



Paul Sugarbaker

HIPEC, pubMed 4 nisan 2012

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☐ [Malignant ascites: pathophysiology and treatment.](#)

1. Cavazzoni E, Bugiantella W, Graziosi L, Franceschini MS, Donini A.
Int J Clin Oncol. 2012 Mar 31. [Epub ahead of print]
PMID: 22460778 [PubMed - as supplied by publisher]
[Related citations](#)

☐ [Anesthetic Management and Renal Function in Pediatric Patients Undergoing Cytoreductive Surgery with Continuous Hyperthermic Intraperitoneal Chemotherapy \(HIPEC\) with Cisplatin.](#)

2. Owusu-Agyemang P, Arunkumar R, Green H, Hurst D, Landoski K, Hayes-Jordan A.
Ann Surg Oncol. 2012 Mar 27. [Epub ahead of print]
PMID: 22451231 [PubMed - as supplied by publisher]
[Related citations](#)

☐ [Patient Rated Outcomes and Survivorship Following Cytoreductive Surgery Plus Hyperthermic Intraperitoneal Chemotherapy \(CS + HIPEC\).](#)

3.

Giriş

- GIS kanserlerinin pek çoğunda peritoneal karsinomatoz olur
- Bu olguların çoğu 5-6 ay içinde ölür
- Gelenkesel olarak karsinomatozun tedavisi palyasyon hedeflidir
- Bazı GIS kanserlerinde SRC ve HİPEK uygulaması ile daha başarılı sonuçlara ulaşılabilmektedir
- SRC +HİPEK yüksek mortalite ve morbiditeye sahip
- Pahalı, zaman alıcı
- Prospektif çalışmalar çok fazla değil

HiPEK rasyoneli

IP kemoterapi:

- Peritoneal plasma bariyeri var
- Yüksek dozda ilaç uygulaması yapılabilir
- Sitoredüksiyon sonrası yapıldığında daha etkili
- Sistemik resorpsiyonu sınırlı
- Hipertermi
 - İlaç penetrasyonunu artırır
 - Sitotoksiktir

Kemoterapi ilaçları

Table 3. Types of Drugs and Regimens Used for Hyperthermic Intraperitoneal Chemotherapy and Early Postoperative Intraperitoneal Chemotherapy

HIPEC (1154 procedures; 86.4%)

1. Mitomycin C-based regimens

Mitomycin 30-50 mg/m² with or without cisplatin
50-100 mg/m² delivered over 60-120 min at 41-42.5°C

2. Oxaliplatin-based regimens

Oxaliplatin 360-460 mg/m² with or without irinotecan
100-200 mg/m² with or without intravenous 5-fluorouracil
and leucovorin delivered over 30 min at 43°C

EPIC (190 procedures; 13.6%)

Abdominal cavity filled at the end of surgery with 1 L/m²

Ringer lactate

EPIC lasted 5 days (Days 1-5), drains clamped at 23 h/24 h

Day 1, Mitomycin C 10 mg/m²

Days 2-5, 5-fluorouracil 600 mg/m²

HIPEC indicates hyperthermic intraperitoneal chemotherapy; EPIC, early postoperative intraperitoneal chemotherapy.

Parietal peritonektomi ve sitoredüksiyon aşamaları

- Orta hat laparotomi
 - Omentektomi ve splenktomi
 - Bütün ince barsak üzerindeki tümör depositlerinin çıkarılması
 - Bütün kalın barsağın taranması ve tümörlerin çıkarılması
 - Pelvik diseksiyon
- Sol subdiafragmatik peritonektomi
- Falsiform ligamentin çıkarılması
 - Gastrohepatik omentum ve küçük omentum dokusunun çıkarılması
 - Karaciğerin mobilizasyonu
 - Porta hepatisin temizlenmesi

SRC+HIPEK- endikasyon alanları

- Peritoneal mesothelioma
- Pseudomyxoma peritonei
- Appendik kanserine ikincil gelişen peritoneal karsinomatoz
- Kolorektal kanser
- Over tümörlerinde

teknik

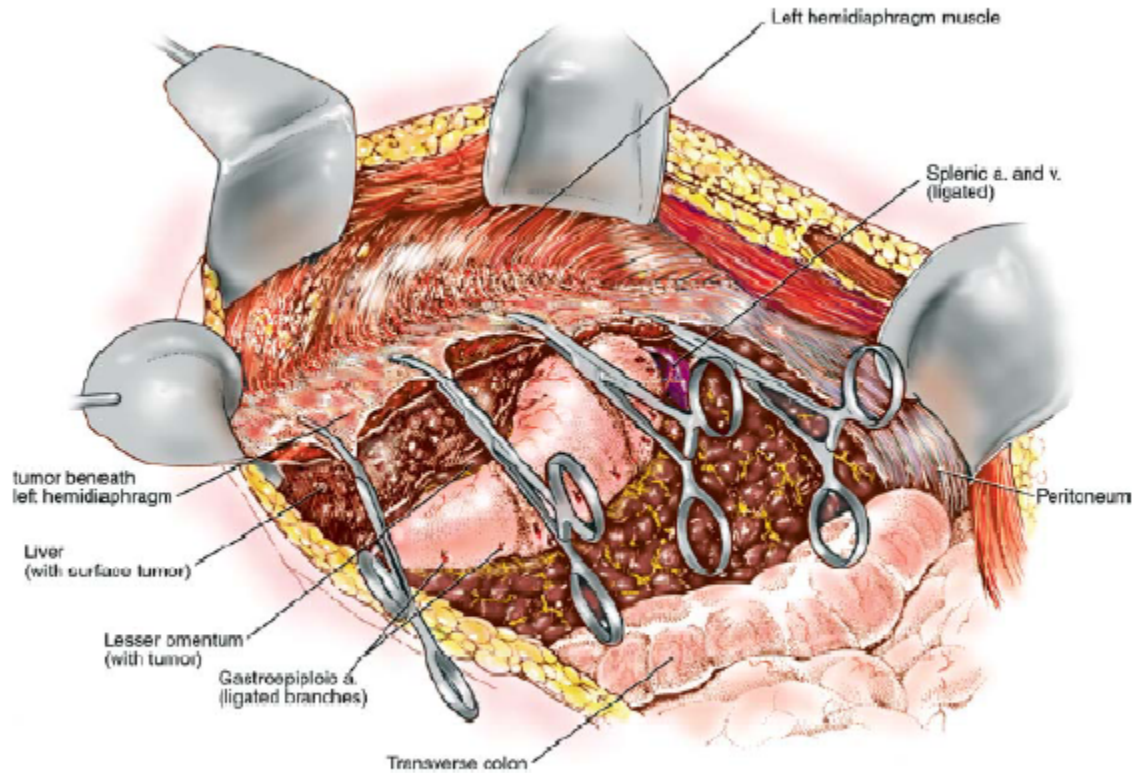
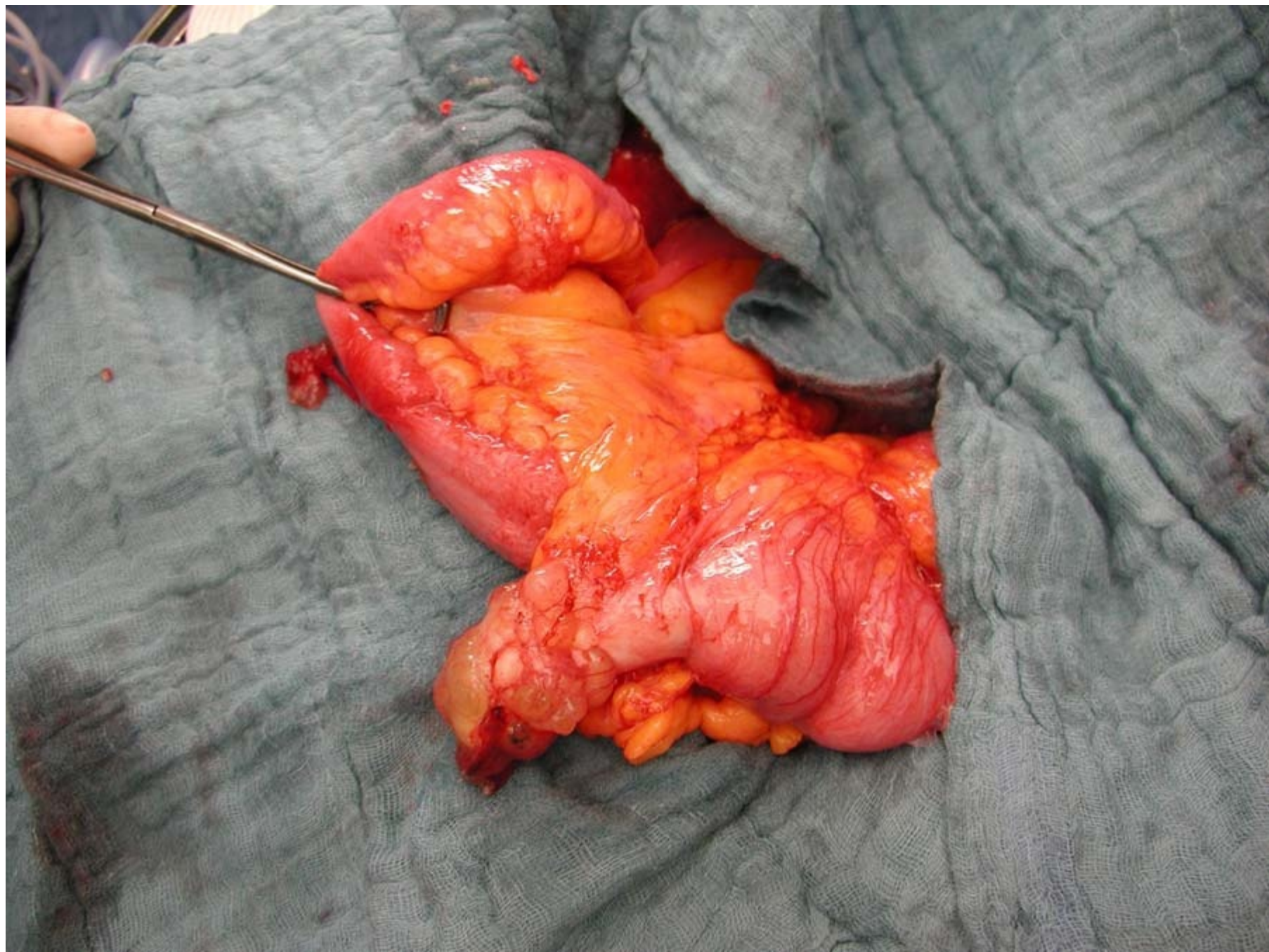
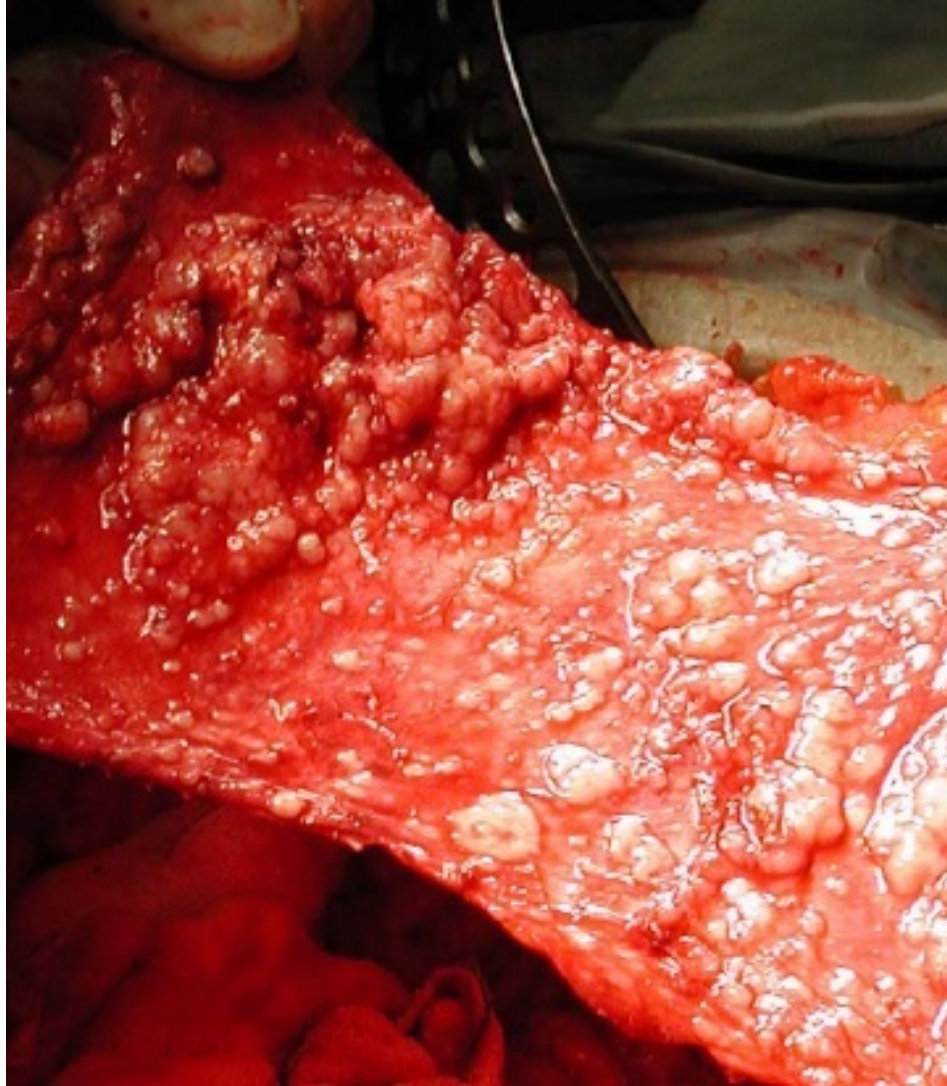


