MRI cT1-2 rectal cancer staging accuracy: a population - based study. R Detering et al. *BJS*, Sep 2020 – Volume 107 – Issue 10, pages 1372-1382.

Pubmed ID: 32297326.

Background: Adequate MRI-based staging of early rectal cancers is essential for decision-making in an era of organ-conserving treatment approaches. The aim of this population-based study was to determine the accuracy of routine daily MRI staging of early rectal cancer, whether or not combined with endorectal ultrasonography (ERUS).

Methods: Patients with cT1-2 rectal cancer who underwent local excision or total mesorectal excision (TME) without downsizing (chemo)radiotherapy between 1 January 2011 and 31 December 2018 were selected from the Dutch ColoRectal Audit. The accuracy of imaging was expressed as sensitivity, specificity, and positive predictive value (PPV) and negative predictive value.

Results: Of 7382 registered patients with cT1-2 rectal cancer, 5539 were included (5288 MRI alone, 251 MRI and ERUS; 1059 cT1 and 4480 cT2). Among patients with pT1 tumours, 54.7 per cent (792 of 1448) were overstaged by MRI alone, and 31.0 per cent (36 of 116) by MRI and ERUS. Understaging of pT2 disease occurred in 8.2 per cent (197 of 2388) and 27.9 per cent (31 of 111) respectively. MRI alone overstaged pN0 in 17.3 per cent (570 of 3303) and the PPV for assignment of cN0 category was 76.3 per cent (2733 of 3583). Of 834 patients with pT1 N0 disease, potentially suitable for local excision, tumours in 253 patients (30.3 per cent) were staged correctly as cT1 N0, whereas 484 (58.0 per cent) and 97 (11.6 per cent) were overstaged as cT2 N0 and cT1-2 N1 respectively.

	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy (%)
Tumour category, including local excisions					
cT1	69.0 (59.7, 77.2)	72.6 (64.3, 79.9)	68.4 (61.6, 74.5)	73.1 (67.1, 78.5)	70.9 (64.9, 76.5)
cT2	72.1 (62.8, 80.2)	61.4 (52.8, 69.5)	59.7 (53.8, 65.3)	73.5 (66.7, 79.4)	66.1 (59.9, 72.0)
Node category					
cN0	90.6 (83.8, 95.2)	10.7 (2.3, 28.2)	80.9 (78.6, 83.0)	21.4 (7.5, 47.7)	75.2 (67.3, 82.0)
cN1	4.3 (0.1, 22.0)	91.0 (84.4, 95.4)	8.3 (1.2, 40.1)	83.5 (82.0, 84.8)	77.2 (69.6, 83.8)
cN2	20.0 (0.5, 71.6)	99.3 (96.1, 99.9)	50.0 (6.8, 93.2)	97.2 (95.7, 98.2)	96.6 (92.1, 98.9)

Values in parentheses are 95 per cent confidence intervals. PPV, positive predictive value; NPV, negative predictive value.

Conclusion: This Dutch population-based analysis of patients who underwent local excision or TME surgery for cT1-2 rectal cancer based on preoperative MRI staging revealed substantial overstaging, indicating the weaknesses of MRI and missed opportunities for organ preservation strategies.

‘Kwetsbaarheid’, betrouwbaarder dan leeftijd voor het inschatten van het postoperatief beloop

Frailty is a better predictor than age for outcomes in geriatric patients with rectal cancer undergoing proctectomy. SM Miller et al. Surgery: September 2020 – Volume 168 – Issue 3 – p 504-508.

Pubmed ID: 32665144.

Background: Both frailty and older age are risk factors for adverse surgical outcomes. We hypothesized that frailty, regardless of patient age, is a predictor of poor postoperative outcome among patients with rectal cancer undergoing proctectomy.

Methods: Patients with primary rectal cancer undergoing proctectomy between 2012 to 2015 were identified in the database of the National Quality Improvement Program. The simplified, 5-item frailty index

Table I

Prevalence of individual items of the simplified, sFI among patients with rectal cancer patients undergoing proctectomy

Frailty item	Prevalence in patients with rectal cancer
Hypertension medication	44.4% (4,107)
Diabetes mellitus	14.9% (1,379)
Chronic obstructive pulmonary disorder	3.6% (333)
Dependent functional status	1.3% (119)
Congestive heart failure	0.3% (29)

was grouped into 0, 1, 2, and ≥ 3 . Outcomes were morbidity and 30-day mortality.

Results: This study involved 9,252 patients from the National Quality Improvement Program database. Increasingly frail patients had greater morbidity and mortality ($P < .001$). Logistic regression revealed that frailty was a predictor of morbidity (odds ratio = 6.7, $P < .0001$); in contrast, older age was not associated with morbidity when adjusting for frailty (odds ratio = 1.2, $P = .14$). Both older age and frailty were associated with greater mortality, with frailty (odds ratio = 20.8, $P < .0001$) more so than older age (odds ratio = 10.3, $P < .0001$).

