Convegno

DIAGNOSI E CURA DEI TUMORI PANCREATICI

Sala Conferenze Ordine Medici ed Odontoiatri - Via Lamarmora n. 167 (Palazzo il Diamante) - Brescia

19 maggio 2018 - ore 8.00

Le complicanze della chirurgia

Gian Luca Baiocchi

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Thanks to the organizing committee!

D.L.gs 211/2003
Dir 2001/20/CE
GU n. 184, 2003

No conflict of interest

Complications after pancreatic surgery...

The big picture

Complications after Pancreaticoduodenectomy (PD)

Complications after Distal pancreatectomy (DP)

List of complications
Mortality
Morbidity

...and countermeasures

Mortality after pancreatic surgery

agena.s.
AGENZIA NAZIONALE PER I SERVIZI SANITARI REGIONALI

PNE
PROGRAMMA NAZIONALE VALUTAZIONE ESITI

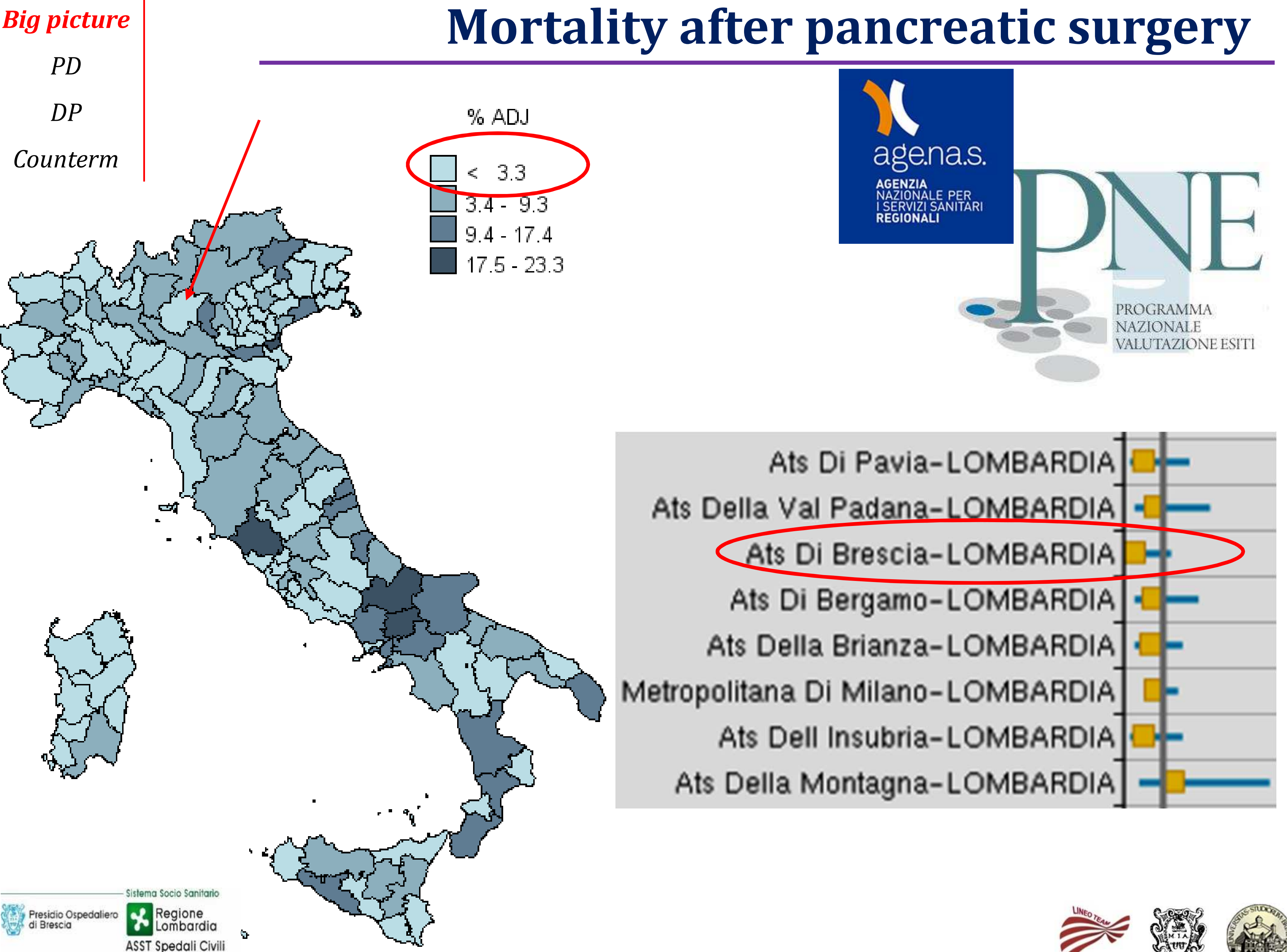
Intervento chirurgico per TM pancreas: mortalità a 30 giorni

