ACHBT
ASSOCIATION DE CHIRURGIE HEPATO-BILIO-PANCREATIQUE ET TRANSPLANTATION

CONGRÈS COMMUN DE CHIRURGIE VISCÉRALE & DIGESTIVE

Controverse sur la prise en charge des fistules pancréatiques graves

Totalisation de pancréatectomie

VS

Wirsungostomie

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La DPC se complique souvent…

- Mortalité à J90 = 2 - 5% (DPC)
- Morbidité reste élevée = 30 à 50%

Fistule pancréatique =

« Talon d'achille » de la chirurgie pancréatique

DPC 25 - 30%

« Susceptibilité » pancréatique

Désunion anastomotique

Ischémie moignon

Pancréatite postop

Addeo HPB 2014
El Amrani HPB 2020
Pedrazzoli Medicine 2017
Giuliani Surgery 2022

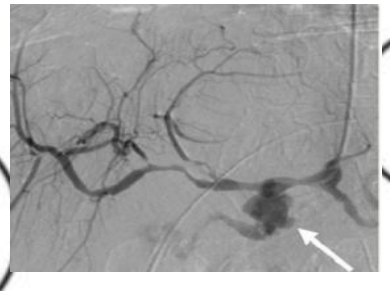
J3-J5

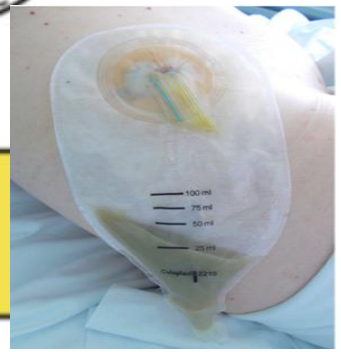
The 2016 update of the International Study Group (ISGPS) definition and grading of postoperative pancreatic fistula: 11 Years After

Amylase >3 times upper limit institutional normal serum amylase value

Grade A
Biochemical Leak
(BL)

- Persistent drainage >3 weeks*
-Clinically relevant change in management of POPF
-Percutaneous or endoscopic drainage*
-Angiographic procedures for bleeding*
-Signs of infection without organ failure*





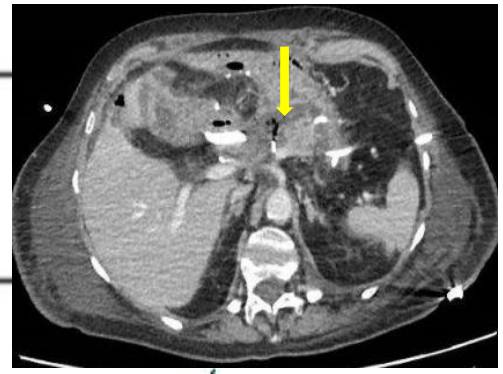
Grade B
Pancreatic Fistula

Bassi Surgery 2017
Hirono J Hepatobil Pancreat 2020
Marchegiani BJS 2021

Grade B
Pancreatic Fistula

22 %

Reoperation*
Organ Failure*
Death*



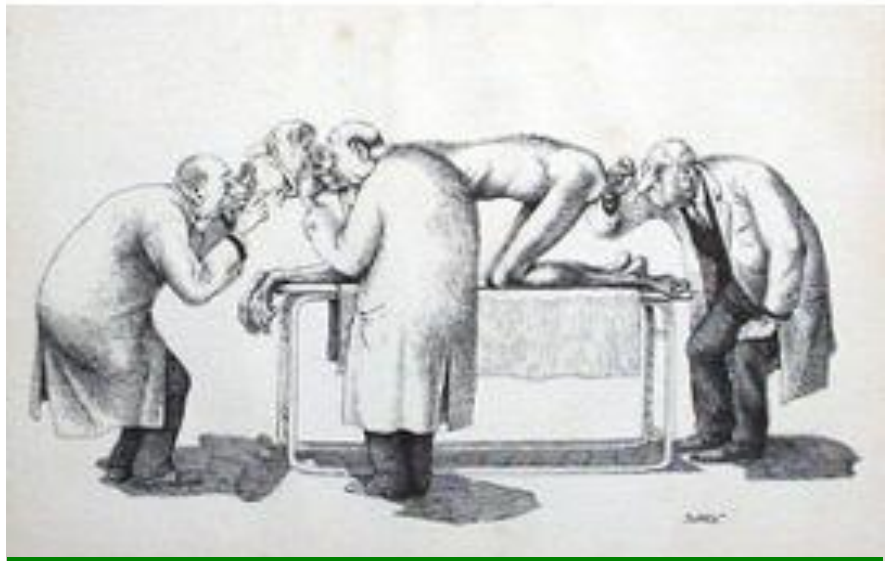
Grade C
Pancreatic Fistula

2- 11 %

Impliquée dans 70% des décès
Avec sepsis +/- hémorragie

Impact oncologique

Fistule Pancréatique Grade C



Ne pas attendre

Re-laparotomie = situation dramatique
Conditions critiques
Décès = 50%

Objectifs prise en charge d'une FP grave

DIMINUER MORTALITÉ

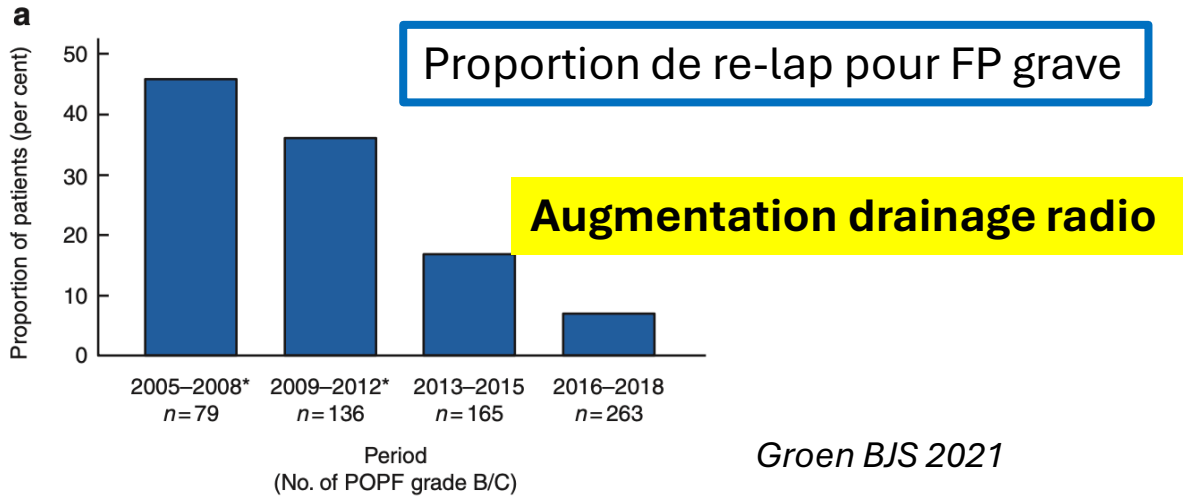
- Limiter Failure to rescue

	VHV/HV	MV	LV/VLV	p
Morbidité	47.1%	50.7%	56.2%	0.001/0.05
Failure to rescue	9%	10%	14%	0.006/0.03
Mortalité 90j	5.8%	8.5%	9.7%	0.001/0.01

