PANKREAS KANSERİNDE MİNİMAL İNVAZİV CERRAHİ

7. ulusal CERRAHİ ONKOLOJİ KONGRESİ

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Genel Cerrahi Anabilim Dalı

Pankreas Duktal Adenokarsinomu (PDAK)

- Kansere bağlı ölümlerde her iki cinse 4. sırada
- Sistemik onkolojik tedavilerde daha iyi
- %10-18 hasta cerrahi yapılabiliyor
- Erken nüks: % 20-40
- Cerrahi en küratif tedavi

MIPC

Üstünlükleri
- Kan kaybı anlamlı az
- Hastanede kalış süresi az
- Postop ağrı az
- Hızlı iyileşme

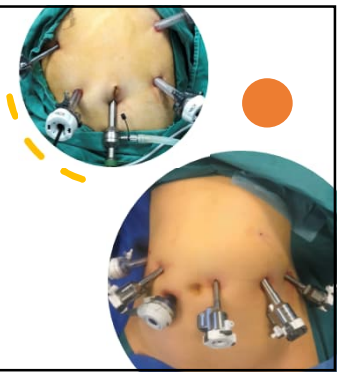
Zorlukları
- Öğrenme eğrisi uzun
- Cerrahi süresi uzun
- POPF (öğrenme eğrisinde yüksek)
- Yüksek Maaliyet

www.cerrahionkoloji2024.org

MİPC-PDAK

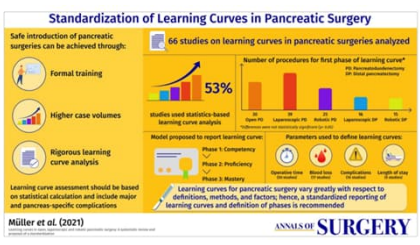
Laparoskopik /Robotik

- Pankreatikoduodenektomi (PD)
- Distal Pankreatektomi (DP)
- Total Pankreatektomi (TP)



MIPD

- Öğrenme eğrisi uzun, zor, karışık
- LPD ve RPD < %10'nun (ABD)
- Robot platformu
- Yapılandırılmış eğitim program ile
- %6.4-% 9.4 (2014-2020)



Outcomes After Minimally-invasive Versus Open Pancreatoduodenectomy

A Pan-European Propensity Score Matched Study

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- 7 Ülke, 14 Merkez
- 730 MIDP
- Yılda > 10 olgu
- Mortalite/ Morbidite açısından fark yok

Conclusions: In the early experience of 14 European centers performing ≥10 MIPDs annually, no differences were found in major morbidity, mortality, and hospital stay between MIPD and OPD. The high rates of POPF and conversion, and the lack of superior outcomes (ie, hospital stay, morbidity) could indicate that more experience and higher annual MIPD volumes are needed.

ANNALS OF SURGERY
2020;271(2):356-363.

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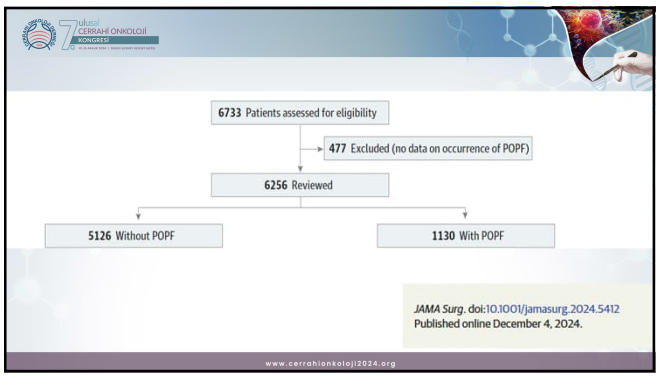
JAMA Surgery | Original Investigation

Effects of Pancreatic Fistula After Minimally Invasive and Open Pancreatoduodenectomy