Mortalità x100

Year	2010	2011	2012	2013	2014	2015	2016

5.8% (2010)

4.2% (2016)


Big picture
PD
DP
Counterm
Mortality after pancreatic surgery
% ADJ
< 3.3
3.4 - 9.3
9.4 - 17.4
17.5 - 23.3
agenas.
AGENZIA NAZIONALE PER I SERVIZI SANITARI REGIONALI
PNE
PROGRAMMA NAZIONALE VALUTAZIONE ESITI
Ats Di Pavia-LOMBARDIA
Ats Della Val Padana-LOMBARDIA
Ats Di Brescia-LOMBARDIA
Ats Di Bergamo-LOMBARDIA
Ats Della Brianza-LOMBARDIA
Metropolitana Di Milano-LOMBARDIA
Ats Dell Insubria-LOMBARDIA
Ats Della Montagna-LOMBARDIA
Sistema Socio Sanitario
Presidio Ospedaliero di Brescia
Regione Lombardia
ASST Spedali Civili

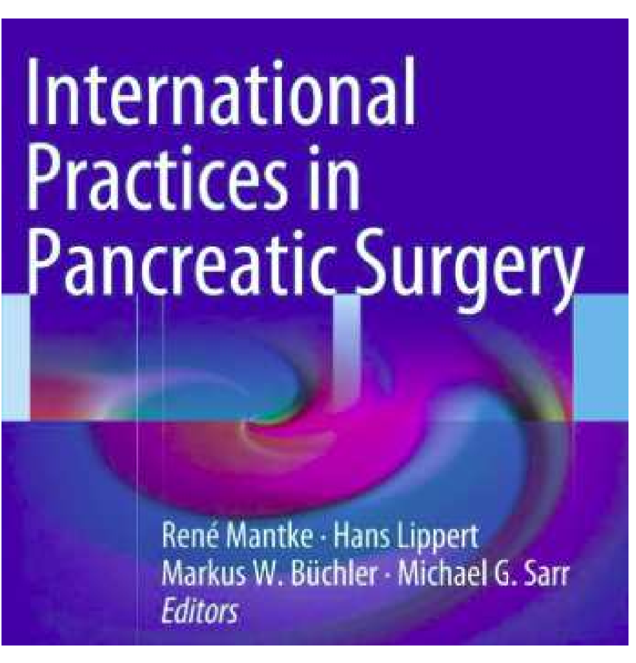
Big picture

PD

DP

Counterm

Morbidity after pancreatic surgery



Study	Year	Patient number	Morbidity (%)
Büchler *et al.*	Am J Surg, 1992	246	32
Pederzoli *et al.*	Br J Surg, 1994	252	15.6
Montorsi *et al.*	Surgery, 1995	218	21.6
Friess *et al.*	Br J Surg, 1995	247	16.4
Lowy *et al.*	Ann Surg, 1997	120	30
Yeo *et al.*	Ann Surg, 2000	211	40
Gouillat *et al.*	Br J Surg, 2001	75	13.15