Table IV

Covariate-adjusted odds ratios in patients with rectal cancer*

	Morbidity [†]	Mortality
Most vs least frail (sFI scores of ≥ 3 vs 0 [‡])	OR = 6.7 95% CI = (4.5–10.0) $P < .0001$	OR = 20.8 95% CI = (6.2–70.0) $P < .0001$
Oldest vs youngest age (80–89 vs 18–64 y)	Odds ratio = 1.2 95% CI = (1.0–1.5) $P = .14$	Odds ratio = 10.3 95% CI = (4.8–21.9) $P < .0001$

* Covariates included for adjustment: race, smoking, function status (independent versus dependent).

[†] Morbidity defined as occurrence of at least one of the following complications: organ space infection, pneumonia, unplanned intubation, pulmonary embolism, ventilator requirement >48 hours, progressive renal insufficiency, acute renal failure, cerebrovascular accident, cardiac arrest, myocardial infarction, deep venous thrombosis, sepsis, septic shock, and return to operating room.

[‡] Simplified sFI characteristics: history of diabetes mellitus, functional status, history of chronic obstructive pulmonary disease, history of congestive heart failure, and hypertension requiring treatment.

Conclusion: Frailty was more strongly associated with morbidity and mortality than older age in patients undergoing proctectomy. Surgical options can be expanded to older patients with the use of simplified, 5-item frailty index as a decision-making tool.

UPPER GI

Wel of geen tromboseprophylaxe na neoadjuvante chemoradiatie en chirurgie voor oesophagus carcinoom

Thromboembolic and bleeding complications in patients with oesophageal cancer. FI Mulder et al. *BJS*, Sep 2020 – Volume 107 – Issue 10, pages 1324-1333.

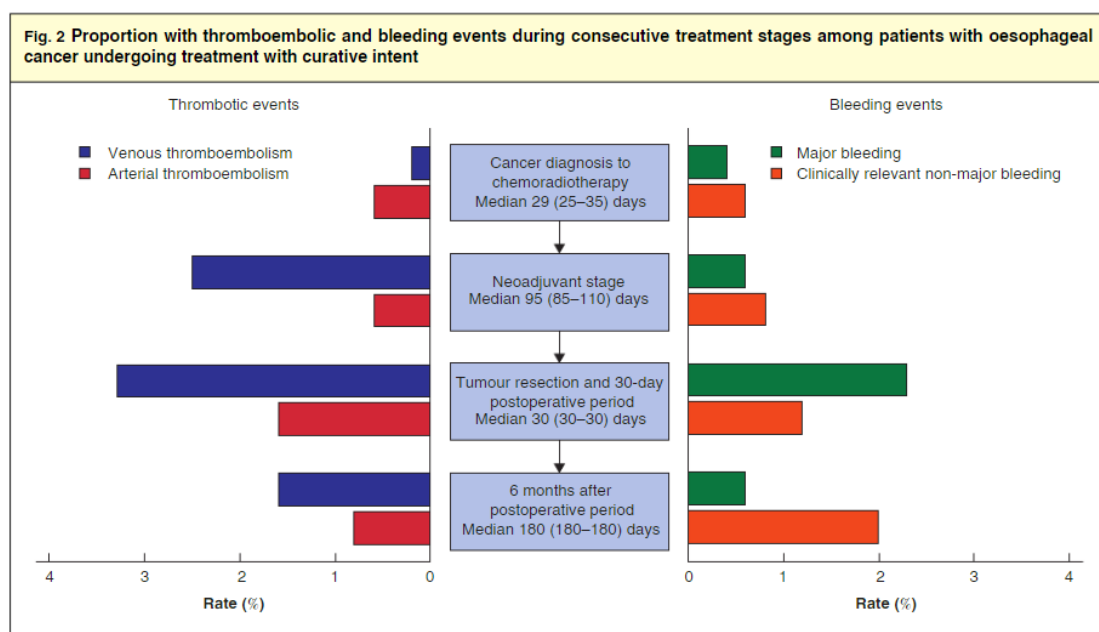
Pubmed ID: 32424862.

Background: In patients who undergo curative treatment for oesophageal cancer, risk estimates of venous thromboembolism (VTE), arterial thromboembolism and bleeding are needed to guide decisions about thromboprophylaxis.

Methods: This was a single-centre, retrospective cohort study of patients with stage I-III oesophageal cancer who received neoadjuvant chemoradiation followed by oesophagectomy. The outcomes VTE, arterial thromboembolism, major bleeding, clinically relevant non-major bleeding and mortality were analysed for four consecutive cancer treatment stages (from diagnosis to neoadjuvant chemoradiotherapy, during neoadjuvant treatment, 30-day postoperative period, and up to 6 months after postoperative period).

