THIRD ANNUAL

ISSPP
Congress 2022

International Society
for the Study of Pleura
and Peritoneum

City of Hope®

ISSPP · INTERNATIONAL SOCIETY FOR THE STUDY OF PLEURA AND PERITONEUM · 2018 ·

GASTRIC CANCERS

What is the Role of Palliative Surgery in Gastric Cancer Peritoneal Carcinomatosis Patients?

Jacopo Desiderio, MD, PhD
Department of Digestive Surgery
St. Mary's Hospital - University of Perugia
Terni, Italy

Advancing Innovative Therapies for Cancers That Invade the Peritoneum and the Pleura

Disclosures

- I do not have any relevant financial relationships.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.

Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

STATE LAW:
The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon **must** contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.

EXEMPTION:
Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

This presentation is dedicated solely to research or other issues that do not contain a direct patient care component.

"Palliative care is an approach that improves
the quality of life of patients…"

WHO Definition of Palliative Care, 2002

What is Palliative Surgery in Gastric Cancer?

Surgery offered to patients with incurable disease due to one
or more metastatic sites with the aim to relieve symptoms

Japanese gastric cancer treatment guidelines 5°ed. 2018

➢ Palliative Gastrectomy

➢ Gastrojejunostomy

➢ Stomach-partitioning
Gastrojejunostomy

The Concept of Reduction Surgery

Gastrectomy performed for patients harboring incurable factors
such as peritoneal metastasis, while suffering from no tumor-
associated symptoms.

The aim is to prolong survival or to delay the onset of symptoms
by reducing the tumor volume

Gastric Cancer
Peritoneal Carcinomatosis

Role of Non-Curative Surgery

- Palliation of the MAJOR SYMPTOMS (bleeding and/or obstruction)

Surgical management for patients with MINIMAL SYMPTOMS is debated

Resective vs Non-Resctive surgery vs CHT / BSC:

- Few studies investigated the effects of surgery in patients with incurable factors.

- GC-PC controversies: survival benefit, m&m, QOL

NO CONSENSUS on the value of resective surgery

Rationale

Some authors have suggested that palliative gastrectomy should be indicated in patients with PC based on the following:

❑ Gastrectomy can relieve cancer-related symptoms, such as tumor bleeding, obstruction, and perforation;

❑ Resection of the primary tumor can reduce the amount of tumor stem cells, possibly increasing the sensitivity of palliative chemotherapy;

❑ Primary tumor removal can improve metabolism and immunity of the patients.

Current Studies
Data Analysis and Limits

Confounding factors:

- Metastasis sites / types

- Tumor burden

- Patient Characteristics

Type of studies in the literature:
retrospective with PSM analysis

Criteria for surgery:
determined by the operators according to several factors (PS, feasibility, patient informed consent)

Groups:
- Resective surgery: total / distal gastrectomy
- Non-resective surgery: bypass, explorative
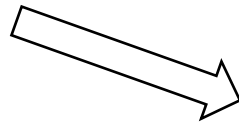- Chemotherapy

Exclusion criteria for this presentation:
- Curative intent / R0 in CRS+gastrectomy
- Positive cytology without macroscopic PC