NCS-NSQIP: 14%

VA-NSQIP: 63%

13%-63%
Major morbidity

Need for commonly accepted classification of complications

Big picture

PD

DP

Counterm

Available classifications

Ann Surg 2013

FEATURE

The Comprehensive Complication Index

A Novel Continuous Scale to Measure Surgical Morbidity

Ksenija Slankamenac, MD, Rolf Graf, PhD,* Jeffrey Barkun, MD,† Milo A. Puhan, MD, PhD,‡ and Pierre-Alain Clavien, MD, PhD**

Grading of severity (*I-V*)

No definition provided

Not specific for pancreatic surgery

TABLE 1. Clavien-Dindo Classification

Grade	Definition
Grade I	Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic, and radiological interventions Allowed therapeutic regimens are as follows: drugs as antiemetics, antipyretics, analgetics, diuretics, electrolytes, and physiotherapy. This grade also includes wound infections opened at the bedside
Grade II	Requiring pharmacological treatment with drugs other than those allowed for grade I complications Blood transfusions and total parenteral nutrition are also included
Grade III	Requiring surgical, endoscopic, or radiological intervention
IIIa	Intervention not under general anesthesia
IIIb	Intervention under general anesthesia
Grade IV	Life-threatening complication (including CNS complications)* requiring IC/ICU management
IVa	Single-organ dysfunction (including dialysis)
IVb	Multiorgan dysfunction
Grade V	Death of a patient

Morbidity after pancreatic surgery

No complications — **10%**

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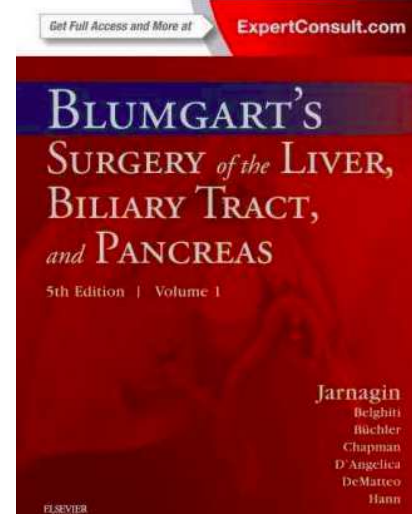
IVb	Multiorgan dysfunction
Grade V	Death of a patient

Grade I–II: **50%**

Grade III: **30%**

Grade IV–V: **10%**



Morbidity after pancreatic surgery

Hepatobiliary & Pancreatic Diseases International
Available online 22 April 2018
In Press, Corrected Proof

Predictors of 30-day readmission following pancreatic surgery: A retrospective review

Leo I. Amodu [a, b], Jamil Alexis [a, b], Aron Soleiman [b], Meredith Akerman [c], Poppy Addison [a, b], Toni Iurcotta [a, b], Horacio L. Rodriguez Rilo [a, b]

3830 pz, SEERT
15.1% 30d readmission
39.3% 90d readmission
Sepsis/dehydratation

The big picture of pancreatic surgery

Mortality	Morbidity (CD≥3)	90d readm
4.2%	**40%**	**40%**

Pancreaticoduodenectomy

Before ...

Liver

Stomach

Gallbladder

Duodenum

Pancreas

A

STRUCTURES REMOVED

...After the Whipple Procedure

Liver

Stomach

Gallbladder bed

Pancreas

A

Healthy pancreas, bile duct and stomach empty directly into small intestine

© 2007 MediVisuals, Inc

Pancreaticoduodenectomy

Pancreatic fistula

Haemorrhage

Pancreaticoduodenectomy

Pancreatic fistula

Biochemical leak=*any measurable drainage (…) on or after post-operative day 3 with amylase levels greater than three times the upper limit of the normal serum amylase level.*