Ratnayake Surgery 2021

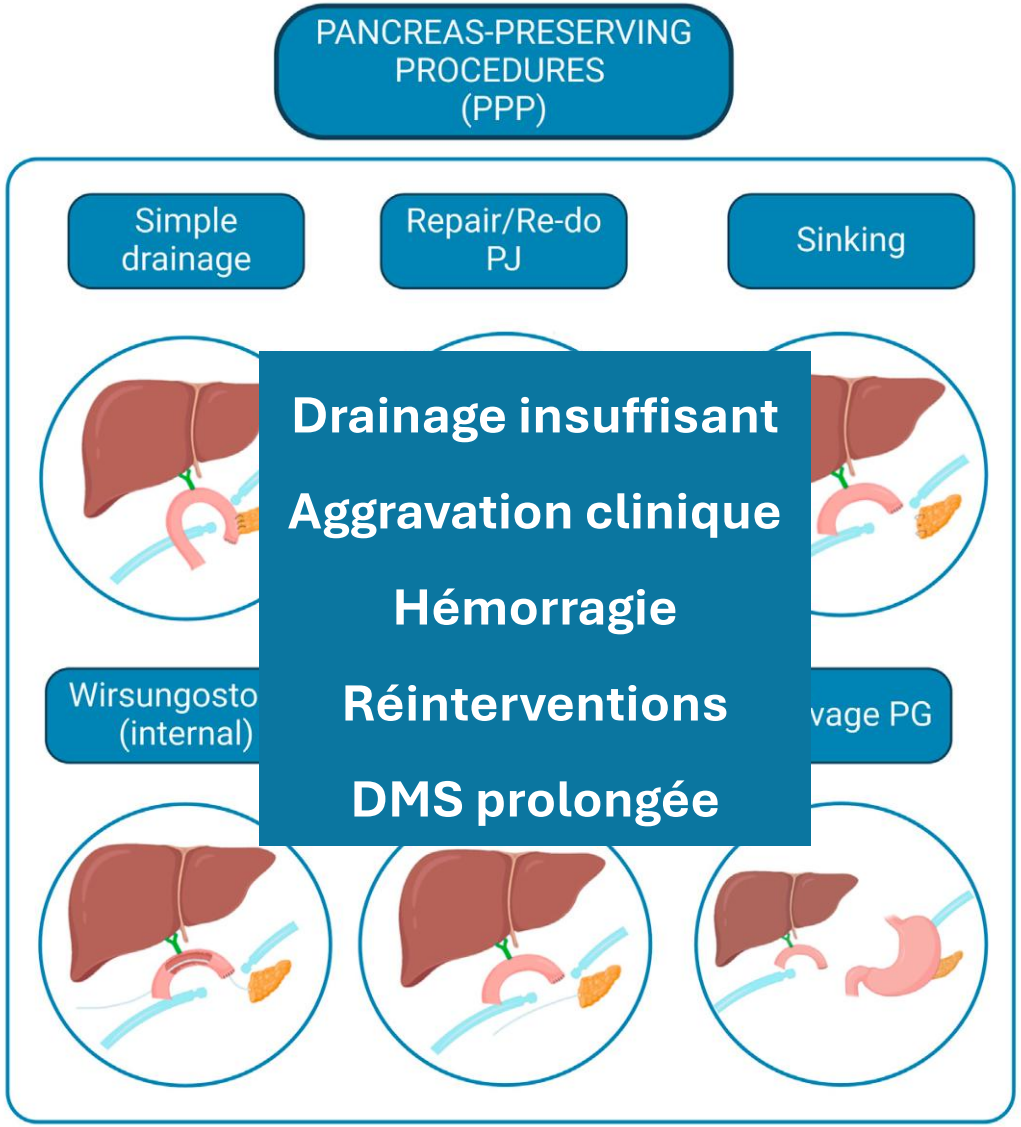
- Limiter ré-opération

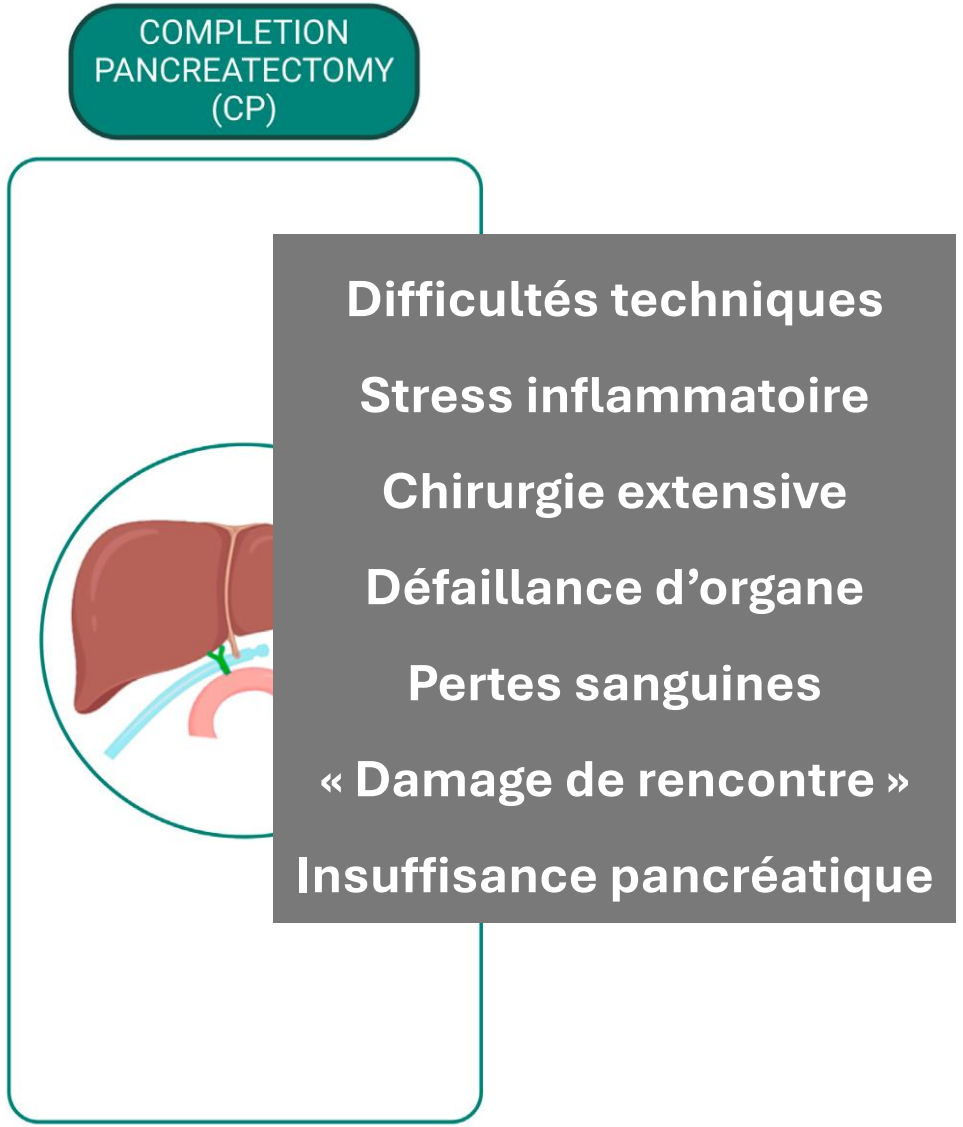
- Limiter les séquelles fonctionnelles



Groen BJS 2021

Moyens à disposition





Marchetti HPB 2025

Pancreas-preserving management in reinterventions for severe pancreatic fistula after pancreatoduodenectomy: a systematic review

Langenbecks Arch Surg 2015

Ahmed Fouad Bouras[1] · Hélène Marin[2] · Chafik Bouzid[3] · François-René Pruvot[2] · Philippe Zerbib[2] · Stéphanie Truant[2]

Conclusion Pancreas-preserving surgical management of the PR after LTPOPF can be performed with acceptable mortality and morbidity. These data suggest that CP should have a more precisely specified role in the management algorithm and should not be performed systematically.