Reported Outcomes

- Survival: MST, 1y - 2y OS

- Post-operative complications / mortality
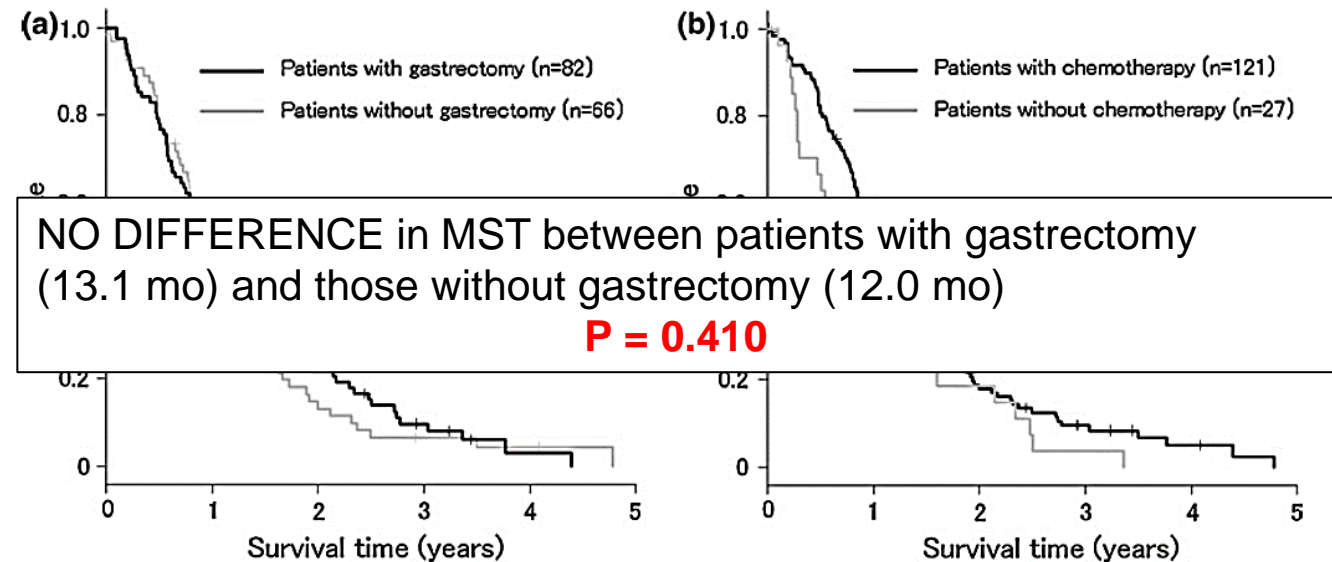
- QOL ⬅ *lack of data*

Only one study (Dong et al.)

- Post-operative palliative intervention

- Intervention interval: time from the operation to the first palliative intervention

- Hospital-free time (HFT): time from the discharge after operation to death or rehospitalization

World Journal of Surgery

Survival Benefit of Palliative Gastrectomy in Gastric Cancer Patients with Peritoneal Metastasis

Masanori Tokunaga · Masanori Terashima ·
Yutaka Tanizawa · Etsuro Bando · Taiichi Kawamura ·
Hirofumi Yasui · Narikazu Boku

- Total sample: 148 patients
- Patients: PC only
  (P1, P2-P3 if tumor-associated symptoms)
- Comparison:
- Gastrectomy±CHT (n=82)
- CHT (n=66)
- Endpoints: MST

(a) Patients with gastrectomy (n=82) / Patients without gastrectomy (n=66)

(b) Patients with chemotherapy (n=121) / Patients without chemotherapy (n=27)

NO DIFFERENCE in MST between patients with gastrectomy (13.1 mo) and those without gastrectomy (12.0 mo)
P = 0.410

Covariates	P value	Hazard ratio (HR)	95 % CI
Age (<60 years vs. ≥60 years)	0.830	1.045	0.700–1.559
Sex (male vs. female)	0.516	0.879	0.596–1.297
cP (cP− vs. cP+)	0.122	0.681	0.419–1.108
Gastrectomy (yes vs. no)	0.897	1.031	0.646–1.647
Chemotherapy (yes vs. no)	0.004	0.476	0.288–0.787
ECOG performance status (0,1 vs. 2,3)	<0.001	0.278	0.156–0.495
Macroscopic type (≠ type 4 vs. type 4)	0.006	0.566	0.377–0.848
Histology (differentiated vs. undifferentiated)	0.290	0.466	0.454–1.256

ORIGINAL RESEARCH

Survival benefit of gastrectomy for gastric cancer with peritoneal carcinomatosis: a propensity score-matched analysis

Xiuwen Geng[1,2,a], Hao Liu[1,a], Tian Lin[1,a], Yanfeng Hu[1], Hao Chen[1], Liying Zhao[1], Tingyu Mou[1], Xiaolong Qi[1], Jiang Yu[1] & Guoxin Li[1]