PF grade B=*need for endovascular/percutaneous/surgical treatment*

PF grade C=*organ failure/death*

DOI:10.1111/hpb.12063 HPB

ORIGINAL ARTICLE

Pancreatic fistula after a pancreaticoduodenectomy for ductal adenocarcinoma and its association with morbidity: a multicentre study of the French Surgical Association

Pietro Addeo[1], Jean Robert Delpero[2], Francois Paye[3], Elie Oussoultzoglou[1], Pascal R Fuchshuber[1,10], Alain Sauvanet[4], Antonio Sa Cunha*[5], Yves Patrice Le Treut[6], Mustapha Adham[7], Jean-Yves Mabrut[8], Laurence Chiche[9] & Philippe Bachellier[1]; The French Surgical Association (AFC)

2004-2009, 325 pz, 37 centres

PF B/C 22.1%

Risk factors:

soft pancreas

no pre-op diabetes

PJ

low volume centres

Pancreaticoduodenectomy

Post-pancreatectomy haemorrhage

massive bleeding, often fatal, usually secondary to septic rupture of the visceral arteries, also eroded by pancreatic juices resulting from a pancreatic fistula

Systematic Review of Delayed Postoperative Hemorrhage after Pancreatic Resection

Didier Roulin · Yannick Cerantola · Nicolas Demartines · Markus Schäfer

7400 pz
243 PPH (3.3%)
Angio 39%
Surgery 53%
Mortality 48%

Risk factors:
MRSA in drainage
Pancreatic fistula
Abdominal collections

Pancreaticoduodenectomy

Post-pancreatectomy haemorrhage

Surgical Outcome Research

Evaluation of the International Study Group of Pancreatic Surgery definition of post-pancreatectomy hemorrhage in a high-volume center

Robert Grützmann, MD, PhD, Felix Rückert, MD, Nele Hippe-Davies, Marius Distler, MD, and Hans-Detlev Saeger, Professor, Dresden, Germany

PPH

Severity
mild
severe

Time of onset
early
late
late
early

Localisation
intraluminal
extraluminal
?

Consequence
Endoscopy
Angio-CT
?
Embolisation
Observation
Relaparotomy

Pancreaticoduodenectomy

Pancreatic fistula

Haemorrhage

Other anastomotic leak

Postoperative pancreatitis

Postoperative bowel obstruction

Other abnormal fluid from drainage, and/or abdominal collections

Delayed gastric emptying

Medical complications

Distal pancreatectomy

Distal pancreatectomy

Pancreatic fistula

Postoperative collections (abscesses)

Distal pancreatectomy

Online Submissions: wjg.wjgnet.com
www.wjgnet.com
wjg@wjgnet.com

World J Gastroenterol 2007 October 14; 13(38): 5096-5100
World Journal of Gastroenterology ISSN 1007-9327
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RAPID COMMUNICATION

Risk factors associated with pancreatic fistula after distal pancreatectomy, which technique of pancreatic stump closure is more beneficial?

Marco Pericoli Ridolfini, Sergio Alfieri, Stavros Gourgiotis, Dario Di Miceli, Fabio Rotondi, Giuseppe
Roberta Manghi, Giovanni Battista Doglietto

Biochemical leaks: 60-70%

Grade B+C pancreatic fistula: 30%

Table 4 Incidence of pancreatic fistula after distal pancreatectomy according to examined risk factors