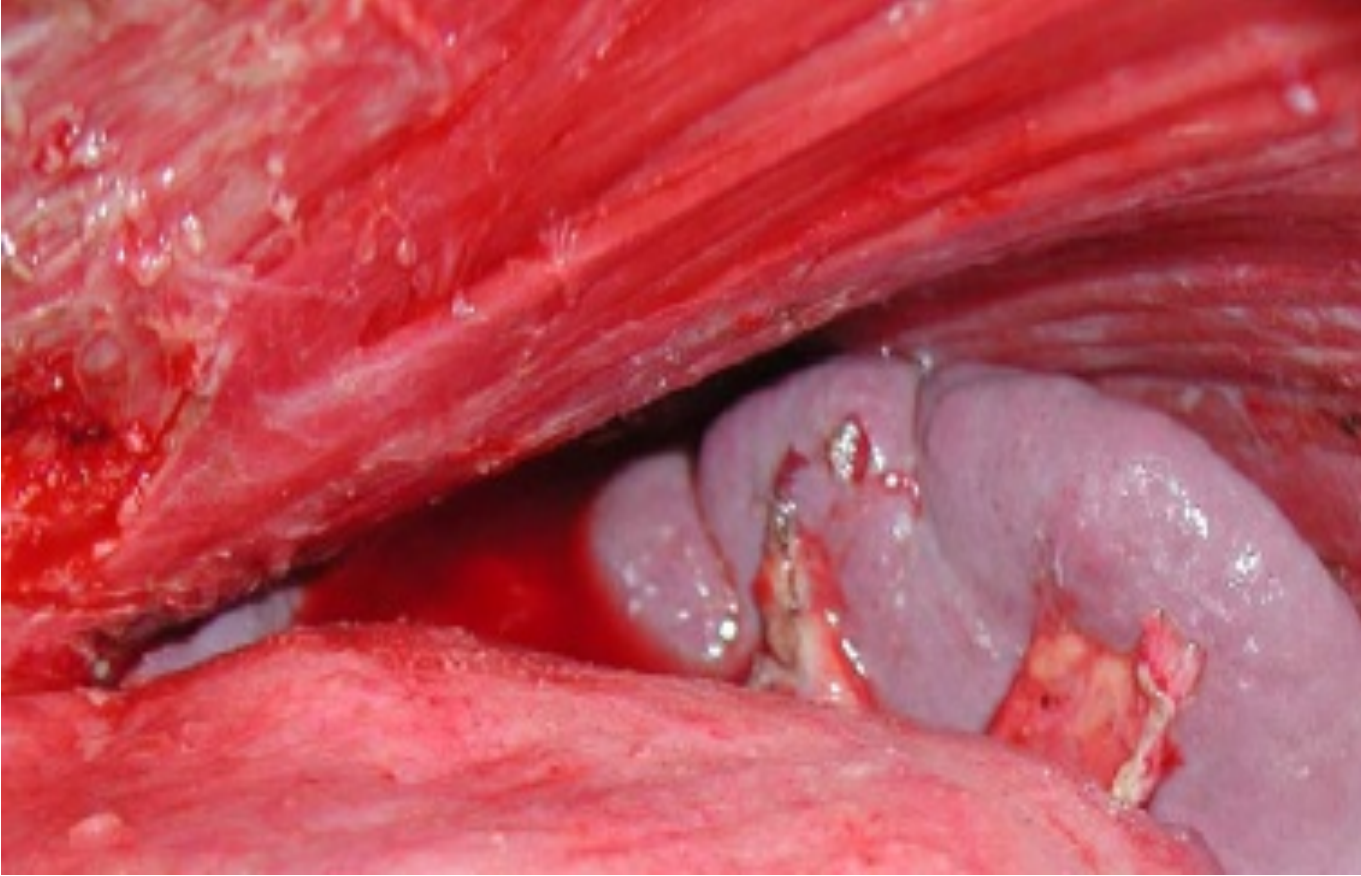
Fig. 6. Left subphrenic peritonectomy.



teknik



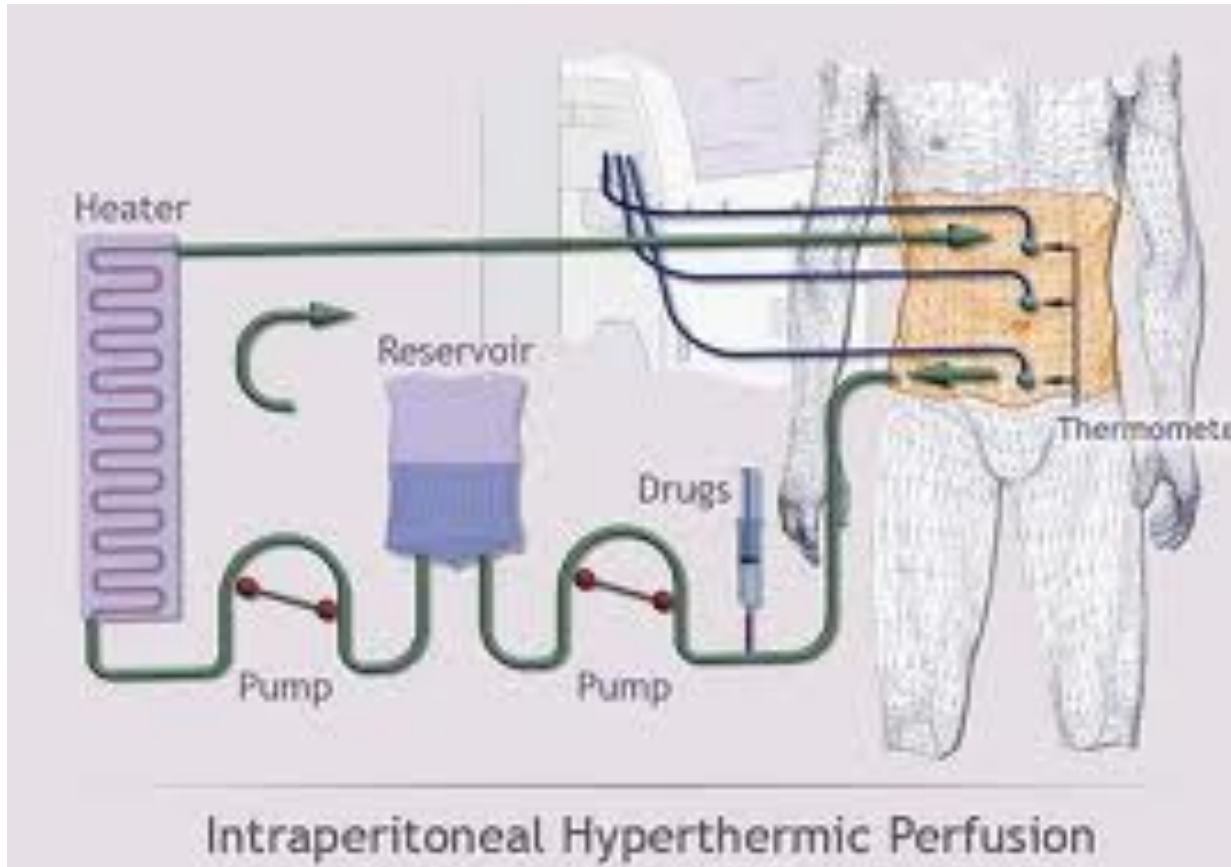
teknik



teknik



sistem



HIPEK olgularının dağılımı

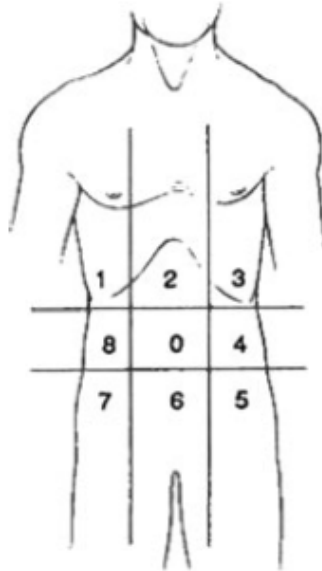
Table 1. Origin of Carcinomatosis in Patients Who Underwent Cytoreductive Surgery Combined With Perioperative Intraperitoneal Chemotherapy