Caro L. Bruna, MD; Anouk M. L. H. Emmen, MD; Kongyuan Wei, MD, PhD; Robert P. Sutcliffe, MD; Baiyong Shen, MD, PhD; Guiseppe K. Fusai, MD, PhD; Yi-Ming Shyr, MD, PhD; Igor Khatkov, MD, PhD; Steve White, MD, PhD; Leia R. Jones, BSc; Alberto Manzoni, MD, PhD; Mustafa Kerem, MD, PhD; Bas Groot Koerkamp, MD, PhD; Clarissa Ferrari, PhD; Olivier Saint-Marc, MD, PhD; I. Quintus Molenaar, MD, PhD; Claudio Bnà, MD; Safi Dokmak, MD, PhD; Ugo Boggi, MD, PhD; Rong Liu, MD, PhD; Jin-Young Jang, MD, PhD; Marc G. Besselink, MD, PhD; Mohammad Abu Hilal, MD, PhD; for the International Consortium on Minimally Invasive Pancreatic Surgery (I-MIPS)

JAMA Surg. doi:10.1001/jamasurg.2024.5412
Published online December 4, 2024.



JAMA Surg. doi:10.1001/jamasurg.2024.5412
Published online December 4, 2024.

	MIPD	Açık PD	
	POPF (B/C), N= 336/558	POPF (B/C) N=336/572	P
Sekonder komplikasyonlar	129 (% 55)	95 (% 36)	<0.001
Postpankreatektomi kanama	71 (%21)	22 (% 8)	<0.001
Hastanede kalış (gün)	27 (18-38)	22 (15-30)	<0.001
Re-operasyon	67 (%21)	21 (%7)	<0.001

JAMA Surg. doi:10.1001/jamasurg.2024.5412
Published online December 4, 2024.

	RPD	LPD	
	POPF (B/C), N= 225	POPF (B/C) N=111	P
DGE B/C	51 (%22.8)	14 (% 12.6)	<0.001
Re-operasyon	37 (17.5)	31 (27.9)	<0.001

CONCLUSIONS AND RELEVANCE This study found that for patients after MIPD, the presence of POPF is more frequently associated with other clinically relevant complications compared with OPD. This underscores the importance of perioperative mitigation strategies for POPF and the resulting PPH in high-risk patients.

JAMA Surg. doi:10.1001/jamasurg.2024.5412
Published online December 4, 2024.

LPD vs OPD

Randomize Kontrollü Çalışmalar

Çalışma Adı	Hasta Sayısı	
LEOPARD-2	100	Laparoskopik ve açık cerrahiler eşit onkolojik sonuçlar, Ancak öğrenme eğrisi dikkat edilmelidir.
PORTAL	150	Robotik cerrahinin güvenliği ve etkinliği değerlendirildi, sonuçlar uzun vadede olumlu.
PLOT	80	Laparoskopik yaklaşımda daha az kan kaybı ve kısa iyileşme zamanı Onkolojik sonuçlar açığa benzer

J Robotik Surg, 2024:18-85

RPD vs OPD

Table 2 Studies comparing oncologic outcomes for RPD in reference to OPD

Study	Year	Study type	PDAC patients	R0	LNR	OS (months)	Overall POPF*	CR-POPF*
Chalikonda et al.	2012	Single-institution (PM)	14 LRPD vs 14 OPD	(100% vs 87%, $p=0.002$)	(13.2 vs 11.76, $p=0.25$)	–	14.38% of LRPD patients	14.38% of LRPD patients
Zureikat et al.	2016	Multi-institution	70 RPD vs 452 OPD	(50% vs 69%, $p=0.002$)	(27.5 vs 19, $p<0.001$)	–	–	(13.74% vs 9.08%, $p=0.04$
Cai et al.	2020	Single-institution	226 RPD vs 231 OPD	–	–	–	(20.4% vs 23.5%, $p=0.283$)	(6.7% vs 15.8%, $p<0.001$)
Baimas-George et al.	2020	Single-institution (PM)	38 RPD vs 38 OPD	(57.9% vs 55.3%, $p=0.817$)	(21.5 vs 13.5, $p=0.0036$)	(30.4 vs 23.0, $p=0.1105$)	(10.5% vs 13.2%, $p=0.727$)	–
Nassour et al.	2020	NCDB	626	(77% vs 78%, $p=0.052$)	(22 vs 17, $p<0.001$)	(22.0 vs 21.8, $p=0.755$)	–	–
Vining et al.	2020	ACS-NSQIP	271 RPD vs 6,885 OPD	–	–	–	(14.7% vs 18.1%, $p=0.0534$)	(11.9% vs 15.6%, $p=0.026$)