Results: Some 511 patients were included. The 2-year survival rate was 67.3 (95 per cent c.i. 63.2 to 71.7) per cent. During the 2-year follow-up, 50 patients (9.8 per cent) developed VTE, 20 (3.9 per cent) arterial thromboembolism, 21 (4.1 per cent) major bleeding and 30 (5.9 per cent) clinically relevant non-major bleeding. The risk of these events was substantial at all treatment stages. Despite 30-day postoperative thromboprophylaxis, 17 patients (3.3 per cent) developed VTE after surgery. Patients with VTE had worse survival (time-varying hazard ratio 1.81, 95 per cent c.i. 1.25 to 2.64). Most bleeding events occurred around the time of medical intervention, and approximately one-half during concomitant use of prophylactic or therapeutic anticoagulation.

Conclusion: Patients with oesophageal cancer undergoing neoadjuvant chemoradiotherapy and surgery are at substantial risk of thromboembolic and bleeding events throughout all stages of treatment. Survival is worse in patients with thromboembolic events during follow-up.



Values in parentheses are interquartile range.

HPB

Links-zijdige portale hypertensie na pancreatoduodenectomie met veneuze resectie

Left-sided portal hypertension after pancreatoduodenectomy with resection of the portal/superior mesenteric vein confluence. Results of a systematic review. N Petrucciani et al. *Surgery*: September 2020 – Volume 168 – Issue 3 – p 434-439.

Pubmed ID: 32600882.

Background: Pancreatoduodenectomy with synchronous resection of the portal vein/superior mesenteric vein confluence may result in the development of left-sided portal hypertension. Left-sided portal hypertension presents with splenomegaly and varices and may cause severe gastrointestinal bleeding. The aim of the study is to review the incidence, treatment, and preventive strategies of left-sided portal hypertension.

Methods: A systematic literature search was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement to identify all studies published up to September 30, 2019 reporting data on patients with left-sided portal hypertension after pancreatoduodenectomy with venous resection.

Table 1
Characteristics of the included studies

First author (ref)	Country, city	Inclusion period	Type of study	n*	n PD-SVL*	n LSPH*	Quality evaluation NOS
Mizuno ¹²	Japan	2005–2014	Retrospective	536	227	84	7
Rosado ¹⁶	US, St Louis	2009–2014	Retrospective	15	15	2	6
Tanaka H ¹⁰	Japan, Nagoya	2011–2015	Retrospective	93	29	8	7
Hattori ¹⁷	Japan, Nagoya	2004–2013	Retrospective	141	81	7	7
Pilgrim ¹⁸	US, Milwaukee	-	Retrospective	3	3	3	6
Ferreira ¹⁹	France, Strasbourg	2002–2010	Retrospective	39	28	NR	7
Sakamoto ²⁰	Japan, Kobe	-	Case report	1	1	1	NA
Ozaki ²¹	Japan, Kanazawa	-	Case report	1	1	1	NA

NA, not assessed; NOS, Newcastle-Ottawa Scale; NR, not reported; US, United States.

* n, number of included patients, n PD-SVL, number of patients undergoing pancreatoduodenectomy with splenic vein ligation; n LSPH, number of patients with left-sided portal hypertension.

Results: Eight articles including 829 patients were retrieved. Left-sided portal hypertension occurred in 7.7% of patients who had splenic vein preservation and 29.4% of those having splenic vein ligation. Fourteen cases of gastrointestinal bleeding owing to left-sided portal hypertension were reported at a mean interval of 28 months from pancreatoduodenectomy. Related mortality at 1 month was 7.1%. Treatment of left-sided portal hypertension consisted of splenectomy in 3 cases (21%) and colectomy in 1 (7%) case, whereas radiologic, endoscopic procedures or conservative treatments were effective in the other cases (71%).

Conclusion: Left-sided portal hypertension represents a potentially severe complication of pancreatoduodenectomy with venous resection occurring at greater incidence when the splenic vein is ligated and not reimplemented. Left-sided portal hypertension-related gastrointestinal bleeding although rare can be managed depending on the situation by endoscopic, radiologic procedures or operative intervention with low related mortality.

Multifactoriële oorzaak infectieuze complicaties na Whipple

Antimicrobial susceptibility of biliary stents do not predict infectious complications after Whipple.

LM Knab et al. *Surgery*: September 2020 – Volume 168 – Issue 3 – p 457-461.

Pubmed ID: 32680749.