Morbidité +++
Conséquences fonctionnelles

Et pourtant….La TOTALISATION

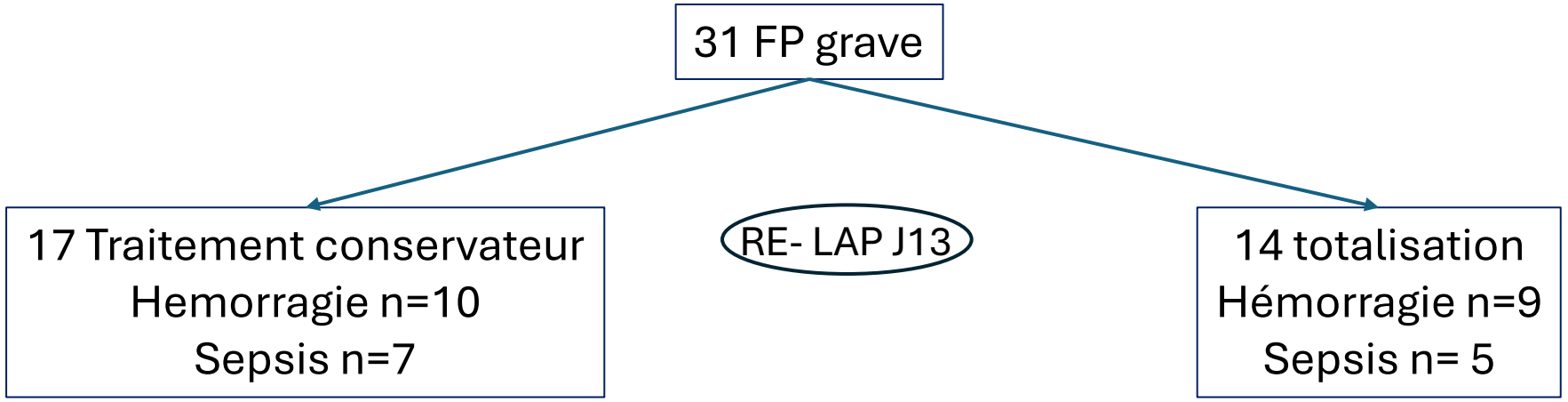
- Seule approche permettant **d'éradiquer** les causes sous-jacentes de morbi-mortalité en cas de FP grave
  - « Enlève le problème »
  - Diminution risque de récidive hémorragique
  - Limite gravité du sepsis
  - Diminution du risque de ré-opération
  - Limite DMS

Relaparotomy for a pancreatic fistula after a pancreaticoduodenectomy: a comparison of different surgical strategies

HPB 2014

Gianpaolo Balzano[1], Nicolò Pecorelli[1], Lorenzo Piemonti[2], Riccardo Ariotti[1], Michele Carvello[1], Rita Nano[2], Marco Braga[1] & Carlo Staudacher[1]

669 DPC (2004 – 2011)
RE- laparotomie pour FP Grade C 37/669 (6%)
Patients exclus de l'étude n=6
(pas de choix entre les 2 techniques totalisation vs conservation)



Totalisation
=
1er choix

Mortalité	30%	21%
Perte sang	940 ml	2500 ml
Re lap	59%	7%
DMS	24 j	14 j

Totalisation = chirurgie complexe

Management simultanée

1. Hémorragie
2. Tissu inflammatoire et fragile
3. Organe de voisinage
4. Instabilité hémodynamique

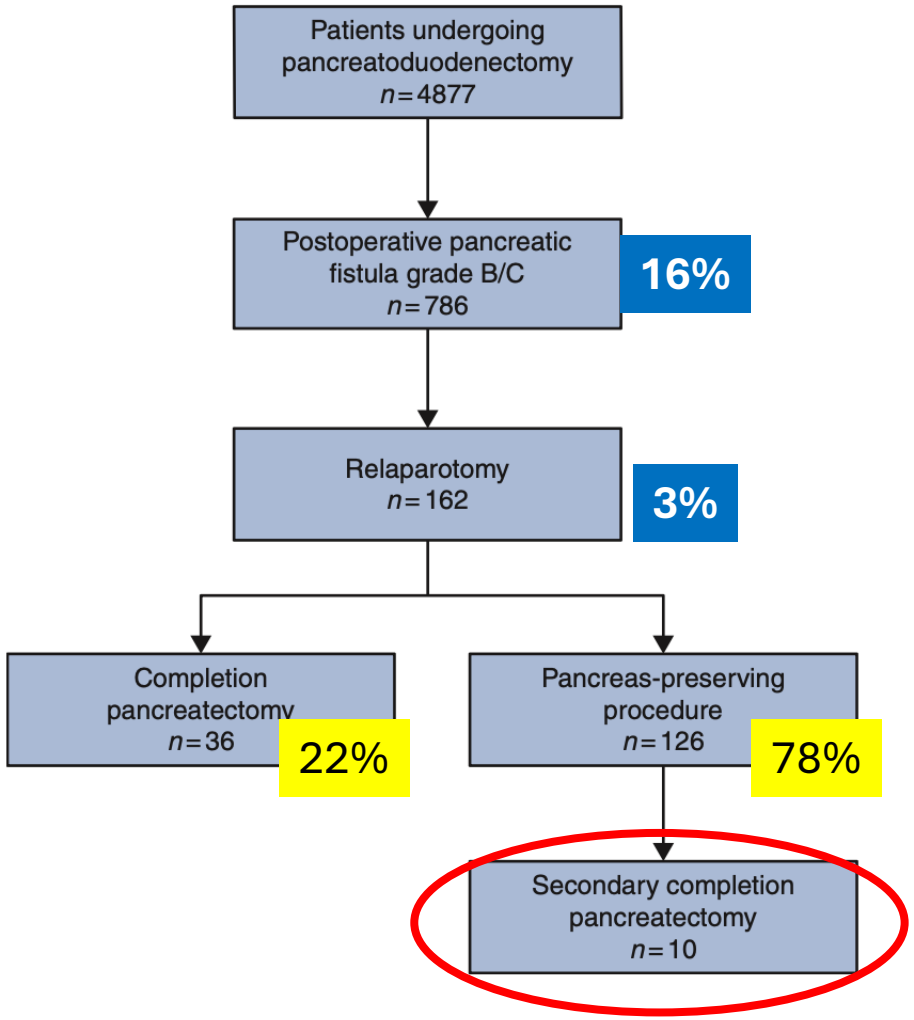
Mortalité = 21 à 56%

Marchetti HPB 2025

Completion pancreatectomy or a pancreas-preserving procedure during relaparotomy for pancreatic fistula after pancreatoduodenectomy: a multicentre cohort study and meta-analysis