*: Among PDAC and non-PDAC patients, -: data unavailable

J Robotik Surg, 2024:18-85

RPD vs LPD

Study	Year	Study type	PDAC patients	R0	LNR	OS (months)	Overall POPF*	CR-POPF*
Torphy et al.	2019	NCDB	549 RPD vs 3,205 LPD	(83.4% vs 82.0%, $p=0.755$)	(51.9% vs 47.5%, $p=0.176$)*	–	–	–
Vining et al.	2020	ACS-NSQIP	271 RPD vs 216 LPD	–	–	–	(14.7% vs 17.5%, $p=0.2638$)	(11.9% vs 14.0%, $p=0.3550$)
Chopra et al.	2021	Single-institution	146	–	–	↔	–	↔

*: amone PDAC and non-PDAC patients, -: data unavailable

MIDP

- Daha fazla tecrübe ve kanıt var
- Vasküler rezeksiyon/RAMPS
- Erken dönem sonuçları daha iyi
- RDP'de açığa geçme oranı daha düşük

LDP vs ODP

Study	Year	Study type	PDAC patients	R0	LNR	OS (months)	Overall POPF*	CR-POPF*
Kooby et al.	2010	Multi-institution (PM)	23 LDP vs 189 ODP	(74% vs 66%, $p=0.61$)	(14.0 vs 12.3, $p=0.41$)	(16 vs 16, $p=0.71$)	–	–
Shin et al.	2015	Single-institution (PM)	70 LDP vs 80 ODP	(75.7% vs 83.8%, $p=0.22$)	(12 vs 10, $p=0.13$)	(33.4 vs 29.1, $p=0.25$)	(18.6% vs 10.0%, $p=0.13$)	–
Zhang et al.	2015	Single-institution	17 LDP vs 34 ODP	(94.1% vs 85.3%, $p=0.650$)	(9 vs 8, $p=0.534$)	(14.0 vs 14.0, $p=0.802$)	(52.94% vs 47.05%, $p=0.48$)	–
Lee et al.	2015	Single-institution	19 LDP vs 249 ODP	(100% vs 88%, $p=0.21$)	(10.4 vs 15.4, $p=0.04$)	-	(8% vs 12%, $p=0.45$)	(6% vs 9%, $p=0.45$)
Xourafas et al.	2017	ACS-NSQIP	694 LDP vs 921 ODP				(18% vs 17%, $p=0.6484$)	
LAPOP (Björnsson et al.)	2020	RCT	7 LDP vs 3 ODP	66.66% of LDP patients	15 in LDP patients	–	–	(31.03% vs 37.93%, $p=0.581$)
DIPLOMA (van Hilst et al.)	2019	Prospective (PM)	356 MIDP (240 LDP & 16 RDP) vs 856 ODP	(67% vs 58%, $p=0.019$)	(14 vs 22, $p<0.001$)	(28 vs 31, $p=0.774$)	–	(19% vs 20%, $p=0.921$)
LEOPARD-1 Trial (de Rooji et al.)	2019	RCT	13 MIDP vs 10 ODP	(53.84% vs 40%, $p=0.51$)	(11 vs 15, $p=0.71$)	–	–	(39% vs 23%, $p=0.07$)