	Patients (n = 64)	Fistula No. (n = 50)	Fistula Yes (n = 14)	P value
Age (yr)				NS
< 70	23 (36)	17 (34)	6 (43)	
> 70	41 (64)	33 (66)	8 (57)	
Sex				NS
Male	30 (47)	23 (46)	7 (50)	
Female	34 (53)	27 (53)	7 (50)	
Pancreatic stump closure				NS
Stapler	29 (45)	22 (44)	7 (50)	
Suture	35 (55)	28 (56)	7 (50)	
Pathology				0.04
Pancreatic disease	38 (59)	27 (54)	11 (79)	
Non-pancreatic malignancy	26 (41)	23 (46)	3 (21)	
Octreotide therapy				0.01
Yes	34 (53)	30 (60)	4 (28)	
No	30 (47)	20 (40)	10 (72)	
Texture of pancreatic parenchyma				0.006
Soft	27 (42)	15 (30)	12 (86)	
Fibrotic	37 (58)	35 (70)	2 (14)	
Concomitant splenectomy				0.002
Yes	56 (87)	46 (92)	10 (71)	
No	8 (13)	4 (8)	4 (29)	
Procedures				NS
Pancreatic resection only	21 (33)	14 (28)	7 (50)	
Additional procedures	43 (67)	36 (72)	7 (50)	

Distal pancreatectomy

Pancreatic fistula

Postoperative collections(abscesses)

Postoperative bowel perforation or necrosis

Wound infections

Medical complications (main pulmonary)

Distal pancreatectomy + Appleby

Ann Surg Oncol (2018) 25:1440–1447
https://doi.org/10.1245/s10434-018-6391-z

ORIGINAL ARTICLE – PANCREATIC TUMORS

Outcomes After Distal Pancreatectomy with Celiac Axis Resection for Pancreatic Cancer: A Pan-European Retrospective Cohort Study

Sjors Klompmaker, MD[1], Jony van Hilst, MD, Msc[1], Sarah L. Gerritsen, BSc[1], Mustapha Adham, MD[2], M. Teresa Albiol Quer, MD[3], Claudio Bassi, MD[4], Frederik Berrevoet, MD[5], Ugo Boggi, MD[6], Olivier R. Busch, MD, PhD[1], Manuela Cesaretti, MD[7], Raffaele Dalla Valle, MD[8], Benjamin Darnis, MD[9], Matteo De Pastena, MD[4], Marco Del Chiaro, MD[10], Robert Grützmann, MD[11], Markus K. Diener, MD[12], Traian Dumitrascu, MD[13], Helmut Friess, MD[14], Arpad Ivanecz, MD[15], Anastasios Karayiannakis, MD[16], Giuseppe K. Fusai, MD[17], Knut J. Labori, MD, PhD[18], Carlo Lombardo, MD[6], Santiago López-Ben, MD[3], Jean-Yves Mabrut, MD[9], Willem Niesen, MD[12], Fernando Pardo, MD[19], Julie Perinel, MD[2], Irinel Popescu, MD[13], Geert Roeyen, MD[20], Alain Sauvanet, MD[7], Raj Prasad, MD[21], Christian Sturesson, MD[22], Mickael Lesurtel, MD, PhD[9], Jorg Kleeff, MD[23], Roberto Salvia, MD[4], Marc G. Besselink, MD, Msc, PhD[1], and the E-AHPBA DP-CAR study group

2000-2016, 68 pz, 20 centres

Mort 16%

Morbidity 54.4%

Relaparotomy 11,7%

R0 52%

Big picture

PD

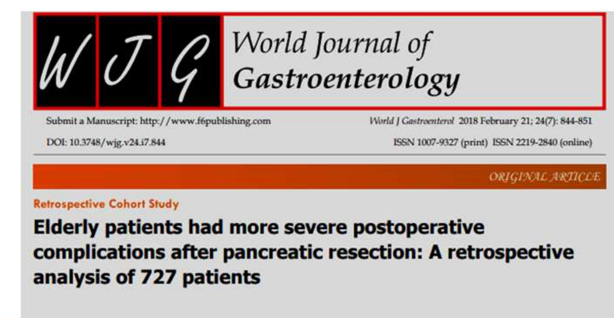
DP

Counterm

...and countermeasures

Defining incidence in real life

Investigating risk factors



WJG *World Journal of Gastroenterology*

Submit a Manuscript: http://www.f6publishing.com
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DOI: 10.3748/wjg.v24.i7.844
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