Etiology	No. of Patients	%
Colorectal cancer	523	40.5
Pseudomyxoma peritonei	301	23.3
Gastric cancer	159	12.3
Peritoneal mesothelioma	88	6.8
Appendiceal adenocarcinoma	50	3.9
Small bowel adenocarcinoma	45	3.5
Primary peritoneal serous carcinoma	30	2.3
Peritoneal sarcomatosis	28	2.2
Others	66	5.1
Uterine adenocarcinoma	13	
Unknown primary adenocarcinoma	8	
Biliary	7	
Small bowel carcinoid	7	
Urachal fold	4	
Uterine epidermoid carcinoma	4	
Appendiceal carcinoid	3	
Desmoplastic tumor (small round cell)	3	
Adrenal	3	
GIST	3	
Hepatocellular carcinoma	2	
Kidney	2	
Breast	2	
Malignant teratoma	2	
Bladder	1	
Pheochromocytoma	1	
Esophagus	1	
Total	1290	

GIST indicates gastrointestinal stromal tumor.

peritoneal kanser indeksi (Sugarbaker)

Peritoneal Cancer Index



Regions

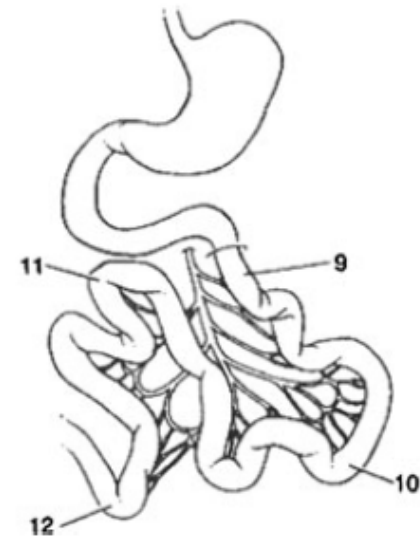
- 0 Central
- 1 Right Upper
- 2 Epigastrium
- 3 Left Upper
- 4 Left Flank
- 5 Left Lower
- 6 Pelvis
- 7 Right Lower
- 8 Right Flank
- 9 Upper Jejunum
- 10 Lower Jejunum
- 11 Upper Ileum
- 12 Lower Ileum

Lesion Size

0	Central	_____
1	Right Upper	_____
2	Epigastrium	_____
3	Left Upper	_____
4	Left Flank	_____
5	Left Lower	_____
6	Pelvis	_____
7	Right Lower	_____
8	Right Flank	_____
9	Upper Jejunum	_____
10	Lower Jejunum	_____
11	Upper Ileum	_____
12	Lower Ileum	_____

Lesion Size Score

- LS 0 No tumor seen
- LS 1 Tumor up to 0.5 cm
- LS 2 Tumor up to 5.0 cm
- LS 3 Tumor > 5.0 cm or confluence



PCI

--

Peritoneal karsinomatoz bölgeleri

TABLE 1. *Distribution over regions*

	Frequency involved
Pelvis	46
Ileocecal	37
Omentum and colon transverse	44
Small bowel	43
Subhepatic	24
Subphrenic left	18
Subphrenic right	25

TABLE 2. *Distribution of residual tumor after cytoreduction*

	Frequency involved
Pelvis	1
Ileocecal	5
Omentum and colon transverse	11
Small bowel	27
Subhepatic	16
Subphrenic left	9
Subphrenic right	15

peritoneal kanser indeksi

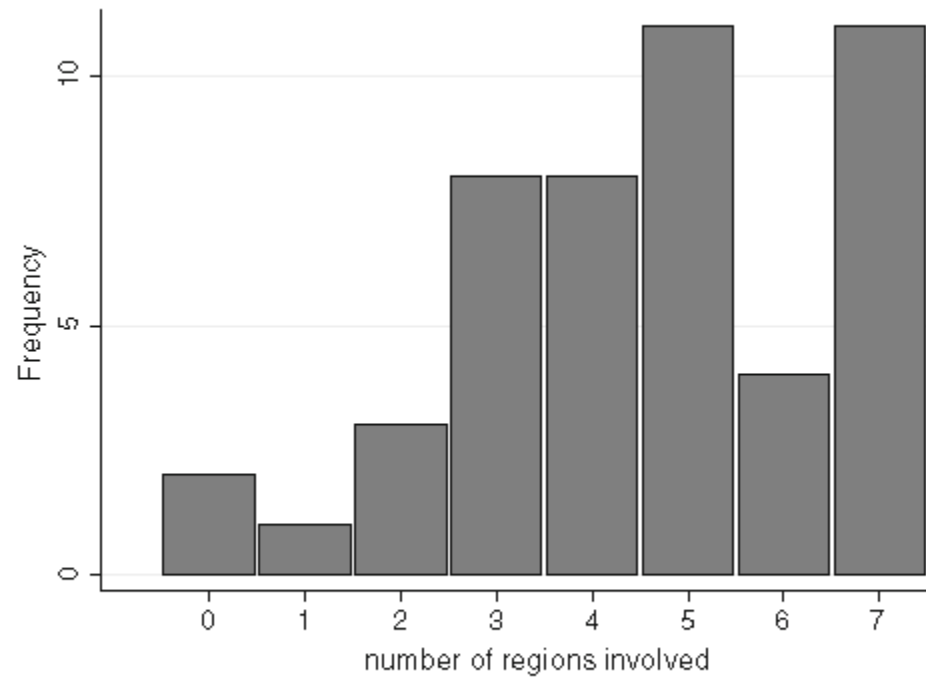


FIG. 1. Distribution of the number of regions involved.

Peritoneal karsinomatöz ciddiye

- En iyi intraoperatif değeriendirilir
- Gilly klasifikasyonu:
 - evre 0: pozitif peritoneal sitoloji
 - evre I: malign tumor nodülleri: <5 mm'den küçük ve karında bir bölgede
 - evre II: karında yaygın <5 mm'den küçük
 - evre III: tümör nodülleri: 5 mm - 2 cm
 - evre IV: büyük tümör depositleri: >2 cm

Sitoredüksiyon sınıflaması

- Sitoredüksiyon-0=Makroskopik residüel kanser yok
- Sitoredüksiyon-1= Kalan nodüller <2.5 mm
- Sitoredüksiyon -2= Kalan nodüller >2.5 mm

HiPEK komplikasyonları

Table 4. Details of Major Complications (Grade 3/4 According to the National Cancer Institute Common Toxicity Criteria)

Type of Complication	No. of Patients	%
Grade 3-4 complications	422	33.6
Reoperations	178	14
Neutropenia	161	13.3
Digestive fistula	123	9.7
Pneumonia	115	9.1
Postoperative bleeding	95	7.7
Intra-abdominal abscess	90	7
Systemic sepsis	32	2.3
Bowel obstruction	20	1.5
Renal insufficiency	14	1

Kontrendikasyonlar

- Ekstra-abdominal metastaz varlığı
- Retroperitoneal lenf nodu varlığı
- Karaciğer metastazları

HİPEK limitasyonlar

- Lokal toksisite-kanama (oxaliplatin)
- Anastomoz kaçaklarında artış
- İleus
- Sistemik toksik bulgular
- Böbrek ve kemik iliği sorunları
- Düşük doku penetrasyonu
- Kontakt süresi kısa

Hasta seçimi

1. Fizik olarak agresif tedaviyi kaldırabilecek hasta
 2. Tamamen rezektabl tümör olması
- Sitoredüktif cerrahi ve sonrasında HİPEK genç genel durumu iyi ve tümörlerin tamamen çıkarılabildiği olgularda yapılmalıdır.

Önemli Yayınlar

8-Year Follow-up of Randomized Trial: Cytoreduction and Hyperthermic Intraperitoneal Chemotherapy Versus Systemic Chemotherapy in Patients with Peritoneal Carcinomatosis of Colorectal Cancer

Vic J. Verwaal, MD, PhD,¹ Sjoerd Bruin, MD,¹ Henk Boot, MD, PhD,² Gooike van Slooten, MD,¹ and Harm van Tinteren, ScM³

¹Department of Surgery, The Netherlands Cancer Institute, Plesmanlaan 121, 1066 CX Amsterdam, The Netherlands

²Department of Gastroenterology, The Netherlands Cancer Institute, Amsterdam, The Netherlands

³Statistical Department, The Netherlands Cancer Institute, Amsterdam, The Netherlands

**“Randomized Trial of Cytoreduction and
Hyperthermic Intraperitoneal Chemotherapy
Versus Systemic Chemotherapy and Palliative
Surgery in Patients With Peritoneal
Carcinomatosis of Colorectal Cancer’ ’**

RKÇ- uzun takip

- Sistemik kemoterapi +SRC vs Sistemik kemoterapi+ SRC+ HİPEK
- Sonuç: takip 8 yıl (72– 115 ay).
- Sistemik kemo+ SRC= n: 4, (2 hastalıklı, 2 hastalıksız);
‘HİPEK’ = n: 5 (2 hastalıklı 3 hastalıksız).

Progresyonsuz sağ kalım

Sistemik kemo+ SRC= 7.7
HİPEK+ SRC= 12.6 ay (P = 0.020).

Hastalık spesifik sağ kalım

Sistemik kemo+SRC= 12.6 ay
HİPEK+ SRC= 22.2 ay (P = 0.028).

5-yıllık sağ kalım 45% (R1 rezeksiyon).