BJS 2021

J. V. Groen [1,*], F. J. Smits [2], D. Koole[1], M. G. Besselink [3], O. R. Busch[3], M. den Dulk[4], C. H. J. van Eijck[5], B. Groot Koerkamp[5], E. van der Harst[6], I. H. de Hingh[7,8], T. M. Karsten[9], V. E. de Meijer[10], B. K. Pranger [10], I. Q. Molenaar[2], B. A. Bonsing[1], H. C. van Santvoort[2] and J. S. D. Mieog[1], on behalf of the Dutch Pancreatic Cancer Group



Mortalite J90

X2 pour la totalisation

20/36 (56%) vs 40/126 (32%)

Strategy during initial relaparotomy, pancreas-preserving	Odds ratio	P
Completion pancreatectomy	2.55 (1.07, 6.08)	0.035
Sex		
Male	Reference	
Female	1.97 (0.87, 4.44)	0.104
Age	1.08 (1.03, 1.13)	0.002
BMI*	1.02 (0.93, 1.12)	0.702
ASA score		
I–II	Reference	
III–IV	0.89 (0.38, 2.07)	0.785
Previous reintervention		
No	Reference	
Yes	1.12 (0.56, 2.38)	0.707
Organ failure 24 h before*		
No	Reference	
Single organ	1.15 (0.49, 2.69)	0.755
Multiple organ	2.47 (0.91, 6.68)	0.075

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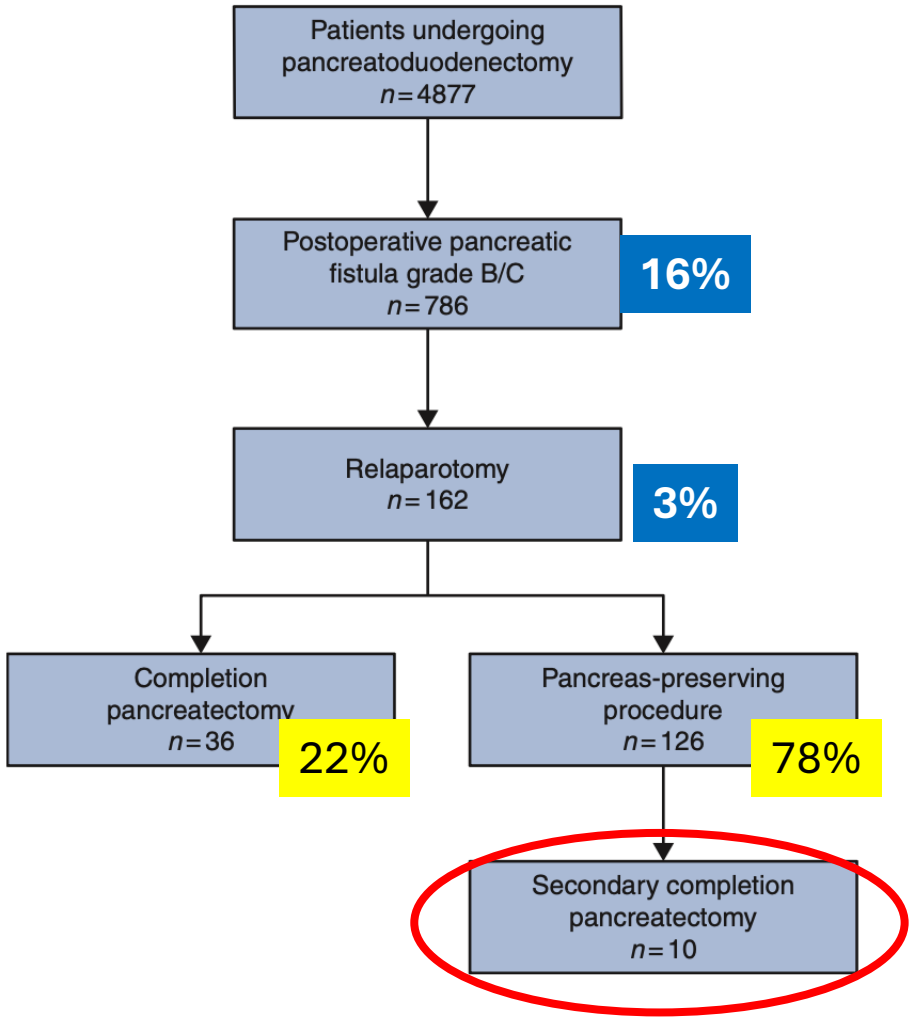
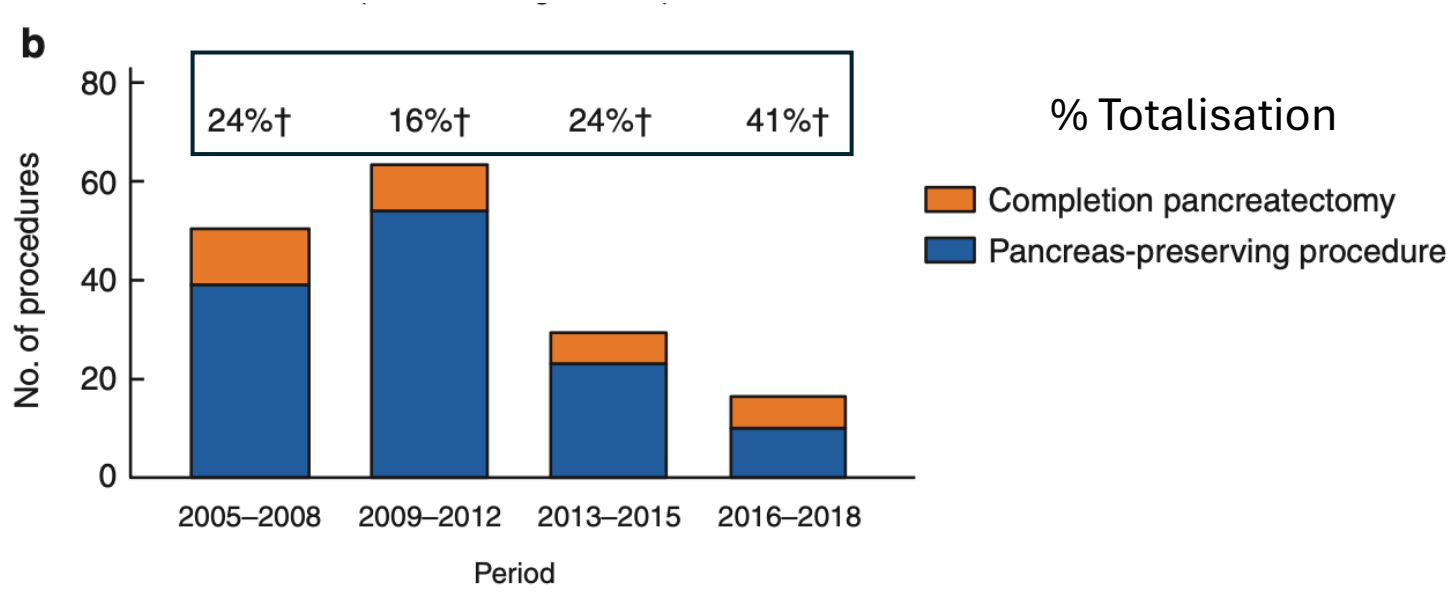