Background: Postoperative infectious complications after a pancreaticoduodenectomy remain a significant cause of morbidity. Studies have demonstrated that a preoperative biliary stent increases the risk of postoperative infectious complications. Few studies have investigated the specific preoperative biliary stent bacterial sensitivities to preoperative antibiotics and the effect on infectious complications. The goal of this study was to investigate if the presence of a preoperative biliary stent increases the risk of postoperative infectious complications in patients undergoing a pancreaticoduodenectomy. Additionally, we aimed to investigate biliary stent culture sensitivities to preoperative antibiotics and determine if those sensitivities impacted postoperative infectious complications after a pancreaticoduodenectomy.

Methods: A retrospective chart review of patients who had undergone a pancreaticoduodenectomy at a single institution tertiary care center from 2007 to 2018 was performed. Perioperative variables including microbiology cultures from biliary stents were collected and analyzed.

Results: A total of 244 patients underwent a pancreaticoduodenectomy. A preoperative biliary stent was present in 45 (18%) patients.

Infectious complications occurred in 25% of those patients with a preoperative biliary stent, and 19% of those without ($P = .37$). Of those patients with a stent that was cultured intraoperatively, 92% grew bacteria and 61% of those were resistant to the preoperative antibiotics administered. Of the patients with a

Table IV
Bile duct cultures and sensitivities

	Bacteria cultured		Resistant to preoperative antibiotic	
Bacteria, n (%)				
Enterococcus	23	61%	18	78%
Streptococcus	20	53%	2	10%
Klebsiella	15	39%	2	13%
Candida	9	24%	7	78%
Enterobacter	6	16%	3	50%
Citrobacter	6	16%	2	33%
Bacteroides	4	11%	2	50%
Lactobacillus/lactococcus	4	11%	1	25%
Clostridium	3	8%	0	0%
Pseudomonas	2	5%	1	50%
Staphylococcus	2	5%	0	0%
Actinomyces	1	3%	0	0%

preoperative biliary stent and bacteria resistant to the preoperative antibiotics, 17% developed a postoperative infectious complication, compared with 20% if the bacteria cultured was susceptible to the preoperative antibiotics ($P = .64$).

Conclusion: Infectious complications after pancreaticoduodenectomy are a significant cause of morbidity. Stent bacterial sensitivities to preoperative antibiotics did not reduce the postoperative infectious complications in the preoperative biliary stent group suggesting a multifactorial cause of infections.

LEVERCHIRURGIE

Acute cholecystitis tijdens zwangerschap

Is It Safe to Manage Acute Cholecystitis Nonoperatively During Pregnancy?: A Nationwide Analysis of Morbidity According to Management Strategy. A Rios-diaz et al. *Annals of Surgery*, September 2020 - Volume 272- Issue 3, p449-456.

DOI: 10.1097/SLA.0000000000004210.

Objectives: To compare CCY and nonoperative treatment (no-CCY) for acute cholecystitis in pregnancy.

Summary of Background Data: Current Society of Gastrointestinal and Endoscopic Surgery guidelines recommend CCY over nonoperative management of acute cholecystitis during pregnancy, and the American College of Obstetricians and Gynecologists recommend medically necessary surgery regardless of trimester. This approach has been recently questioned.

Methods: Pregnant women admitted with acute cholecystitis were identified using the Nationwide Readmission Database 2010–2015. Propensity score-adjusted logistic regression models we used to compare CCY and no-CCY. The primary outcome was a composite measure of adverse maternal-fetal outcomes (intrauterine death/stillbirth, poor fetal growth, abortion, preterm delivery, C-section, obstetric bleeding, infection of the amniotic fluid, venous thromboembolism).

Results: There were 6390 pregnant women with acute cholecystitis: 38.2% underwent CCY, of which 5.1% were open. Patients were more likely to be managed operatively in their second trimester (20.7% vs 8.8%; $P < 0.01$). Patients managed with CCY did not differ in age, insurance, income, Charlson Comorbidity Index, diabetes or obesity when compared to no-CCY (all $P > 0.05$), but were less likely to have a previous C-section, gestational diabetes, preeclampsia/eclampsia or be in the third trimester ($P \leq 0.01$). Risk-adjusted analyses showed that no-CCY was associated with significantly increased maternal-fetal complications during the index admission [odds ratio 3.0 (95% confidence interval 2.08–4.34), $P < 0.01$] and 30-day readmissions [odds ratio 1.61 (confidence interval % CI 1.12–2.32), $P < 0.01$].

Conclusions: Contrary to current guidelines, most pregnant women admitted in the US with acute cholecystitis are managed nonoperatively. This is associated with over twice the odds of maternal-fetal complications in addition to increased readmissions.