Sitoredüksiyondan sonra uygulanan HİPEK kolorektal peritoneal karsinomatozda uzun dönem sağ kalımı artırır

Ann of Surg Oncol, 2008

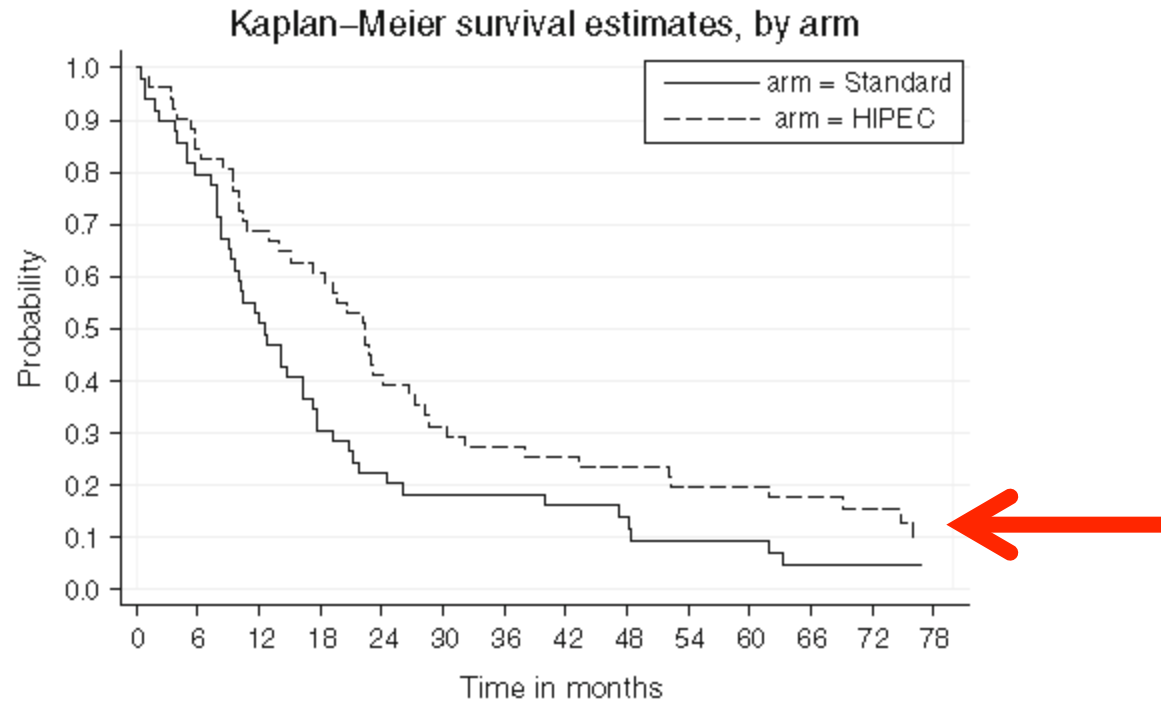


FIG. 2. Disease-specific survival of patients treated for peritoneal carcinomatosis, divided by treatment.

Tam sito redüksiyonda sağ kalım daha iyi

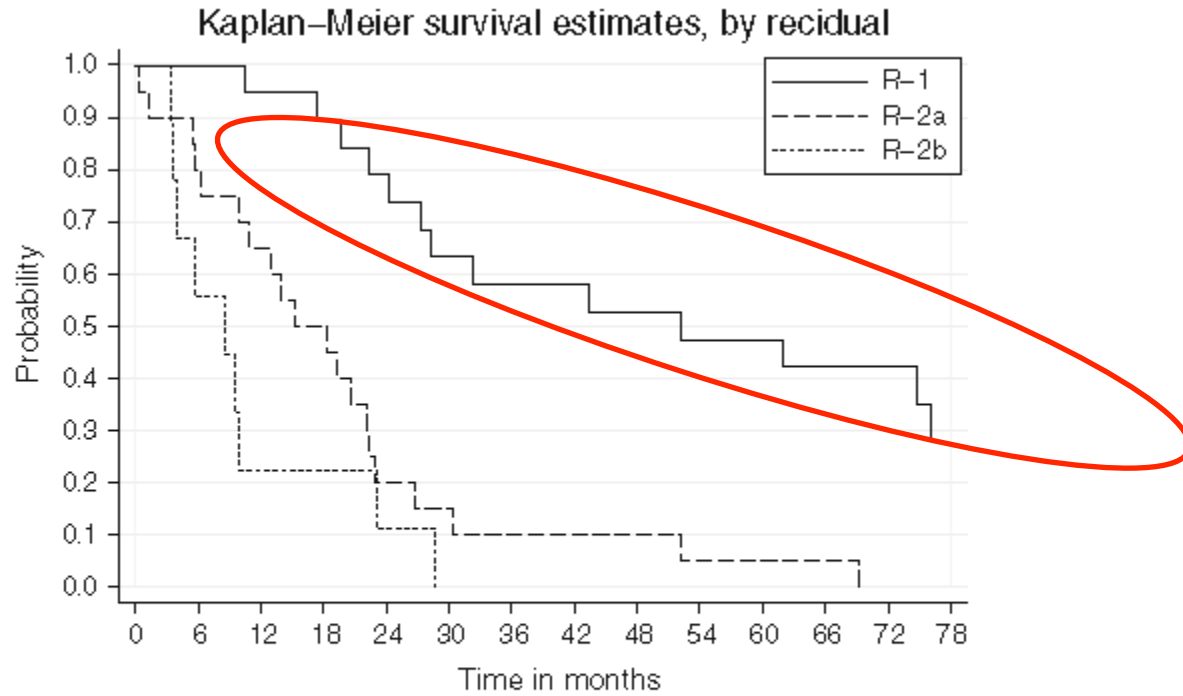


FIG. 3. Long-term results of cytoreduction followed by HIPEC in peritoneal carcinomatosis, divided to completeness of cytoreduction.

Original Article

Toward Curative Treatment of Peritoneal Carcinomatosis From Nonovarian Origin by Cytoreductive Surgery Combined With Perioperative Intraperitoneal Chemotherapy

A Multi-Institutional Study of 1 Cancer December 15, 2010

Olivier Glehen, MD, PhD¹; François N. Gilly, MD, PhD¹; Florent Boutitie²; Jean M. Bereder, MD³; François Quenet, MD⁴; Lucas Sideris, MD⁵; Baudouin Mansvelt, MD⁶; Gérard Lorimier, MD⁷; Simon Msika, MD, PhD⁸; Dominique Elias, MD, PhD⁹; and the French Surgical Association

Cancer December 15, 2010

Cancer, 2010

- Retrospektif 25 merkez (Fransız hastaneleri)
- Sonuç parametreleri: toksite ve prognoz
- n: 1290
- 1989 -2007
- HİPEK: 1154

Cancer, 2010

- Sağ kalıma etki eden faktörler:
 - Yaş,
 - PK yaygınlığı,
 - Kurumsal deneyim,
 - Tam sitoredüksiyon,
 - Lenf nodu varlığı.
- Genel sağ kalım= 34 ay
 - Kolon= 30 ay
 - Peritoneal mezotelyoma=41 ay
 - Appendiks adenokanseri= 77

Hastalığa özel sağkalımlar

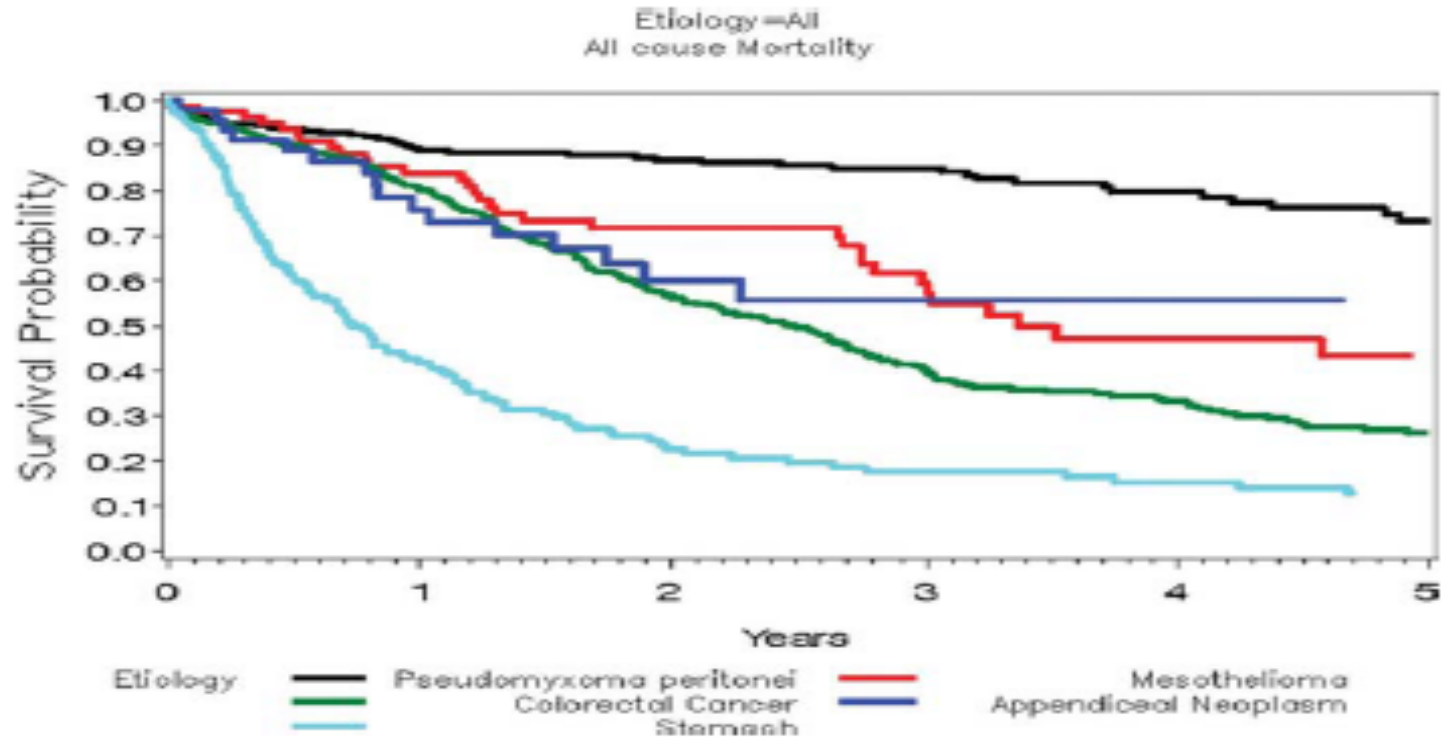


Figure 3. Overall survival rates are illustrated for patients with colorectal peritoneal carcinomatosis (PC), pseudomyxoma peritonei, peritoneal mesothelioma, gastric PC, and PC from appendiceal adenocarcinoma.