RDP vs ODP

Study	Year	Study type	PDAC patients	R0	LNR	OS (months)	Overall POPF*	CR-POPF*
Lee et al.	2015	Single-institution	4 RDP vs 249 ODP	(100% vs 88%, $p=0.21$)	(12 vs 15.4, $p=0.04$)	–	(8% vs 12%, $p=0.45$)	(5% vs 9%, $p=0.45$)
Nassour et al.	2020	NCDB	2,718 (332 RDP)	(17 vs 15, $p=0.002$)	(85% vs 81%, $p=0.293$)	(35.3 vs 24.9, $p=0.001$)	–	–
DIPLOMA (van Hilst et al.)	2019	Prospective (PM)	356 MIDP (240 LDP & 16 RDP) vs 856 ODP	(67% vs 58%, $p=0.019$)	(14 vs 22, $p<0.001$)	(28 vs 31, $p=0.774$)	–	(19% vs 20%, $p=0.921$)
LEOPARD-1 Trial (de Rooji et al.)	2019	RCT	13 MIDP vs 10 ODP	(53.84% vs 40%, $p=0.51$)	(11 vs 15, $p=0.71$)	–	–	(39% vs 23%, $p=0.07$)

*: Among PDAC and non-PDAC patients, -: data unavailable

RDP vs LDP

Study	Year	Study type	PDAC patients	R0	LNR	OS (months)	Overall POPF*	CR-POPF*
Lee et al.	2015	Single-institution	4 RDP vs 19 LDP	(100% vs 100%, $p=0.21$)	(12 vs 10.4, $p=0.04$)	–	(8% vs 8%, $p=0.45$)	(5% vs 6%, $p=0.45$)
Zhou et al.	2016	Meta-analysis	32 RDP vs 40 LDP	OR=6.55, $p=0.10$	OR=1.94, $p=0.22$	–	OR=0.92, $p=0.71$	–

Total Pankreatektomi

- Multisentrik (%6) PDAK
- Yüksek Risk-POPF

Outcomes After Minimally Invasive Versus Open Total Pancreatectomy

A Pan-European Propensity Score Matched Study

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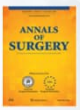
- 70/ 99 MITP
- 70/ 262 OTP
- Düşük major morbidite: %17 vs %31 (p<0.001)
- Mortalite ve Hastanede kalış açısından fark yok.
- Sağkalım farklı değil



Ann Surg ;277;2,: 313-20

Impact of Shifting from Laparoscopic to Robotic Surgery during 600 Minimally Invasive Pancreatic and Liver resections

Use of MIS-HPB resections increased from 30% to 45% (2014 - 2021)
Overall conversion rate: 4.3%

163 pancreatoduodenectomy (111 robotic)
128 distal pancreatectomy

198 laparoscopic liver resections
111 robotic liver resections

Implementation of robotic surgery was associated with:

Pancreatoduodenectomy	Liver
Reduced operation time (450 min to 361 min; P<0.001)	Less overall complications (24.7% vs 10.8%; P=0.003)
Reduced blood loss (350 ml to 200 ml; P<0.001)	Shorter hospital stay (4 vs 3 days; P<0.001)
Higher lymph node retrieval (11 vs 14, P=0.016)	

Emmen, Görgec et al. Surgical Endoscopy, September 2022

Sonuç

Pankreas Kanserinde MI Cerrahi

Kısa Dönem Onkolojik Sonuçlar

Açık cerrahiye eşit veya üstün

Uzun Dönem Onkolojik Sonuçlar

Veriler sınırlı
Onkolojik açıdan yetersiz değil
Daha fazla çalışmaya ihtiyaç var

16th Biennial Congress of the European-African Hepato-Pancreato-Biliary Association
Dublin, Ireland | 10 - 12 June 2025

17. TÜRK HEPATO PANKREATO BİLİER CERRAHİ KONGRESİ

TÜRK HEPATO PANKREATO BİLİER CERRAHİ DERNEĞİ

8. HEPATO PANKREATO BİLİER CERRAHİ HEMŞİRELİĞİ KONGRESİ

29 Ekim - **01** Kasım **2025**

Seginus Otel ve Kongre Merkezi, Antalya