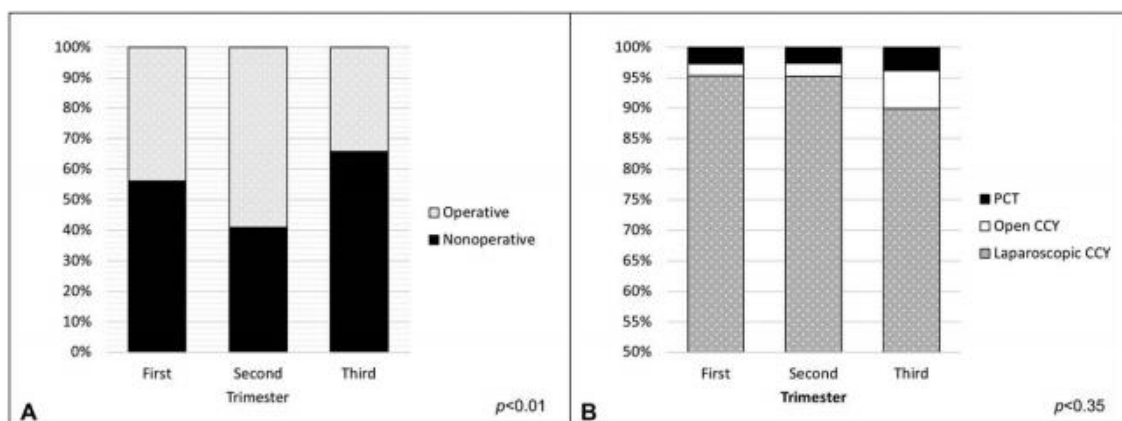


FIGURE 2. A, Management strategy by trimester among pregnant patients admitted with acute cholecystitis. B, Surgical approach by trimester among pregnant patients with cholecystitis managed operatively. CCY indicates cholecystectomy; PCT, percutaneous cholecystostomy tube.

Perioperatieve transfusies of bloedverlies als kwaliteits-indicator van laparoscopische leverchirurgie

Relevance of blood loss as key indicator of the quality of surgical care in laparoscopic liver resection for colorectal liver metastases. A Nassar et al. Surgery: September 2020 – Volume 168 – Issue 3 – p 411-418.

PMID: 32600884.

Background: The development of laparoscopic liver resection has led to the hypothesis that intraoperative blood loss may be a key indicator of surgical care quality. This study assessed short- and long-term results of patients according to three levels of intraoperative blood loss during laparoscopic liver resection for colorectal liver metastasis.

Methods: All patients who underwent laparoscopic liver resection for colorectal liver metastasis between 2000 and 2018 were included. Difficulty of laparoscopic liver resection was defined according to the Institut Mutualiste Montsouris classification. Three levels of the extent of intraoperative blood loss were defined: massive ($\geq 1,000$ mL), substantial (≥ 75 th percentile of intraoperative blood loss within each grade of difficulty), and normal intraoperative blood loss.

Results: During study period, 317 patients underwent laparoscopic liver resection for colorectal liver metastasis. Among them, 213 (67.2%), 80 (25.2%), and 24 (7.6%) patients had normal, substantial, and massive intraoperative blood loss, respectively. Twenty-six patients (8.2%) required transfusion. Massive intraoperative blood loss came from a major hepatic vein in 54% of cases and were managed by laparoscopy in 83% of the cases. Laparoscopic liver resection difficulty grade (odds ratio = 3.15; $P = .053$) and number of colorectal liver metastasis (odds ratio = 1.24; $P = .020$) were independently associated with massive intraoperative blood loss. Risks factors for substantial intraoperative blood loss were bi-lobar colorectal liver metastasis (odds ratio = 3.12; $P = .033$) and sinusoidal obstruction syndrome (odds ratio = 3.27; $P = .004$). The level of intraoperative blood loss was not associated with severe complications nor overall and disease-free survival. Requirement of transfusion was associated with severe complications (odds ratio = 7.27; $P = .002$) and decreased 1-, 3-, and 5-year overall survival (87%, 68%, and 61% vs 95%, 88%, and 79%; $P = .042$).

Conclusion: The extent of intraoperative blood loss did not affect short- and long-term results of laparoscopic liver resection for colorectal liver metastasis. Massive intraoperative blood loss was often incidental and, 83% of the time, manageable by laparoscopy. Rather than intraoperative blood loss, transfusion is a better relevant indicator of laparoscopic liver resection surgical quality.

COVID-19

Patient COVID-19 positief? Geen electieve operaties!

Factors Associated With Surgical Mortality and Complications Among Patients With and Without Coronavirus Disease 2019 (COVID-19) in Italy. F Doglietto et al. *JAMA Surg.* 2020;155(8):691-702.
Pubmed ID: 32530453.

Importance: There are limited data on mortality and complications rates in patients with coronavirus disease 2019 (COVID-19) who undergo surgery.

Objective: To evaluate early surgical outcomes of patients with COVID-19 in different subspecialties.