Kurumsal deneyim önemli

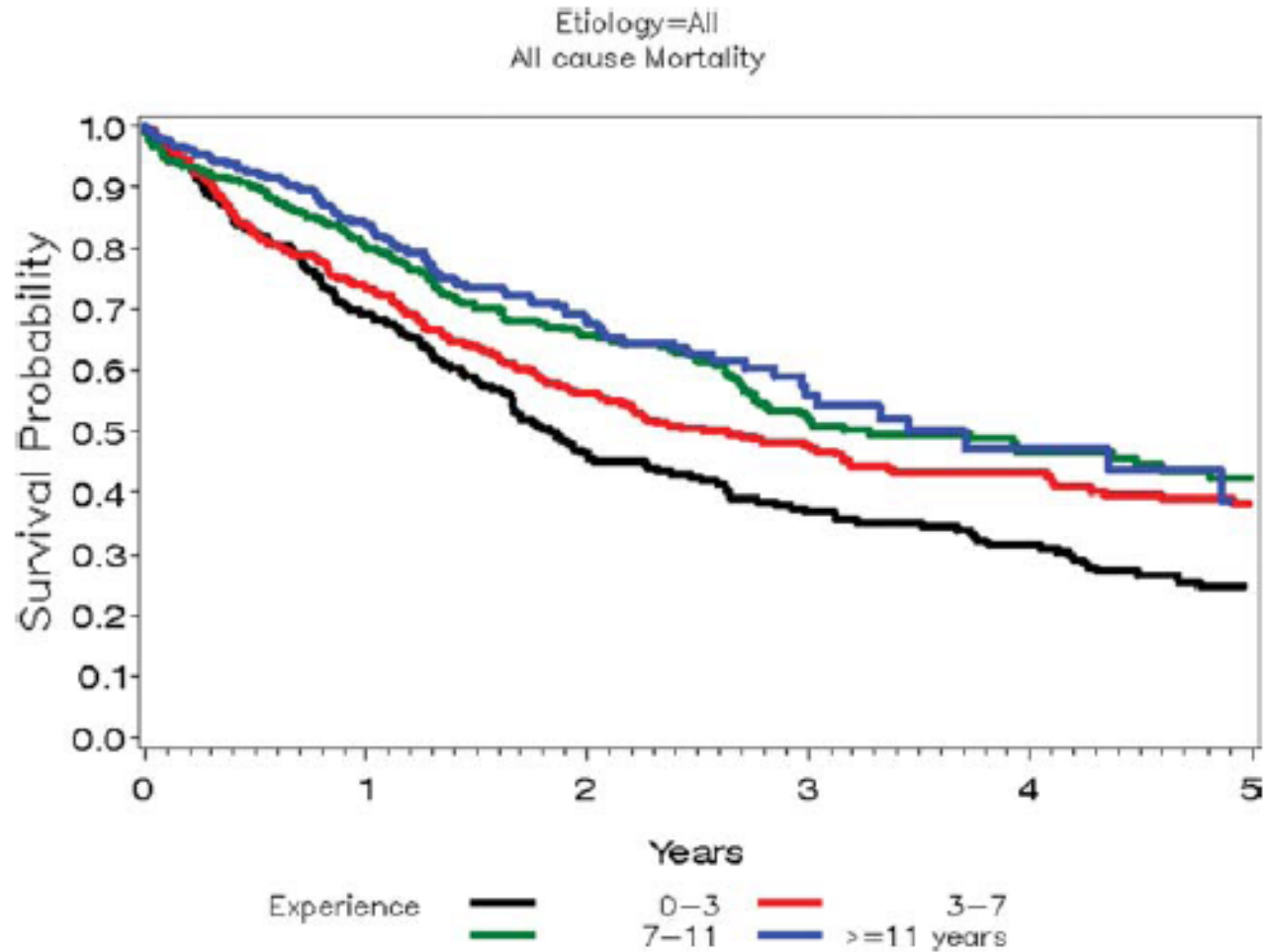


Figure 4. Overall survival is illustrated according to the extent of institutional experience.

Sitoredüksiyon ne kadar başarılıysa sağ kalım oranları o kadar iyi

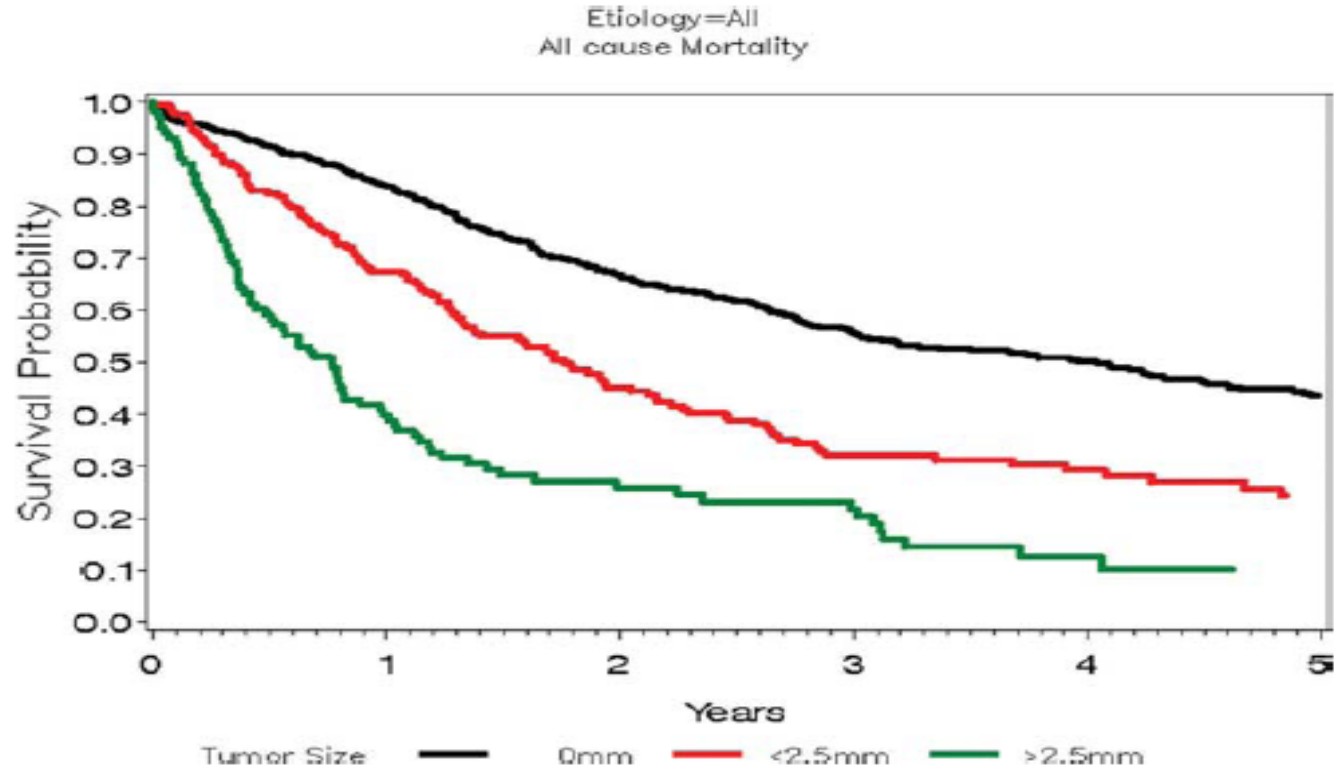


Figure 6. Overall survival is illustrated according to the completeness of cytoreduction achieved.

Sağ kalıma etki eden faktörler

Table 7. Multivariate Analysis of Prognostic Factors for Overall Survival in 1290 Patients With Peritoneal Carcinomatosis of Digestive or Primary Origin Who Underwent Cytoreductive Surgery Combined With Perioperative Intraperitoneal Chemotherapy

Variable	RR	95% CI	P	
Colorectal cancer	1.000	—	—	
Pseudomyxoma peritonei	0.157	0.104-0.237	<.0001	←
Peritoneal mesothelioma	0.383	0.222-0.661	.0006	←
Primary peritoneal serous carcinoma	0.450	0.141-1.438	.1777	
Appendiceal adenocarcinoma	0.589	0.331-1.048	.0716	
Gastric cancer	1.870	1.343-2.603	.0002	←
Small bowel adenocarcinoma	0.659	0.389-1.116	.1211	
Peritoneal sarcomatosis	1.608	0.963-2.684	.0695	
Other etiology	0.746	0.462-1.205	.2313	
PCI ^a	1.043	1.027-1.058	<.0001	←
Completeness of surgery ^b	1.460	1.192-1.787	.0003	←
Positive lymph nodes ^c	1.366	1.060-1.761	.0160	←

Ann Surg Oncol (2011) 18:1575–1581
DOI 10.1245/s10434-011-1631-5

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – GASTROINTESTINAL ONCOLOGY

Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy Improves Survival of Patients with Peritoneal Carcinomatosis from Gastric Cancer: Final Results of a Phase III Randomized Clinical Trial

Xiao-Jun Yang, MD¹, Chao-Qun Huang, MD¹, Tao Suo, MD², Lie-Jun Mei, MD¹, Guo-Liang Yang, MD¹, Fu-Lin Cheng, MD¹, Yun-Feng Zhou, MD, PhD¹, Bin Xiong, MD, PhD¹, Yutaka Yonemura, MD, PhD³, and Yan Li, MD, PhD¹

¹Department of Oncology, Hubei Cancer Clinical Study Center and Hubei Key Laboratory of Tumor Biological Behaviors, Zhongnan Hospital of Wuhan University, Wuhan, China; ²Department of General Surgery, Zhongshan Hospital of Fudan University, Shanghai, China; ³NPO Organization to Support Peritoneal Dissemination Treatment, Kishiwada, Osaka, Japan

Ann Surg Oncol 2011

RKÇ- faz III etkinlik ve emniyet çalışması

SRC + HİPEK

Mide kanseri ve peritoneal karsinomatozlu 68 olgu

SRC(n = 34) Vs SRC + HİPEK (n = 34)

- Cisplatin 120 mg + mitomycin C 30 mg (6000 ml of SF içinde $43 \pm 0.5C$, 60–90 dk.)

Parametre: Genel sağ kalım ve emniyet profili

Sonuçlar:

- Peritoneal kanser indeksi her iki grupta aynı.
-
- Takip süresi: 32 ay (7.5–83.5 ay),
- Ölüm: SRC=33/34 (97.1%) SRC+HİPEK= 29/34 (85.3%).
- Sağ kalım SRC= 6.5 ay SRC+HİPEK= 11.0 ay (P = 0.046).