ORIGINAL ARTICLE

Retrospective Cohort Study

Elderly patients had more severe postoperative complications after pancreatic resection: A retrospective analysis of 727 patients

Ying-Tai Chen, Fu-Hai Ma, Cheng-Feng Wang, Dong-Bing Zhao, Ya-Wei Zhang, Yan-Tao Tian

Table 4 Univariate and multivariate Cox proportional hazards models for severe postoperative complications (grades Ⅲb-Ⅴ)

Variable	Subgroup	Univariate	Multivariate	
		P value	*P* value	HR (95%CI)
Medical risk factors				
Age in yr	< 65 *vs* ≥ 65	0.002	0.010	1.63 (1.18-6.30)
BMI	< 24 kg/m^2 *vs* ≥ 24 kg/m^2	0.012	0.041	1.20 (1.07-5.89)
ASA classification	Ⅰ/Ⅱ *vs* Ⅲ/Ⅳ	0.038	0.271	-
Surgical risk factors				
Pancreaticoduodenectomy	Yes *vs* No	< 0.001	0.017	4.86 (1.20-8.31)
Length of operation	< 241 min *vs* ≥ 241 min (median)	0.004	0.012	2.97 (1.04-6.14)

Big picture

PD

DP

Counterm

...and countermeasures

Defining incidence in real life

Investigating risk factors

Reduce/eliminate risk factors

Early recognition (pro-active attitude?)

Effective treatment (angio, endo, VAC, etc...)

Check results

Cima Colombè, Valle Camonica, m. 2576 slm
thanks!
gianluca.baiocchi@unibs.it

Pancreaticoduodenectomy

DE GRUYTER OPEN | Radiology and Oncology | Ljubljana | Slovenia | www.radioloncol.com | Radiology Oncology

research article

Impact factors for perioperative morbidity and mortality and repercussion of perioperative morbidity and long-term survival in pancreatic head resection

Stojan Potrc[1], Arpad Ivanecz[1], Vid Pivec, Urska Marolt[1], Sasa Rudolf[2], Bojan Iljevec[1], Tomaz Jagric[1]

TABLE 3. Surgical complications in 240 operated patients

Type of all surgical complications (n = 240)	n	%	% 90-day mortality
No surgical complications	169	70.4	3
PF B or C	28	11.7	25
PF B or C and bleeding	8	3.3	62.5
Bleeding in the intestines	2	0.8	0
Intraabdominal bleeding – no PF	4	1.7	25
Bile leak	10	4.2	0
Leak from GEA	5	2.1	20
Dehiscence of laparotomy	3	1.3	0
Intraabdominal abscess	6	2.5	0
Ileus	1	0.4	0
Thrombosis of vascular graft	2	0.8	0
Volvulus coeci	1	0.4	0
Stenosis of coeliac trunk	1	0.4	0
Total	**240**	**100.0**	**7.9%**

GEA = gastroenteroanastomosis; PF B and C = pancreatic fistula type B and C

TABLE 4. General complications in 240 operated patients

Type of all general complications (n = 240)	n	%	% 90-day mortality
No general complications	202	84.2	5.0
Pneumonia	8	3.3	25
Cardiorespiratory decompensation	3	1.3	100
Heart failure	9	3.8	11.1
Pulmonary embolism	4	1.7	25
Different infections	10	4.2	10
Renal failure	1	.4	100
Brain stroke	1	.4	0
Miscellaneous	2	.8	0
Total	**240**	**100.0**	**7.9**

Thanks to the organizing committee!

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No conflict of interest

Updates in Surgery
https://doi.org/10.1007/s13304-018-0520-x

ORIGINAL ARTICLE

Laparoscopic pancreatic resections in two medium-sized medical centres

Gian Luca Baiocchi[1] · Edoardo Rosso[2] · Andrea Celotti[1,3] · Giuseppe Zimmiti[2] · Alberto Manzoni[2] · Marco Garatti[2] · Guido Tiberio[1] · Nazario Portolani[1]

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