Design, setting, and participants: This matched cohort study conducted in the general, vascular and thoracic surgery, orthopedic, and neurosurgery units of Spedali Civili Hospital (Brescia, Italy) included patients who underwent surgical treatment from February 23 to April 1, 2020, and had positive test results for COVID-19 either before or within 1 week after surgery. Gynecological and minor surgical procedures were excluded. Patients with COVID-19 were matched with patients without COVID-19 with a 1:2 ratio for sex, age group, American Society of Anesthesiologists score, and comorbidities recorded in the surgical risk calculator of the American College of Surgeons National Surgical Quality Improvement Program. Patients older than 65 years were also matched for the Clinical Frailty Scale score.

Exposures: Patients with positive results for COVID-19 and undergoing surgery vs matched surgical patients without infection. Screening for COVID-19 was performed with reverse transcriptase-polymerase chain reaction assay in nasopharyngeal swabs, chest radiography, and/or computed tomography. Diagnosis of COVID-19 was based on positivity of at least 1 of these investigations.

Main outcomes and measures: The primary end point was early surgical mortality and complications in patients with COVID-19; secondary end points were the modeling of complications to determine the importance of COVID-19 compared with other surgical risk factors.

Results: Of 41 patients (of 333 who underwent operation during the same period) who underwent mainly urgent surgery, 33 (80.5%) had positive results for COVID-19 preoperatively and 8 (19.5%) had positive results within 5 days from surgery. Of the 123 patients of the combined cohorts (78 women [63.4%]; mean [SD] age, 76.6 [14.4] years), 30-day mortality was significantly higher for those with COVID-19 compared with control patients without COVID-19 (odds ratio [OR], 9.5; 95% CI, 1.77-96.53). Complications were also significantly higher (OR, 4.98; 95% CI, 1.81-16.07); pulmonary complications were the most common (OR, 35.62; 95% CI, 9.34-205.55), but thrombotic complications were also significantly associated with COVID-19 (OR, 13.2; 95% CI, 1.48-∞). Different models (cumulative link model and classification tree) identified COVID-19 as the main variable associated with complications.

Conclusions and relevance: In this matched cohort study, surgical mortality and complications were higher in patients with COVID-19 compared with patients without COVID-19. These data suggest that, whenever possible, surgery should be postponed in patients with COVID-19.

Table 2. Descriptive Statistics^a of Preoperative Features and Outcomes of the Study Cohort

Variable	No. (%)			P value	
	Control (n = 82)	COVID-19 (n = 41)	Total (N = 123)		
Thrombotic complications					
No	82 (100.00)	37 (90.24)	119 (96.75)	.004 ^d	
Yes	0 (0.00)	4 (9.76)	4 (3.25)		
Hemorrhagic complications					
No	50 (60.98)	26 (63.41)	76 (61.79)	.79 ^d	
Yes	32 (39.02)	15 (36.59)	47 (38.21)		
Pulmonary complications					
No	79 (96.34)	17 (41.46)	96 (78.05)	<.001 ^d	
Pneumonia	2 (2.44)	18 (43.90)	20 (16.26)		
ARF	1 (1.22)	6 (14.63)	7 (5.69)		
Cardiac complications					
No	81 (98.78)	39 (95.12)	120 (97.56)	.10 ^d	
Atrial fibrillation	1 (1.22)	0 (0.00)	1 (0.81)		
Shock	0 (0.00)	2 (4.88)	2 (1.63)		
Neurological complications					
No. of any missing values	8	2	10	.69 ^d	
No	72 (97.30)	38 (97.44)	110 (97.35)		
Delirium	1 (1.35)	1 (2.56)	2 (1.77)		
TIA	1 (1.35)	0 (0.00)	1 (0.88)		
Local complications					
No	76 (92.68)	38 (92.68)	114 (92.68)	.61 ^d	
Yes	6 (7.32)	3 (7.32)	9 (7.32)		
Clavien Dindo classification					
None	38 (46.34)	6 (14.63)	44 (35.77)	<.001 ^b	
I	3 (3.66)	1 (2.44)	4 (3.25)		
II	33 (40.24)	7 (17.07)	40 (32.52)		
I-II	0 (0.00)	1 (2.44)	1 (0.81)		
II-II	1 (1.22)	9 (21.95)	10 (8.13)		
IIIA	0 (0.00)	2 (4.88)	2 (1.63)		
IIIB	2 (2.44)	0 (0.00)	2 (1.63)		
I-IIIB	1 (1.22)	0 (0.00)	1 (0.81)		
II-IIIB	1 (1.22)	0 (0.00)	1 (0.81)		
IVA	0 (0.00)	2 (4.88)	2 (1.63)		
I-IVA	1 (1.22)	0 (0.00)	1 (0.81)		
II-IVA	0 (0.00)	2 (4.88)	2 (1.63)		
IIIA-IVB	0 (0.00)	2 (4.88)	2 (1.63)		
II-IVA-IVA	0 (0.00)	1 (2.44)	1 (0.81)		
V	2 (2.44)	8 (19.51)	10 (8.13)		
CCI					
Mean (SD)	13.79 (18.21)	40.14 (33.39)	22.57 (27.23)		<.001 ^c
Median (IQR) [range]	14.80 (0.00-20.90) [0.00-100.00]	29.60 (20.90-53.20) [0.00-100.00]	20.90 (0.00-29.60) [0.00-100.00]		
Days in the ICU					
Mean (SD)	0.39 (1.59)	0.90 (2.89)	0.56 (2.11)	.52 ^c	
Median (IQR) [range]	0.00 (0.00-0.00) [0.00-13.00]	0.00 (0.00-0.00) [0.00-14.00]	0.00 (0.00-0.00) [0.00-14.00]		
Days in sub-ICU					
No. of any missing values	40	20	60	.20 ^c	
Mean (SD)	1.36 (2.73)	3.95 (6.55)	2.22 (4.50)		
Median (IQR) [range]	0.00 (0.00-1.50) [0.00-10.00]	0.00 (0.00-5.00) [0.00-20.00]	0.00 (0.00-2.00) [0.00-20.00]		
Days in hospital					
Mean (SD)	13.13 (9.27)	13.34 (7.63)	13.20 (8.73)	.53 ^c	
Median (IQR) [range]	11.50 (7.00-17.75) [1.00-60.00]	12.00 (8.00-15.00) [3.00-45.00]	12.00 (7.50-17.00) [1.00-60.00]		
Death					
No	80 (97.56)	33 (80.49)	113 (91.87)	.001 ^d	
Yes	2 (2.44)	8 (19.51)	10 (8.13)		