Senkron mide kanseri ve peritoneal karsinomatozda, SRC+HİPEK (mitomycin C 30 mg and cisplatin 120 mg) sağ kalımı artırabilir

Appendiks kanseri ve peritoneal karsinomatoz

Ann Surg Oncol (2012) 19:110–114
DOI 10.1245/s10434-011-1840-y

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – GASTROINTESTINAL ONCOLOGY

The Role of Cytoreductive Surgery and Heated Intraperitoneal Chemotherapy (CRS/HIPEC) in Patients with High-Grade Appendiceal Carcinoma and Extensive Peritoneal Carcinomatosis

Hatem El Halabi, MD, Vadim Gushchin, MD, Jennifer Francis, Nicholas Athas, PA, Ryan MacDonald, PhD, Carol Nieroda, MD, Kimberly Studeman, MD, and Armando Sardi, MD

Surgical Oncology, Mercy Medical Center, Baltimore, MD

Ann Surg Oncol, 2012

- Peritoneal müsinöz kanser
- SRC + HİPEK
- Retrospektif çalışma
- n:134

Tam sitoredüksiyonda 5 yıllık genel sağ kalım:

PCI yüksek grup %45

PCI düşük grup %66

**SRC+HİPEK peritoneal müsinöz karsinomatozda
sağ kalımı artırır**

Peritoneal kanser indeksi düşük olanlarda sağ kalım daha iyi

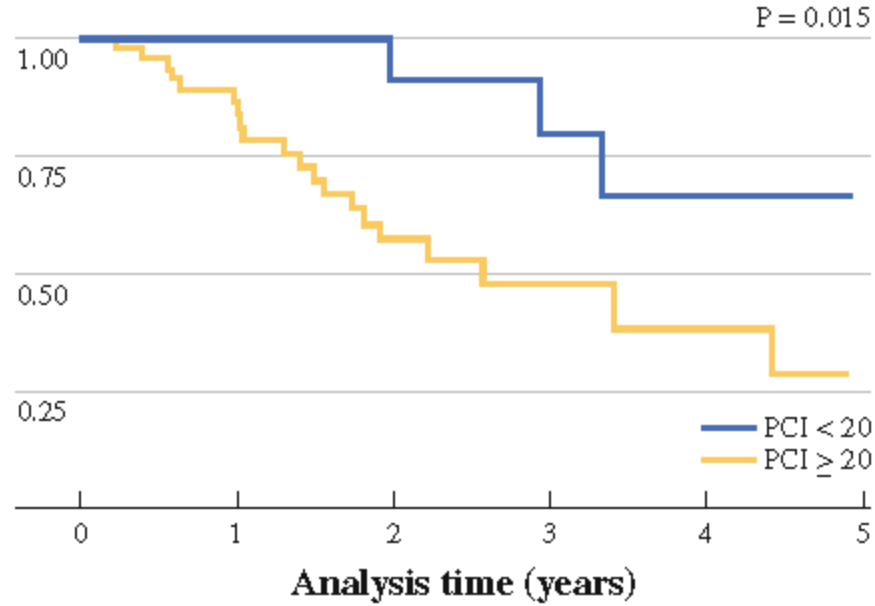


FIG. 2 Overall survival by Peritoneal Cancer Index

Rekürren peritoneal over karsinomatozunda HIPEK

Langenbecks Arch Surg (2011) 396:1077–1081

DOI 10.1007/s00423-011-0835-2

ORIGINAL ARTICLE

Cytoreductive surgery and HIPEC in peritoneal recurrent ovarian cancer: experience and lessons learned

Ingmar Königsrainer • Stefan Beckert • Sven Becker • Derek Zieker • Tanja Fehm •
Eva-Maria Grischke • Olivia Lauk • Jörg Glatzle • Björn Brücher •
Diethelm Wallwiener • Alfred Königsrainer

- N: 40 hasta
- 31 olgu,
- SRC+HİPEK
- Kalın barsak korunabilirse morbidite artmaz

Rekürren peritoneal over kanserlerinde HIPEK

Table 4 Comparison of data with and without colonic resections

	Colonic resection	No colonic resection	<i>p</i> value
Complications, <i>n</i> (%)	10 (44)	3 (38)	0.552
Hospital stay, days	18 (11-93)	14 (3-21)	0.026
Wound infection, <i>n</i> (%)	4 (17)	0	0.281
Reoperation, <i>n</i> (%)	6 (26)	0	0.137
Operation time, min	664 (178-1,070)	527 (441-582)	0.016
PCI	19 (3-34)	13 (6-32)	0.386

Data comparing patients with and patients without colonic resection; $p < 0.05$ is considered significant

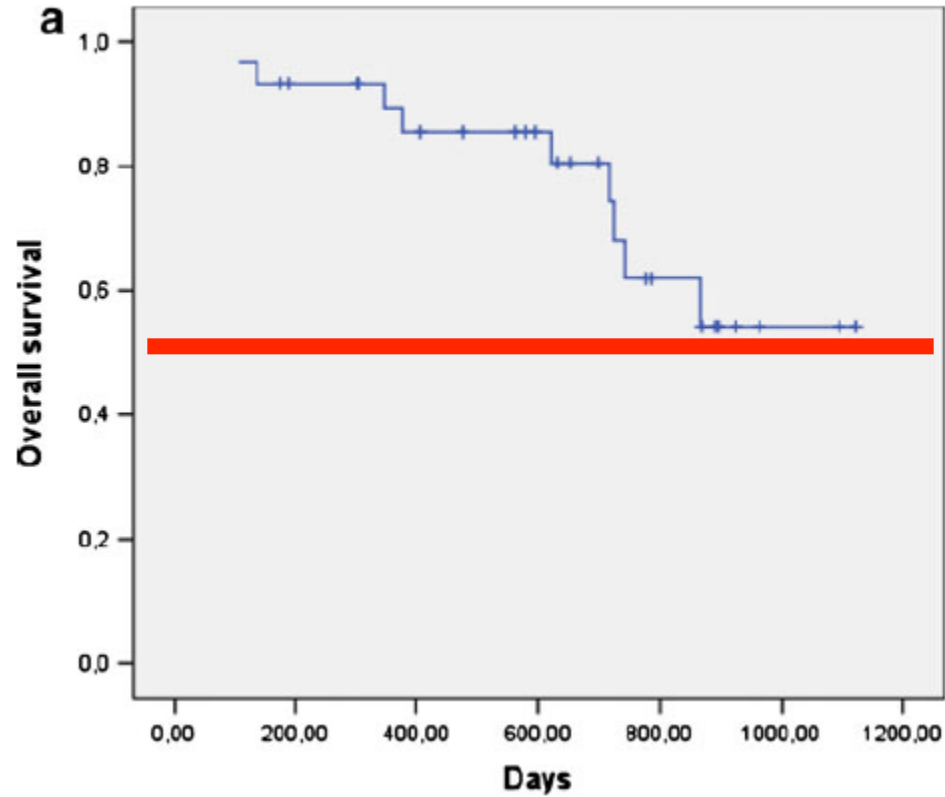
Rekürren peritoneal over kanserlerinde HİPEK

Table 6 Recurrence and mortalities during follow-up

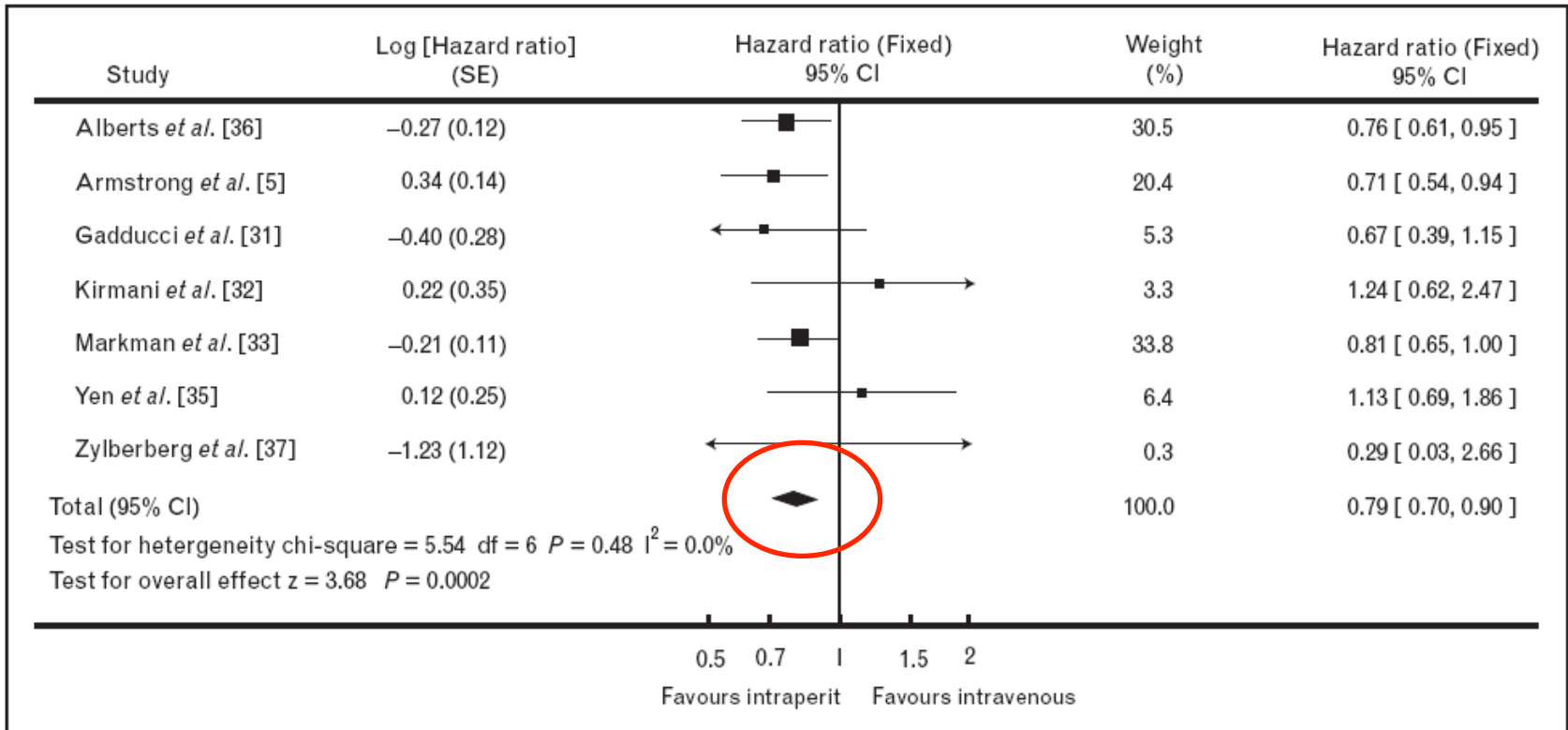
Recurrence, <i>n</i> (%)	7/28 (25)
Mortality during follow-up, <i>n</i> (%)	10 (32)
Follow-up time, days	798 (188 1,297)
Overall, <i>n</i> (%)	7 (25)
Retroperitoneal, <i>n</i> (%)	1 (3.6)
Liver surface/right upper quadrant, <i>n</i> (%)	2 (7.1)
Parietal abdominal wall, <i>n</i> (%)	3 (10.7)
Spleen, <i>n</i> (%)	1 (3.6)

Recurrence data and follow-up time; data are presented as median (min, max) or *n* (%)

Rekürren peritoneal over kanserlerinde HİPEK



Over kanserinde IP kemoterapi



Pseudomyxoma peritonei

- HİPEK
- Çok merkezli Fransız çalışması
- N:277
- 5 yıllık genel sağ kalım %73
- 10 yıllık sağ kalım %55

REVIEW

Treatment of Gastric Cancer With Peritoneal Carcinomatosis by Cytoreductive Surgery and HIPEC: A Systematic Review of Survival, Mortality, and Morbidity