[1]Department of General Surgery, Nanfang Hospital, Southern Medical University, Guangzhou, China
[2]Department of Gastrointestinal Surgery, The First People's Hospital of Yueyang, Yueyang, China
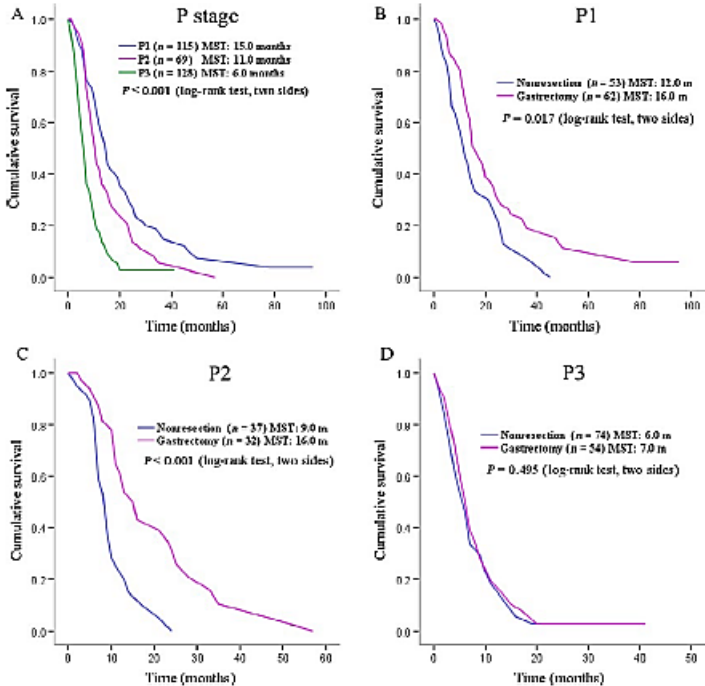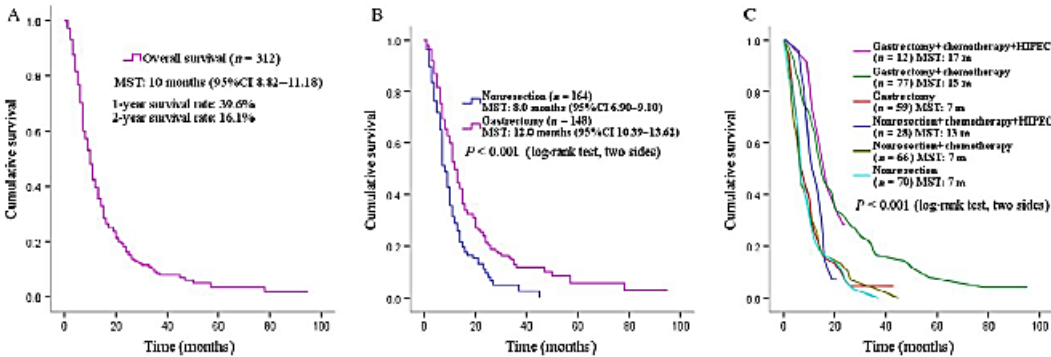
Characteristic	n	MST (m)	Univariate analysis			Multivariate analysis		
			HR	95% CI	P value	HR	95% CI	P value
Gender, male/female	199/113	10.0/10.0	0.975	0.747–1.271	0.850			
Age, <60/> = 60 years	196/116	11.0/8.0	1.450	1.121–1.874	0.005	1.561	1.201–2.028	0.001
ECOG-PS, 0–1/2–3	274/38	10.0/10.0	1.023	0.701–1.492	0.906			
P Stage, P1, P2/P3	184/128	13.0/6.0	2.816	2.148–3.691	<0.001	2.698	2.046–3.559	<0.001
Gastrectomy, Yes/No	148/164	12.0/8.0	0.596	0.460–0.773	<0.001	0.597	0.456–0.781	<0.001
Chemotherapy, Yes/No	154/158	13.0/8.0	0.544	0.420–0.705	<0.001	0.624	0.479–0.814	<0.001

Characteristic	Gastrectomy (n = 148)					Nonresection (n = 164)					
	n	MST (m)	95% CI	Survival rate (%)		n	MST (m)	95% CI	Survival rate (%)		P value
				1 year	2 year				1 year	2 year	
Treatment modality											
Chemotherapy + HIPEC	12	17.0	11.27–22.74	66.7	28.5	28	13.0	7.58–18.42	50.0	3.6	0.034
Chemotherapy	77	15.0	12.27–17.73	64.3	30.9	66	7.0	5.96–8.04	27.8	10.6	<0.001
No chemotherapy	59	7.0	4.66–9.34	24.9	6.6.	70	7.0	6.32–7.68	22.2	6.6	0.691
P stage											
P1	62	16.0	12.29–19.71	69.0	31.5	53	12.0	8.49–15.51	47.0	25.7	0.017
P2	32	16.0	11.97–20.03	60.9	31.2	37	9.0	7.51–10.49	21.6	0.0	<0.001
P3	54	7.0	5.79–8.24	16.7	1.9	74	6.0	4.67–7.33	15.9	0.0	0.495
Overall	148	12.0	10.39–13.62	49.8	21.5	164	8.0	6.90–9.10	28.8	9.7	<0.001