Diminution re-LAP pour FP
Augmentation Totalisation

Clarification indication et sélection patient

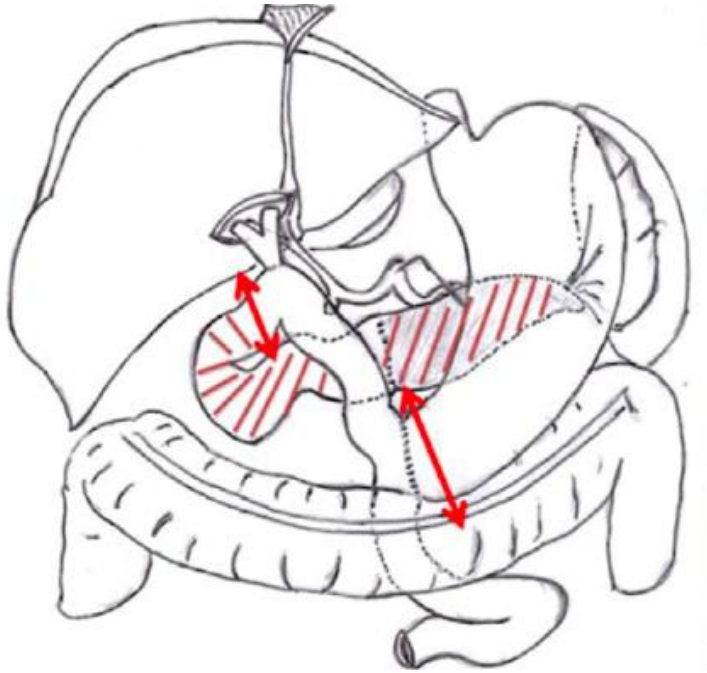
1. Comment faire?

Standardized salvage completion pancreatectomy for grade C postoperative pancreatic fistula after pancreatoduodenectomy (with video)

HPB 2021

Jonathan Garnier[1], Jacques Ewald[1], Ugo Marchese[1], Jean-Robert Delpero[1] & Olivier Turrini[2]

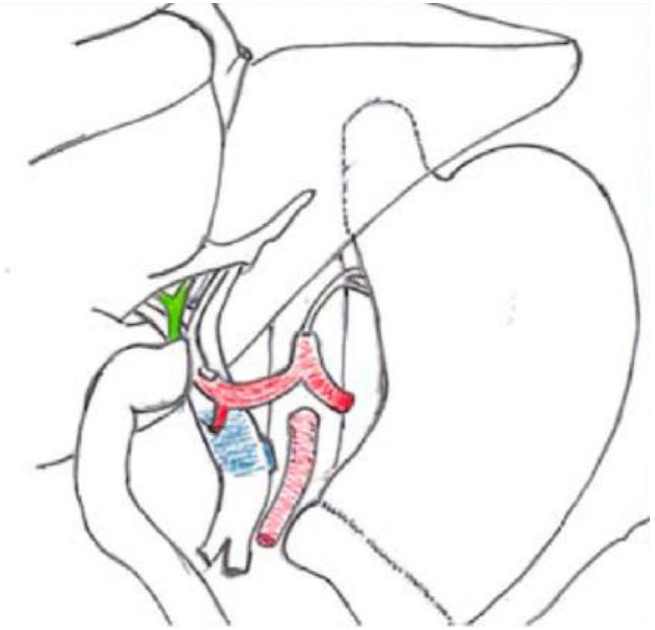
- Totalisation en 4 étapes standardisées



FP grade C **6.7%** (30/450)

Totalisation 70% (21/30)

Mortalité **24%** (5/21)



1- Accès rapide PJ +/-démontage gastrojéjunostomie
2- Section anse pancréatique (si PJ)
3- Totalisation

4- Reconstruction

Clarification indication et sélection patient

1. Comment faire?
2. Pour qui?

Pancréatite aigue post DPC: association(très) fréquente

Parameters	All Patients (N = 120)	Acute Necrotizing Pancreatitis (n = 47)	Pancreaticojejunostomy Leakage (n = 23)	PPH (n = 41)	Other Reasons (n = 9)
Intraoperative diagnosis during CPLP					
POPF	102 (85)	39 (83)	23 (100)	40 (98)	0 (0)
Bleeding	51 (42)	7 (15)	2 (9)	41 (100)	1 (11)
Bile leakage	23 (19)	12 (26)	1 (4)	9 (22)	1 (11)
Bowel fistula	22 (18)	12 (26)	3 (13)	6 (15)	1 (11)
Acute pancreatitis	57 (48)	0	19 (83)	33 (80)	5 (56)
Acute necrotizing pancreatitis	48 (40)	47 (100)	0	1 (2)	0
Peritonitis	68 (57)	36 (77)	13 (57)	17 (41)	2 (22)
Single-organ failure	57 (48)	22 (47)	10 (43)	20 (49)	5 (56)
Multiple-organ failure	30 (25)	12 (26)	6 (26)	10 (24)	2 (22)
Length of hospital stay	42 (23–63)	52 (31–80)	46 (23–57)	36 (22–61)	30 (9–43)
30-d mortality	25 (21)	4 (9)	4 (17)	14 (34)	3 (33)
90-d mortality	44 (37)	13 (28)	9 (39)	19 (46)	3 (33)

3953 DPC (2001-2019)
Totalisation pour complications graves 3%
Analyse histo pancréas totalisé

Loos Ann Surg 2023

Facteurs prédictifs de mauvaise évolution?