RICHDEEP S. GILL, MD,^{1*} DAVID P. AL-ADRA, MD,¹ JEEVAN NAGENDRAN, MD,¹
SANDY CAMPBELL, BA, MLS, AFALIA (CP),² XINZHE SHI, MPH,³ ERIKA HAASE, MD MSc FRCSC,¹
AND DANIEL SCHILLER, MD MSc FRCSC¹

¹Department of Surgery, University of Alberta, Edmonton, Alberta, Canada

²Library Services, University of Alberta, Edmonton, Alberta, Canada

³Center for the Advancement of Minimally Invasive Surgery (CAMIS), Royal Alexandra Hospital, Edmonton, Alberta, Canada

- Mide kanserinde peritoneal karsinomatoz prognozu çok kötüdür
- SRC + HİPEK sağ kalım: 7.9 ay.
- Tam sito redüksiyon varlığında sağ kalım: 15 ay.
- Mortalite % 4.8

Mide kanserine ikincil peritoneal karsinomatozda HIPEK - sağkalım

TABLE II. Survival Following CRS + HIPEC for Gastric Carcinoma With PC

Refs.	Median survival (months)	Survival with CCR 0/1 (months)	1-Year survival (%)	2-Year survival (%)	5-Year survival (%)
Glehen et al. [19]	9.2	15	43		13
Yang et al. [20]		43.4	50	42.8	
Shen et al. [21]	6.1				
Scaringi et al. [22]	6.6	15			
Roviello et al. [23]					
Farna et al. [24]	8		22.2	11.1	
Yonemura et al. [25]	11.5	19.2	35.5	13.1	
Mussa et al. [26]			68	50	13
Fujimura et al. [27]			57	21	
Beaujard et al. [28]			48	33	
Range	6.1–9.2	9.5–43.4	22–68	11–50	
Median	7.9	15	43	18	13

CCR, completeness of cytoreduction score 0/1; LOS, length of stay; ICU, intensive care unit.

Mide kanserine ikincil peritoneal karsinomatozda HIPEK –mortalite- hastanede kalış süresi

696 Gill et al.

TABLE IV. Mortality and Hospital Length of Stay of CRS Combined With HIPEC

Refs.	Treatment-related deaths	Mortality (%)	Cause of death	Hospital LOS (days)	ICU stay (days)
Glehen et al. [19]	11	6.5	NL		
Yang et al. [20]	3	10.7	2 Ileus, 1 ARDS, 1 pneumonia		1-3
Shen et al. [21]		4		15	2
Scaringi et al. [22]	1	11	Septic shock	16	
Roviello et al. [23]	1	1.6	MOF	7	
Farma et al. [24]	1	5.6	CVA		
Yonemura et al. [25]	3	7	1 ARF, 1 A-leak, 1 bleeding		
Mussa et al. [26]	1	14.3			
Fujimura et al. [27]	0	0			
Beaujard et al. [28]	3	3.60	1 PE, 1 MOF, 1 Septic shock	11	
Total/median	19	4.8 (0-14.3)			

MOF, multiple organ failure; CVA, cerebrovascular accident; PE, pulmonary embolism; ARDS, adult respiratory distress syndrome; ARF, acute renal failure; A-leak, intestinal anastomosis leak; NL, not listed.

Mide kanserine ikincil peritoneal karsinomatozda HIPEK- morbidite

TABLE V. Morbidity of CRS Combined With HIPEC for Gastric Carcinoma + PC

Refs.	Overall morbidity (%)	Re-operation (%)	Sepsis	Fistula	Abscess	Hematologic toxicity	Ileus	Anastomotic leak
Glehen et al. [19]								
Yang et al. [20]	14.3		1		1		2	1
Shen et al. [21]	43							
Scaringi et al. [22]	27			9	5	2		
Roviello et al. [23]	27.9	8.2		5	2	5	1	
Farma et al. [24]	55.6				1	3		
Yonemura et al. [25]	21.5			1	6			6
Mussa et al. [26]			1					
Fujimura et al. [27]	50	33.3			2			
Beaujard et al. [28]	9.6	4.8				3	2	1
Total/median	21.5		2	10	11	2	2	7

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REVIEW ARTICLE

Systematic Review on the Efficacy of Cytoreductive Surgery
Combined With Perioperative Intraperitoneal
Chemotherapy for Peritoneal Carcinomatosis From
Colorectal Carcinoma

Tristan D. Yan, Deborah Black, Renaldo Savady, and Paul H. Sugarbaker

Median sağ kalım: 13 - 29 ay

Tam sito redüksiyon: median sağ kalım 28 - 60 ay

Mortalite= %0-12

Altın standart 'kemoterapi' ile karşılaştırma

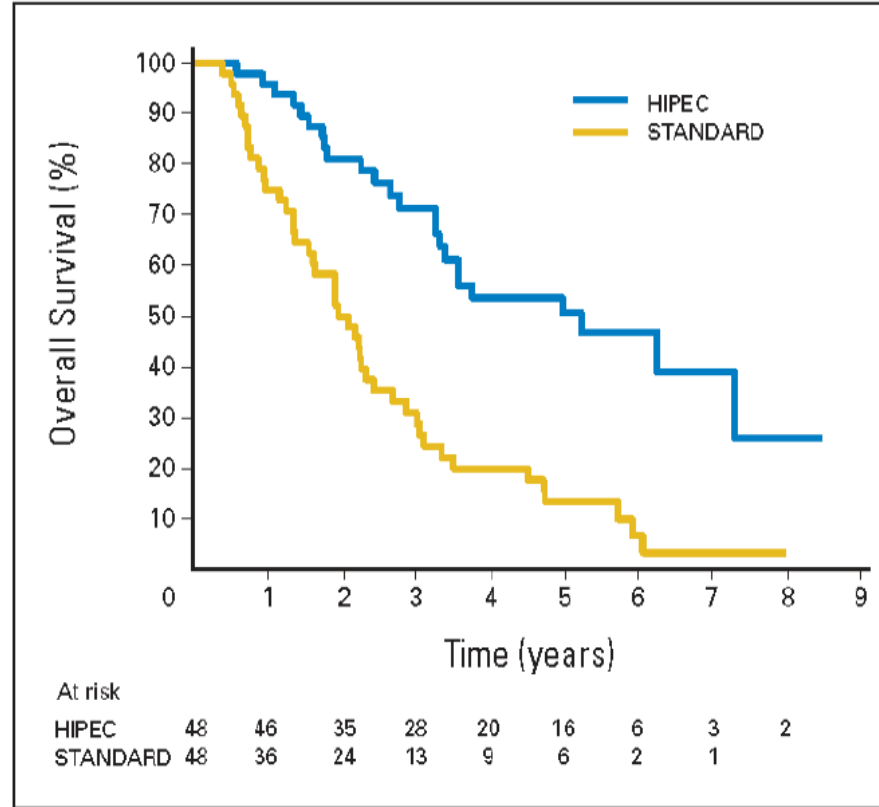
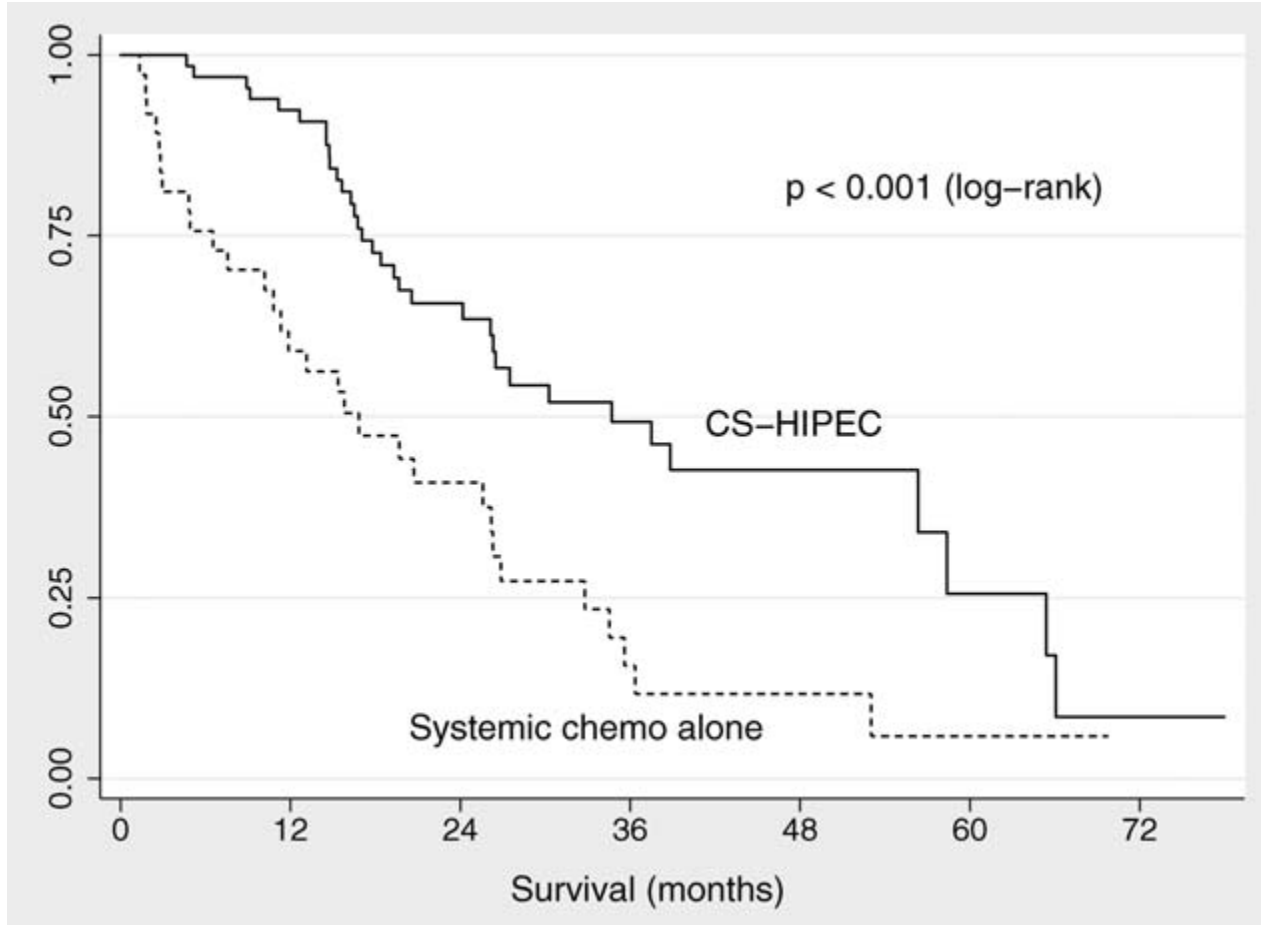


Fig 1. Overall survival of group receiving cytoreductive surgery, hyperthermic intraperitoneal chemotherapy (HIPEC), and systemic treatment versus those

Median sağ kalım 63 vs 23 ay (Elias et al. J Clin Oncol2009;27:681)

Sistemik kemoterapi ile HIPEK+ tam sitoredüksiyon karşılaştırması



Prognostik deęiřkenler

- Karsinomatozun tipi
- Sitoredüksiyonun derecesi
- Sistemik kemoterapiye cevap
- Asit yokluğu
- İlk cerrahiden sonraki sürenin uzun olması
- Hastanın performans durumu

Kolorektal karsinomatosis sitoredüksiyon + HIPEK



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2011

Prognostic factors and oncologic outcome in 146 patients with colorectal peritoneal carcinomatosis treated with cytoreductive surgery combined with hyperthermic intraperitoneal chemotherapy: Italian multicenter study S.I.T.I.L.O.