MST, median survival time; HIPEC, hyperthermic intraperitoneal chemotherapy.

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

CrossMark

ORIGINAL ARTICLE – GASTROINTESTINAL ONCOLOGY

Significant Role of Palliative Gastrectomy in Selective Gastric Cancer Patients with Peritoneal Dissemination: A Propensity Score Matching Analysis

Run-Cong Nie, MD[1], Shi Chen, MD, PhD[2], Shu-Qiang Yuan, MD, PhD[1], Xiao-Jiang Chen, MD[1], Yong-Ming Chen, MD, PhD[1], Bao-Yan Zhu, MD, PhD[1], Hai-bo Qiu, MD, PhD[1], Jun-Sheng Peng, MD, PhD[2], and Ying-Bo Chen, MD[1]

	Before propensity score matching		p value
	Gastrectomy group	Non-gastrectomy group	
	345	402	
Ascites grading			<0.001
0	254 (73.6)	159 (39.6)	
1	56 (16.2)	91 (22.6)	
2	27 (7.8)	54 (13.4)	
3	8 (2.4)	98 (24.4)	
Peritoneal seeding			<0.001
P1	120 (34.8)	44 (11.0)	
P2	110 (31.9)	110 (27.3)	
P3	115 (33.3)	248 (61.7)	

| Variables	Univariate analysis		p value	Multivariate analysis		p value
	HR	95 % CI		HR	95 % CI	
Treatment			0.020			0.006
Non-gastrectomy group	1			1		
Gastrectomy group	0.76	0.60–0.96		0.72	0.57–0.91	
Multisite distant metastasis			<0.001			<0.001
No	1			1		
Yes	1.56	1.22–2.00		1.64	1.27–2.10	
Period of first-line chemotherapy			<0.001			<0.001
0	1			1		
1–4	0.82	0.62–1.08	0.156	0.85	0.64–1.21	0.245
5–8	0.50	0.36–0.69	<0.001	0.49	0.35–0.69	<0.001
>8	0.24	0.16–0.38	<0.001	0.24	0.15–0.37	<0.001