- Critères classiques
  - Etat patient avant et pendant la Re Lap
  - Constatation per op

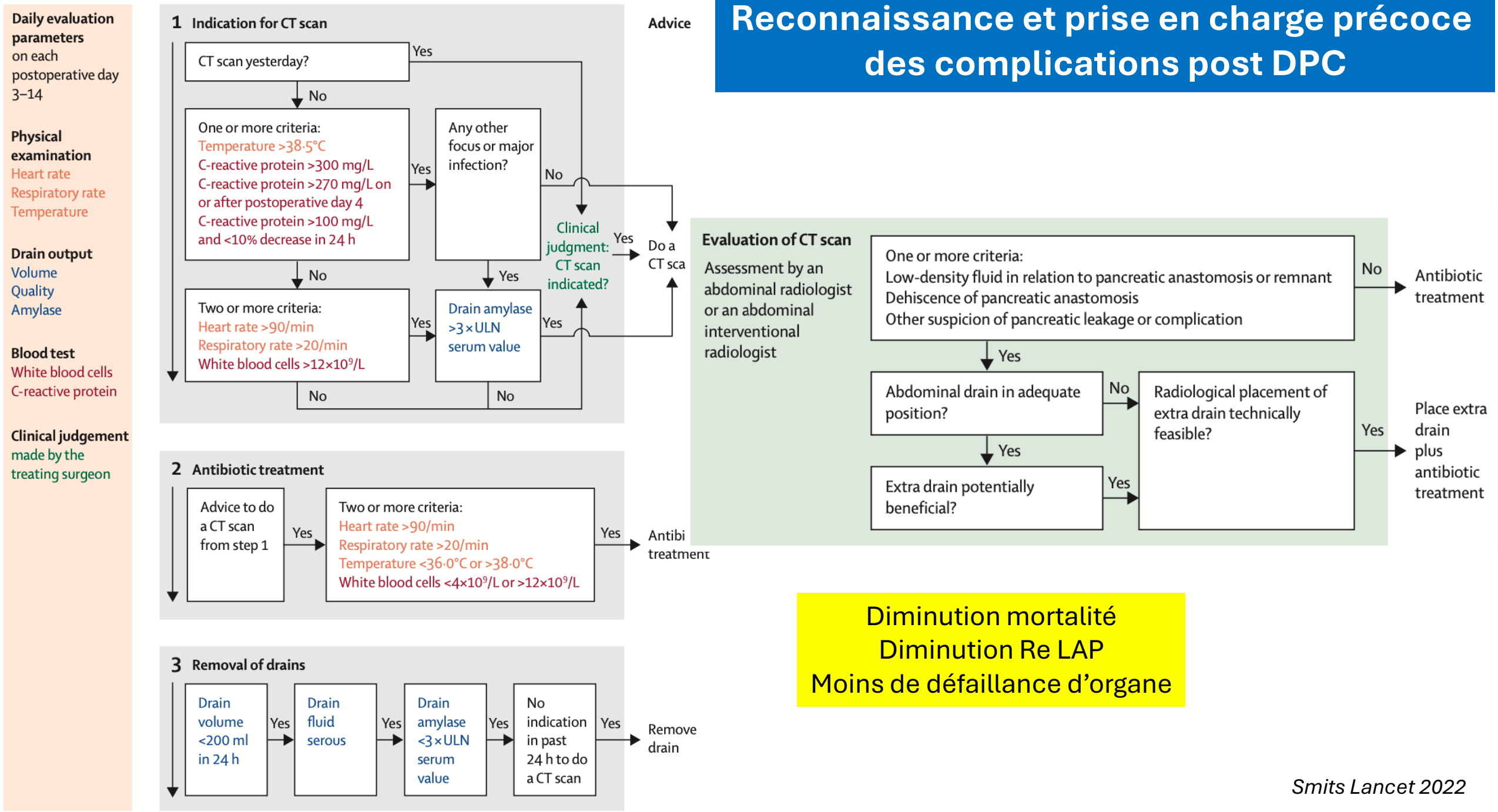
- Le plus mauvais des critères
  - Pancréatite aigue post DPC (grade C) (associée à la FP)

Marchegianni Ann Surg 2022

- Cinétique CRP, Amylase POD 1, TDM TAP précoce
  - Prise de décision rapide

Smits Lancet 2022

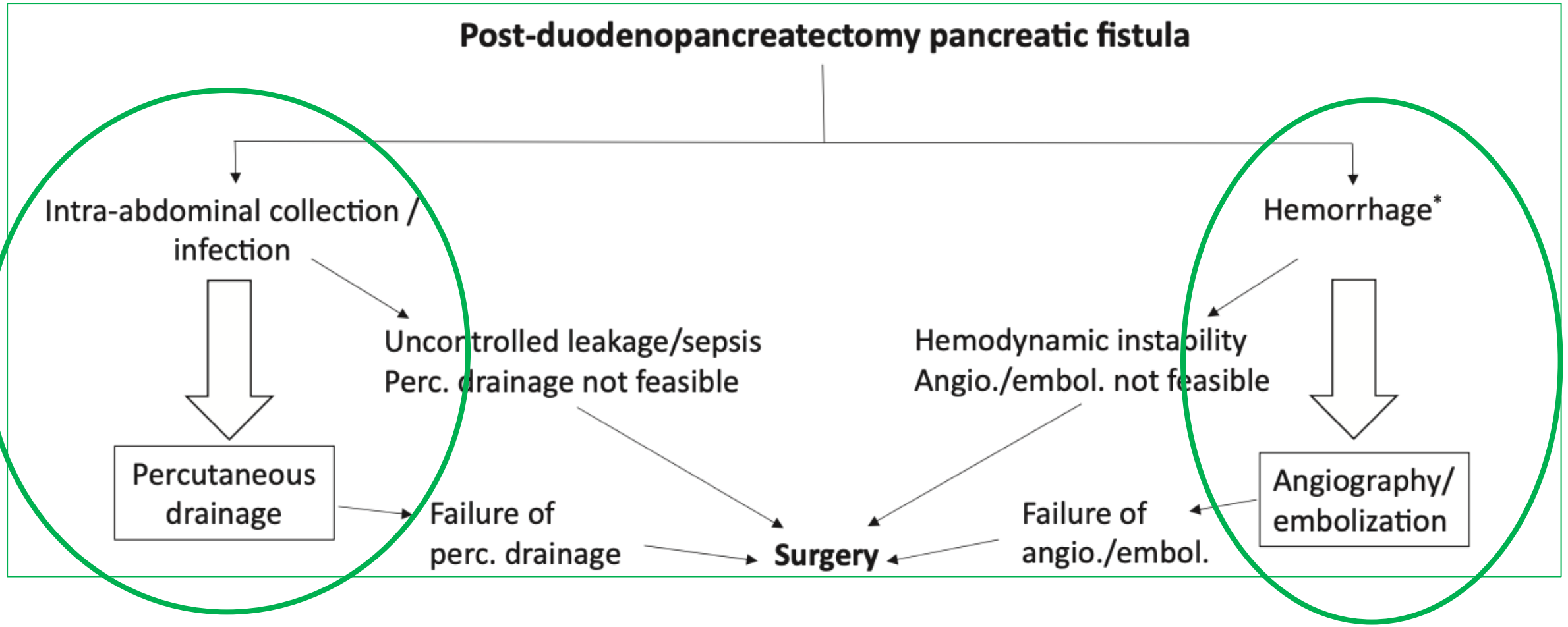
Reconnaissance et prise en charge précoce des complications post DPC



Diminution mortalité
Diminution Re LAP
Moins de défaillance d'organe

Smits Lancet 2022

Step up Approach…



Clarification indication et sélection patient

1. Comment faire?
2. Pour qui?
3. Quand?

Timing de la totalisation

- Amélioration pronostic si totalisation avant J10

- **J12 (<2010)** vs **J9 (>2011)** → mortalité J90 **63%** vs **30%**

Loos Ann Surg 2023

- **J11 [2008–2012] *vs* J14 [2013–2016]** *vs* **J8 [2017–2020]**

Stoop Langenbeck's Archives of Surgery 2022

- Mortalité J90 = **31.3% (*n* = 5/16) [2008–2012] *vs* 28.6% (*n* = 4/14) [2013–2016]** *vs* **0% (*n* = 0/9) [2017–2020]**