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Kolorektal karsinomatozis sitoredüksiyon + HİPEK

- 5 İtalyan hastanesi,
- n: 146
- Takip süresi en az 24 ay
- Genel morbidite % 27.4
- Mortalite %2.7

Yüksek peritoneal kanser indeksi, senkron karaciğer metastazı varlığı prognozu kötüleştirir

EJSO, 2011

Kolonik kökenli peritoneal yüzey malignitleri 2006 uzlaşısı kararı

Annals of Surgical Oncology 14(1):128-133
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Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy in the Management of Peritoneal Surface Malignancies of Colonic Origin: A Consensus Statement

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Kolonik kökenli peritoneal yüzey malignitleri 2006 uzlaş kararı

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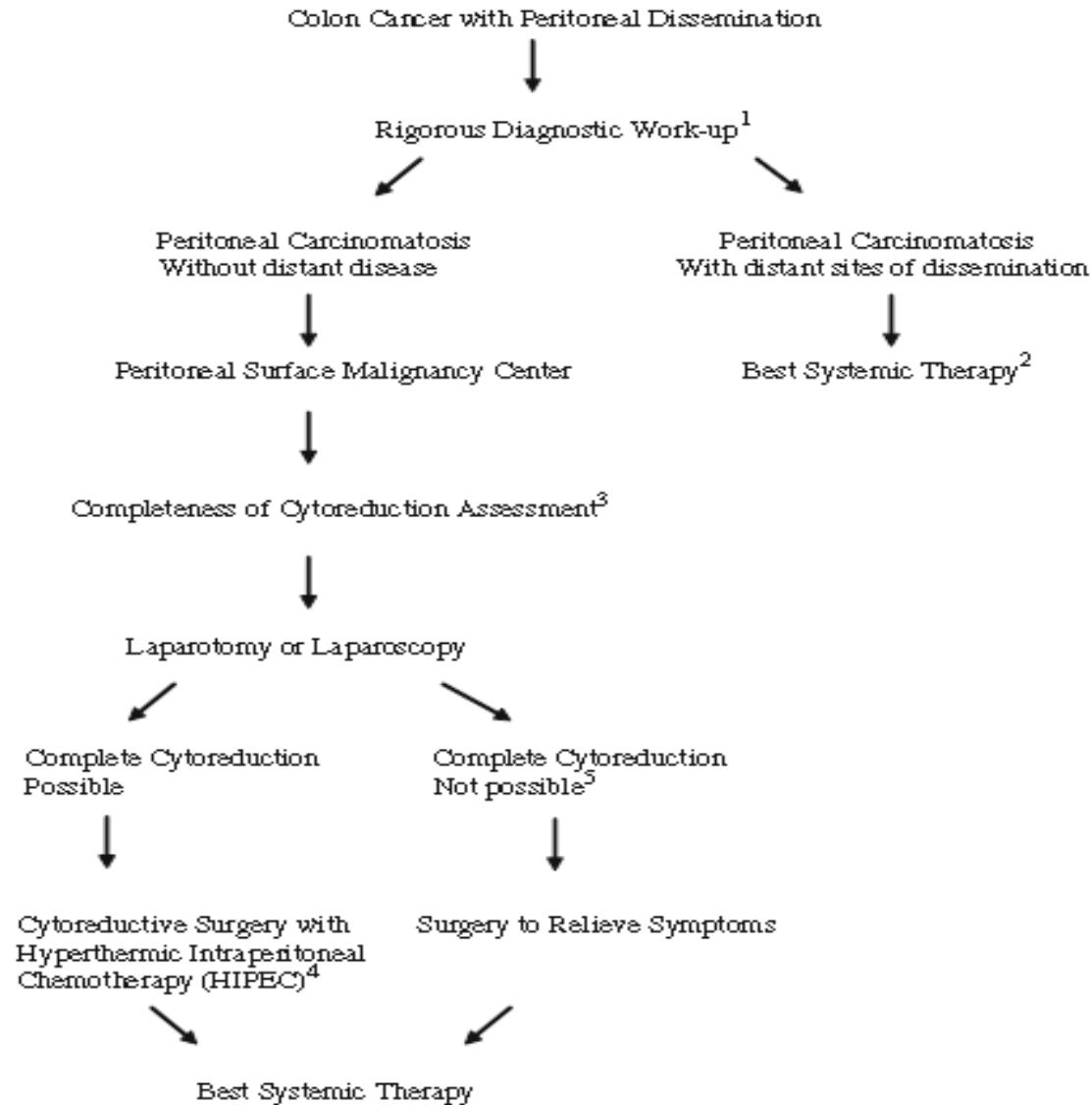
J. ESQUIVEL ET AL.

TABLE 1. Literature review of most recent updates on cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC) in the management of peritoneal surface malignancies of colonic origin

Chief investigator	Center	Design	Year	Patient (n)	HIPEC	Follow-up (months)	Median survival (months)	Survival (%)				
								One year	Two years	Three years	Four years	Five years
Verwaal ¹	Amsterdam	Phase III	2004	54	MMC arm	22	22	67	44	–	–	–
				51	Control arm		13	56	22	–	–	–
Rossi ²	Padova	Phase II	2003	46	MMC + Cisplatin	15	18	68	31	–	–	–
Di Filippo ³	SITIO	Phase II	2003	69	MMC	–	–	–	–	27	–	–
Levine ⁴	Winston-Salem	Phase II	2004	77	MMC	15	16	56	–	25	–	17
Gilly ⁵	Lyon	Phase II	2004	53	MMC	60	13	55	–	32	–	11
Glehen ⁶	Multi-centers	Phase II	2004	506	MMC/LOHP	53	19	72	–	39	–	19
Morris ⁷	Sydney	Phase II	2005	30	MMC	12	30	71	62	–	–	–
Kecmanovic ⁸	Belgrade	Phase II	2005	18	MMC	21	15	–	–	–	–	–
Elias ⁹	Villejuif	Phase II	2005	30	LOHP	55	60	97	73	53	49	–
Zoetmulder ¹⁰	Amsterdam	Phase II	2005	117	MMC	46	22	75	–	28	–	19
Sugarbaker ¹¹	Washington	Phase II	2005	70	MMC	47	33	88	–	44	–	32

MMC mitomycin C; LOHP oxaliplatin; 5-FU 5-fluorouracil

Clinical pathway for the management of peritoneal surface malignancies of colonic origin. J. ESQUIVEL et al.



Research Article

Is Platinum Present in Blood and Urine from Treatment Givers during Hyperthermic Intraperitoneal Chemotherapy?

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Received

Accepted

Bize bir şey olur mu?

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Background. In selected patients with peritoneal carcinomatosis (PC) originating from colorectal cancer (CRC) the high dosage of oxaliplatin (460 mg/m²) is recommended for hyperthermic intraperitoneal chemotherapy (HIPEC), which may be a health risk to those administering the drug. The aim of this study was to determine the risk of platinum (Pt) exposure for the two main people handling and administering the cytotoxic agent during HIPEC. **Methods.** Samples of blood and urine were collected from one male surgeon and one female perfusionist during oxaliplatin-based HIPEC treatment with open abdomen coliseum technique on six consecutive patients with PC from CRC. **Results.** All blood samples analysed were below the detection limit of < 0.05 nmol/L Pt, and the urine samples were all below the detection limit of < 0.03 nmol/L Pt. **Conclusions.** There appears to be little or no risk of Pt exposure during HIPEC when the recommended protective garment is used and the safety considerations are followed.

Açık karın tekniği ile HİPEK uygulanan 6 olgunun işlemini gerçekleştirenlerin idrar analizlerinde toksik derecede oksaliplatine rastlanmamıştır (< 0.03 nmol/L).

- Risk hemen hemen yoktur
- Koruyucu giysiler ve eldiven yeterli olmaktadır

Morbidity and Mortality With Cytoreductive Surgery and Intraperitoneal Chemotherapy

The Importance of a Learning Curve

Faheez Mohamed, MD, FRCSEd (Gen Surg), and Brendan J. Moran, MCh, FRCS

(Cancer J 2009;15: 196–199)

**Bireysel ve kurumsal deneyim hasta sađaltımında
önemli bulunmuştur**

Sonuç:

- Colon kanseri
- Appendiks kanseri
- Mezotelyoma
- Psödomiksoma peritonei
- Mide ?
- . . .

peritoneal karsinomatozda hematojen yayılım ve uzak metastaz yoksa

SRC + HİPEK (mitomycin C) ve post-operatif sistemik kemoterapi, tam redüksiyon sağlanabildiğinde sağ kalımı 42 aya kadar artırabilir

Arama

Yaklaşık 9.030 sonuç bulundu (0,22 saniye)



Her şey

[HIPEC Treatment Centers - PMP PALS' Network](#) ✓www.pmpals.org/hipec-treatment-centers... - Bu sayfanın çevirisini yap

6 Mar 2012 – Washington Hospital Center, Dr **Paul H Sugarbaker**. Picture. Dr **Paul H Sugarbaker** provides **HIPEC** treatment at the Washington Hospital ...

Görseller

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30 Jan 2012 – **HIPEC** is Effective for the Treatment of Colorectal Cancer. Picture. Dr **Paul Sugarbaker**. Systematic Review on the Efficacy of Cytoreductive ...

İstanbul

Konumu değiştir

[HIPEC Treatment in Mexico - PMP PALS' Network](#) ✓www.pmpals.org/.../hipec-treatment-in-m... - Bu sayfanın çevirisini yap

9 Jun 2011 – During recent years, Drs Jesus Esquivel and **Paul Sugarbaker** have been instrumental in the development of **HIPEC** treatment programs ...

Web

Türkçe yazılmış sayfalar

Sayfaların

bulunduğu ülke:

[Intraperitoneal hyperthermic chemoperfusion - Wikipedia, the free ...](#) ✓en.wikipedia.org/.../Intraperitoneal_hypert... - Bu sayfanın çevirisini yap

IPHC is also called hyperthermic intraperitoneal chemotherapy (**HIPEC**), ... (CHPP), or

ANADOLU^H

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