Abbreviations: ARF, acute respiratory failure; CCI, comprehensive complication index; COVID-19, coronavirus disease 2019; CRP, C-reactive protein; ICU, intensive care unit; IQR, interquartile range; PLT, platelets; WBC, white blood cell count.

SI conversion factors: To convert CRP to mg/L, multiply by 10; for D-dimer to nmol/L, multiply by 5.476; for fibrinogen to g/L, multiply by 0.01; for PLT to $\times 10^9/L$, multiply by 1; for lymphocytes and WBC to $\times 10^9/L$, multiply by 0.001.

^a Poor respiratory function at admission was more frequent in patients with COVID-19 (χ^2 test: $P < .001$). Moreover, median values of CRP and fibrinogen were significantly higher ($P < .001$). The type of surgery and anesthesia, as

well as operative and anesthesia times, did not differ between the study group and controls. The CCI score (which summarized complications [see the Methods for further details]) was significantly higher in COVID-19 ($P < .001$); in particular, thrombotic and pulmonary complications were associated with patients with COVID-19 (χ^2 test: $P = .004$ and $P = <.001$, respectively). Death rates were also significantly higher ($P = .001$).

^b Trend test.

^c Wilcoxon test.

^d χ^2 Goodness of fit test.

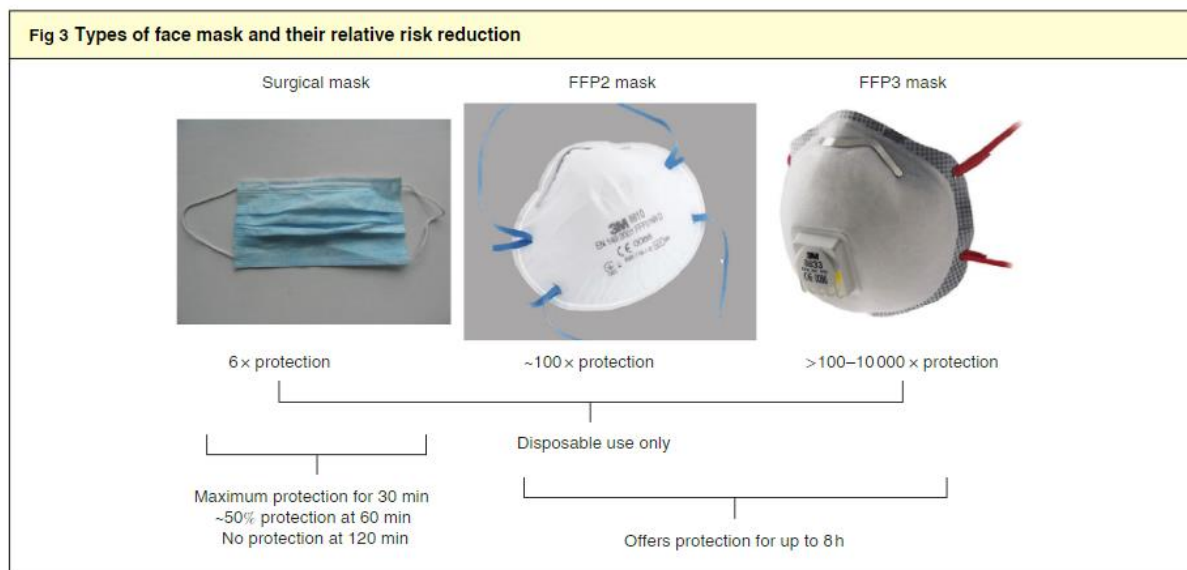
Overzicht operaties met een hoog risico op COVID-19 overdracht en alles wat we moeten weten over de verschillende soorten (medische) mondkmaskers