HR hazard ratio, CI confidence interval
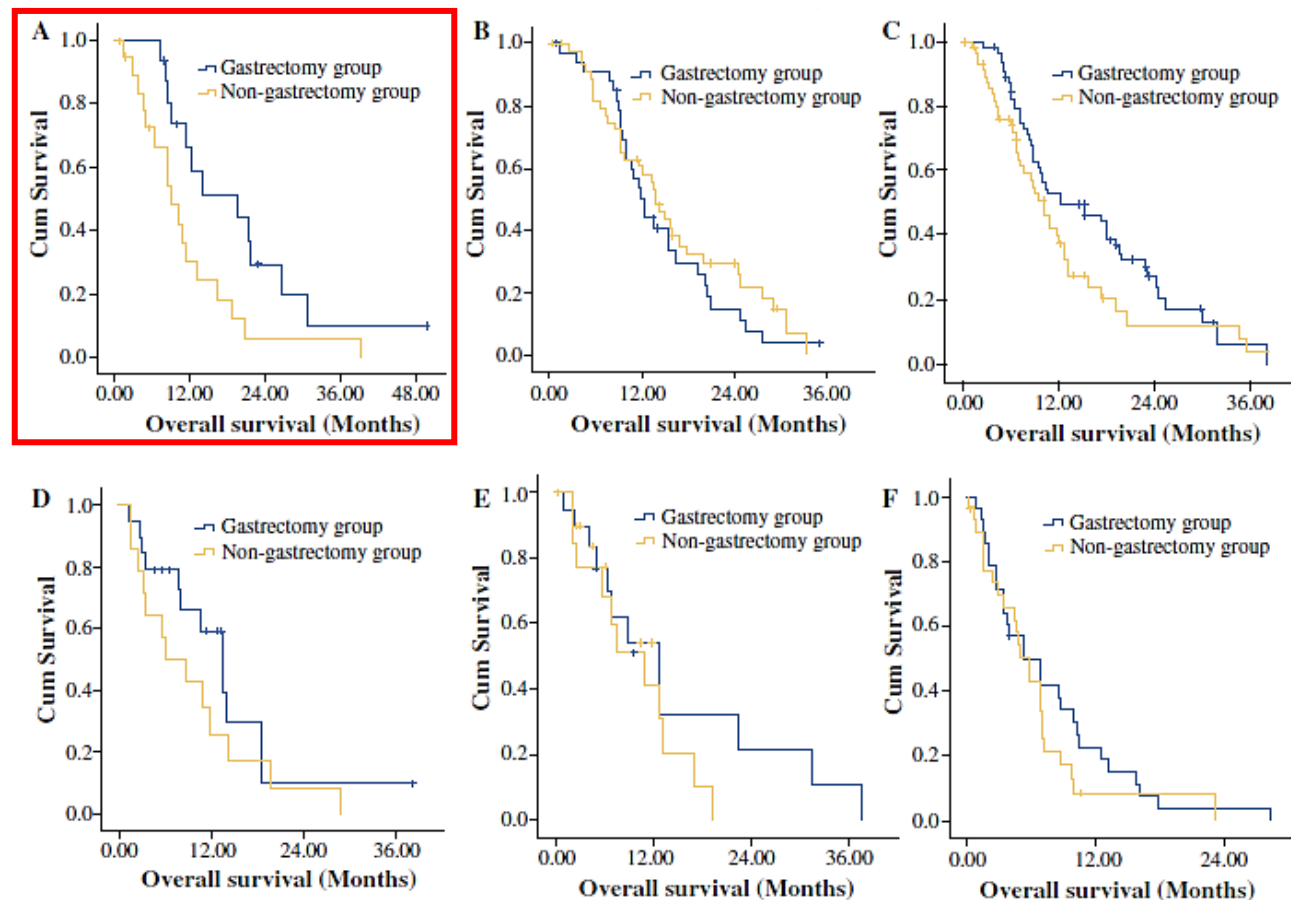
FIG. 3 Kaplan–Meier survival curves of the palliative gastrectomy and non-gastrectomy groups for gastric cancer patients with peritoneal dissemination stratified by first-line chemotherapy and classifications of peritoneal metastasis. a P1 with first-line chemotherapy ($p = 0.024$); b P2 with first-line chemotherapy ($p = 0.406$); c P3 with first-line chemotherapy ($p = 0.076$); d P1 without first-line chemotherapy ($p = 0.269$); e P2 without first-line chemotherapy ($p = 0.231$); f P3 without first-line chemotherapy ($p = 0.299$). p values were calculated using the log-rank test

Non-curative surgery for patients with gastric cancer with local peritoneal metastasis

A retrospective cohort study

Yuanqiang Dong, MD[a], Shulan Ma, MD[b,c], Shuo Yang, MD[a], Fen Luo, MD PhD[a,d], Zhiming Wang, MD, PhD[a,c,d,*], Fenghua Guo, MD, PhD[a,d,*]

- Total sample: 47 patients
- Patients: PC (P1 during surgical exploration)
- Comparison:
- Gastrectomy+CHT (n=29)
- Non-resection+CHT (n=18)
- Endpoints: OS, HFT, Interventional interval