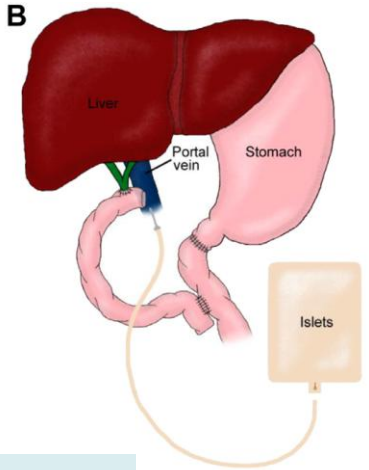
Evite détérioration clinique
Prendre en compte le statut du patient (co-morbidité)
Abord intra abdominal « moins complexe »
Totalisation en 2nde intention= très mauvais pronostic

Clarification indication et sélection patient

- Comment faire?
- Pour qui?
- Quand?
- Quelles séquelles fonctionnelles?

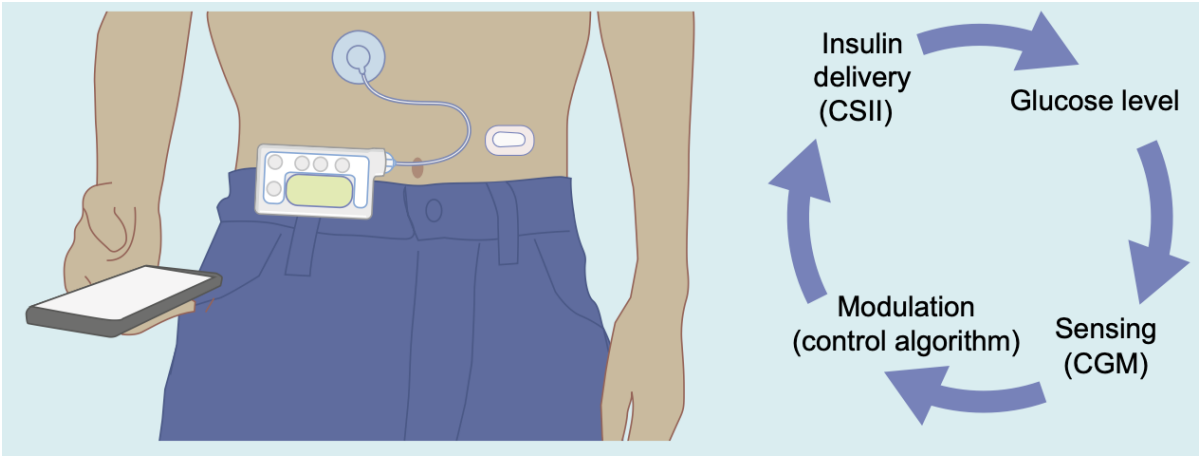
Limiter conséquences métaboliques

- Totalisation = diabète insulino prive et pas de fonction exocrine
- Transplantation autologue d'ilot



Bazano HPB 2014
Bellin Advances in Surgery 2023

- Boucle fermée



Boughton Diabetologia 2021
Larroumet Diabetes and Metabolism 2025

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An evidence-based approach to the surgical interventions for severe pancreatic fistula after pancreatoduodenectomy *The Surgeon (2018)*

Yan-Ming Zhou[*,a], Xin Zhou [a], Tao Wan, Dong Xu, Xiao-Ying Si

Completion pancreatectomy in the acute management of pancreatic fistula after pancreaticoduodenectomy: a systematic review and qualitative synthesis of the literature *HPB 2018*

Alexsander K. Bressan, Michael Wahba, Elijah Dixon & Chad G. Ball

Completion pancreatectomy or a pancreas-preserving procedure during relaparotomy for pancreatic fistula after pancreatoduodenectomy: a multicentre cohort study and meta-analysis *BJS 2021*

J. V. Groen [1,*], F. J. Smits [2], D. Koole[1], M. G. Besselink [3], O. R. Busch[3], M. den Dulk[4], C. H. J. van Eijck[5], B. Groot Koerkamp[5], E. van der Harst[6], I. H. de Hingh[7,8], T. M. Karsten[9], V. E. de Meijer[10], B. K. Pranger [10], I. Q. Molenaar[2], B. A. Bonsing[1], H. C. van Santvoort[2] and J. S. D. Mieog[1], on behalf of the Dutch Pancreatic Cancer Group

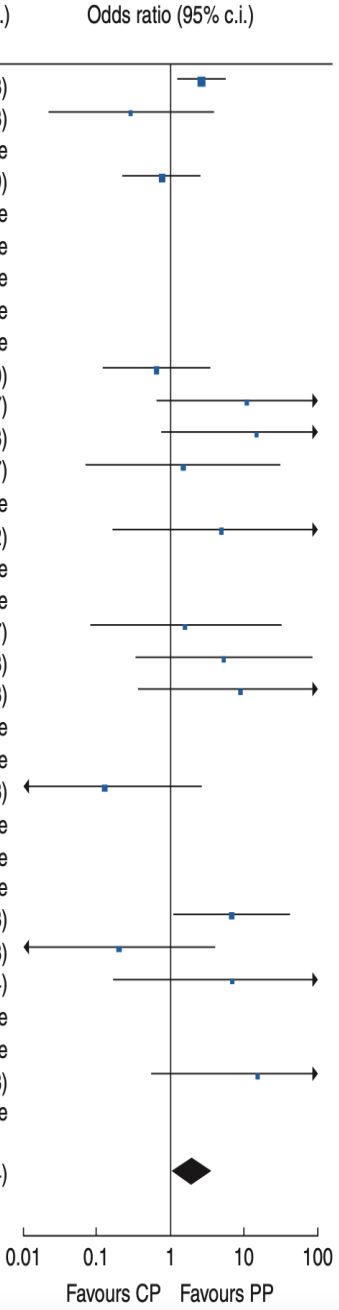
Reoperation for pancreatic fistula: a systematic review of completion pancreatectomy vs. pancreas-preserving-procedures and outcomes *HPB 2025*