Personal protective equipment for surgeons during COVID - 19 pandemic: systematic review of availability, usage and rationing. ZM Jessop et al. *BJS*, Sep 2020 – Volume 107 – Issue 10, pages 1262-1280.

Pubmed ID: 32395837.

Background: Surgeons need guidance regarding appropriate personal protective equipment (PPE) during the COVID-19 pandemic based on scientific evidence rather than availability. The aim of this paper is to inform surgeons of appropriate PPE requirements, and to discuss usage, availability, rationing and future solutions.

Methods: A systematic review was undertaken in accordance with the PRISMA guidelines using the MEDLINE, EMBASE, & WHO COVID-19 Databases. Newspaper and internet article sources were identified using NEXIS. The search was complemented by bibliographic secondary linkage. The findings were analysed alongside guidelines from the World Health Organisation (WHO), Public Health England (PHE), the Royal College of Surgeons & Specialty Associations.



Data extracted from Kelkar *et al.*⁵¹ and <https://www.hse.gov.uk/research/rpd/rr619.pdf>.

Results: Of a total 1329 articles identified, 305 were removed (duplicates etc), and finally, 95 studies met the inclusion criteria. Recommendations made by the WHO regarding the use of PPE in the COVID-19 pandemic have evolved alongside emerging evidence. Medical resources including PPE have been rapidly overwhelmed. There is a global effort to overcome this by combining the most effective use of existing PPE in combination with innovative strategies to produce more. Practical advice on all aspects of PPE are detailed in this systematic review.

Conclusion: Although there is a need to balance limited supplies with staff and patient safety, this should not leave surgeons treating patients with inadequate PPE. This article is protected by copyright. All rights reserved.

EXTRA

Vrouwelijke rolmodellen in de colorectale chirurgie

A narrative celebrating the recent contributions of women to colorectal surgery. DS Keller et al. *Surgery*: September 2020 – Volume 168 – Issue 3 – p 355-362.

Pubmed ID: 32741622.

Background: To interview extraordinary women who have made recent significant contributions to the field of colorectal surgery.

Design: The authors asked some of the many extraordinary women who have made significant contributions to the field of colorectal surgery to answer several questions. These women were selected from many potential candidates based upon their extraordinary recent contributions to the field of colorectal surgery. These thought leaders were asked about their contributions to colorectal surgery, their mentors, whether they had any women as role models, and, lastly, what they would tell their younger selves. The study was structured to recognize these women for their remarkable recent contributions to colorectal surgery, and we wished to encourage women to pursue leadership in colorectal surgery including the allied fields of colorectal pathology and colorectal imaging. Furthermore, the authors hoped to inspire male colorectal surgeons to actively mentor and help the career development of women colorectal surgeons. The potential limitations of the study include the fact that there are many more well-deserving women who could have been included in the sample survey but, because of space constraints, were not invited.

Conclusion: Women in colorectal surgery and in the allied specialties of colorectal pathology and colorectal radiology have made many recent major significant contributions to colorectal surgery. The expectation is that the volume and frequency of such contributions as well as the number of women making these contributions should further significantly increase with time.

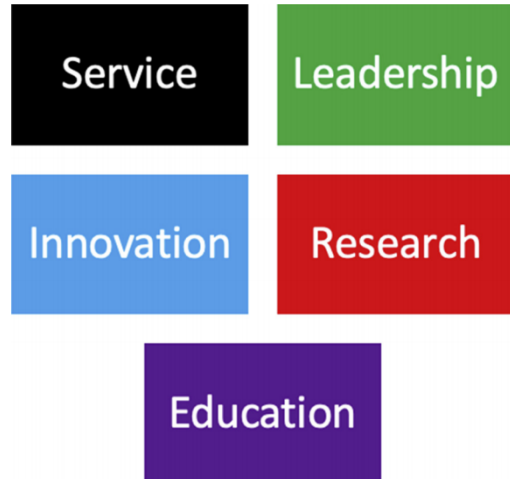


Fig 1. Areas of contributions discussed by the interviewees.