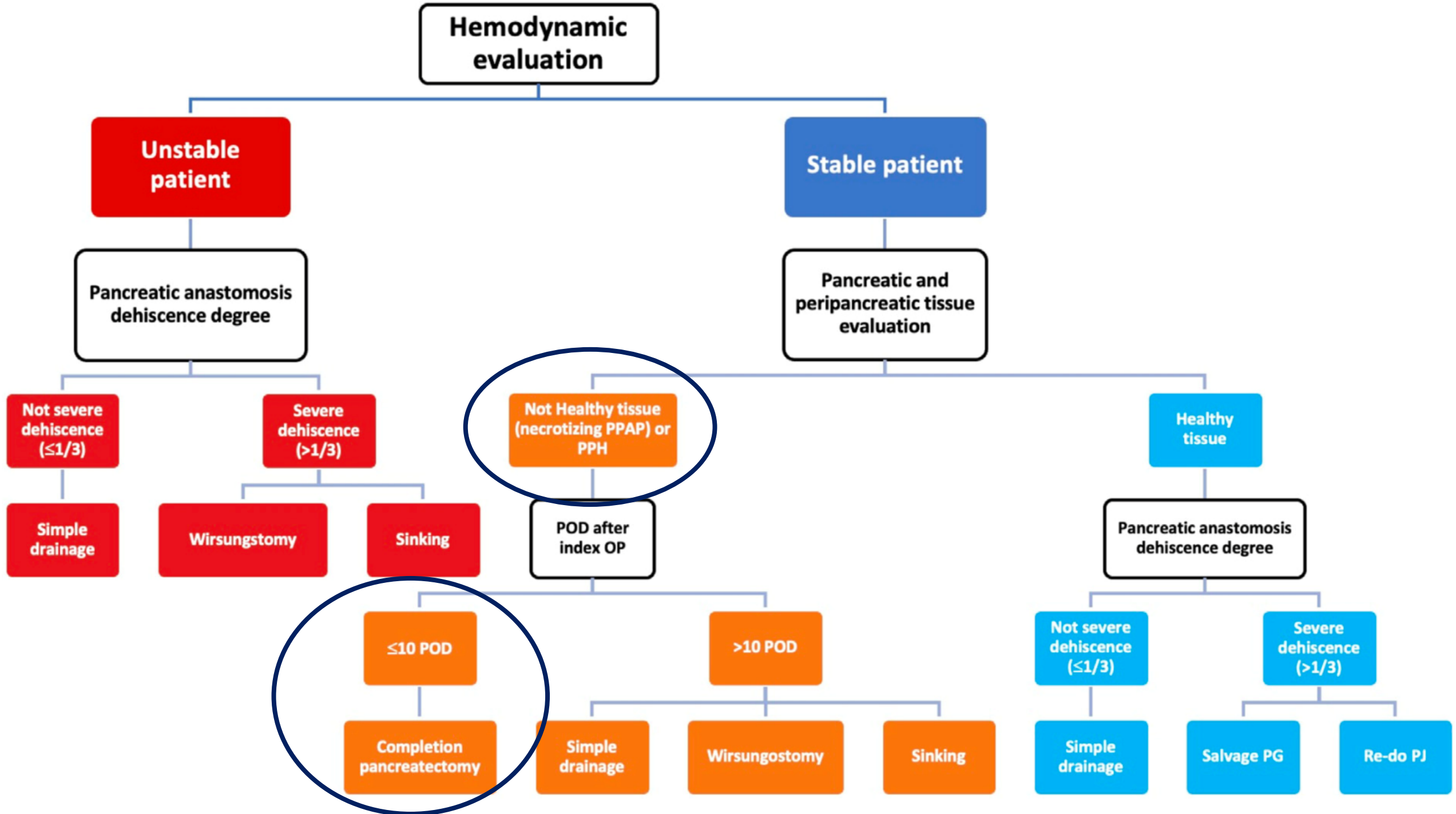
Alessio Marchetti[1,2,*], Gaetano Corvino[1,*], Giampaolo Perri[3], Giovani Marchegiani[3] & Raffaele De Luca[4]

Forest plot of death after initial relaparotomy by surgical strategy for pancreatic fistula: completion pancreatectomy (CP) versus pancreas- preserving (PP) procedure

Study or subgroup	CP events	CP Total	PP events	PP Total	Weight (%)	Odds ratio (95% c.i.)
Groen *et al.* (current article)	20	36	40	126	19.6	2.69 (1.26, 5.73)
Luu *et al.*[18]	7	19	2	3	5.2	0.29 (0.02, 3.83)
Ma *et al.*[19]	0	0	14	50		Not estimable
Wroński *et al.*[20]	8	17	14	26	13.8	0.76 (0.22, 2.59)
Ma *et al.*[21]	0	0	3	10		Not estimable
Horvath *et al.*[22]	0	0	2	13		Not estimable
Nentwich *et al.*[23]	11	20	0	0		Not estimable
Wiltberger *et al.*[24]	0	0	6	13		Not estimable
Almond *et al.*[25]	20	38	0	0		Not estimable
Balzano *et al.*[26]	3	14	5	17	9.9	0.65 (0.13, 3.40)
Paye *et al.*[27]	2	4	1	12	4.5	11.00 (0.65, 187.17)
Ribero *et al.*[28]	10	23	0	9	4.2	14.78 (0.77, 284.03)
Govil *et al.*[29]	1	2	4	10	4.0	1.50 (0.07, 31.57)
Denost *et al.*[30]	0	0	6	21		Not estimable
Xu *et al.*[31]	1	5	0	7	3.3	5.00 (0.17, 150.92)
Kent *et al.*[32]	0	5	0	0		Not estimable
Königsrainer *et al.*[33]	0	0	1	4		Not estimable
Fuks *et al.*[34]	1	2	5	13	4.1	1.60 (0.08, 31.77)
Haddad *et al.*[35]	2	5	1	9	4.7	5.33 (0.34, 82.83)
Bachellier *et al.*[36]	4	8	0	4	3.6	9.00 (0.37.220.93)
Müller *et al.*[37]	9	23	0	0		Not estimable
Tamijmarane *et al.*[38]	13	25	0	0		Not estimable
de Castro *et al.*[39]	0	9	5	18	4.0	0.13 (0.01, 2.63)
Kazanjian *et al.*[40]	0	0	1	3		Not estimable
Gueroult *et al.*[41]	3	8	0	0		Not estimable
Munoz-Bongrand *et al.*[42]	0	0	1	4		Not estimable
Schlitt *et al.*[43]	8	10	7	19	8.8	6.86 (1.12, 41.83)
van Berge Henegouwen *et al.*[44]	0	4	8	23	4.0	0.20 (0.01, 4.23)
Yeh *et al.*[45]	3	3	1	2	2.8	7.00 (0.17, 291.34)
Farley *et al.*[46]	4	16	0	0		Not estimable
Wu *et al.*[47]	0	0	2	12		Not estimable
Cullen *et al.*[48]	5	7	0	3	3.4	15.40 (0.56, 425.53)
Smith *et al.*[49]	7	11	0	0		Not estimable
Total		314		431	100.0	1.99 (1.03, 3.84)
Total events	142		129			

Heterogeneity: $\tau^2 = 0.43$; $\chi^2 = 20.75$, 15 d.f., $P = 0.14$; $I^2 = 28\%$
Test for overall effect: $Z = 2.05$, $P = 0.04$




Hemodynamic evaluation
Unstable patient
Stable patient
Pancreatic anastomosis dehiscence degree
Pancreatic and peripancreatic tissue evaluation
Not severe dehiscence (≤1/3)
Severe dehiscence (>1/3)
Not Healthy tissue (necrotizing PPAP) or PPH
Healthy tissue
Simple drainage
Wirsungstomy
Sinking
POD after index OP
Pancreatic anastomosis dehiscence degree
≤10 POD
>10 POD
Not severe dehiscence (≤1/3)
Severe dehiscence (>1/3)
Completion pancreatectomy
Simple drainage
Wirsungostomy
Sinking
Simple drainage
Salvage PG
Re-do PJ