> Interventional interval: G=19.9±7.5mo vs NR=8.3±3mo (p<0.001)
> HFT: G=21.6±10.1mo vs NR=9.8±3.3mo (p<0.001)
> OS: RG 23mo vs N-RG 12mo (p<0.001)
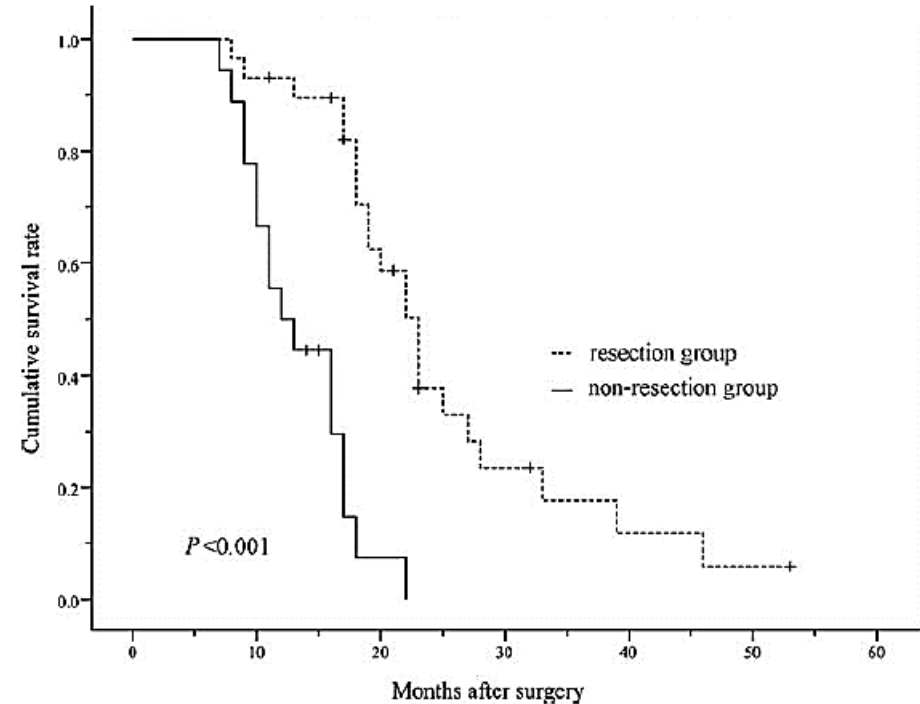
The Value of Palliative Gastrectomy for Gastric Cancer Patients With Intraoperatively Proven Peritoneal Seeding

Kun Yang, MD, Kai Liu, MD, Wei-Han Zhang, MD, Zheng-Hao Lu, MD, Xin-Zu Chen, MD, Xiao-Long Chen, MD, Zong-Guang Zhou, MD, FACS, and Jian-Kun Hu, MD, PhD

- Total sample: 267 patients
- Patients: PC ± Other sites
- Comparison:
- Gastrectomy ± CHT (n=114)
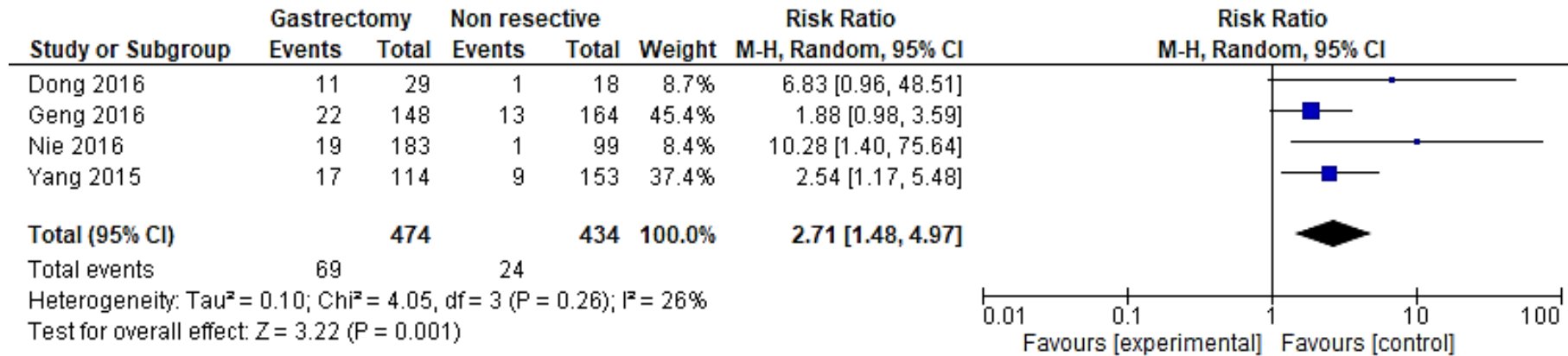- Non-resection ± CHT (n=153)
- Endpoints: MST
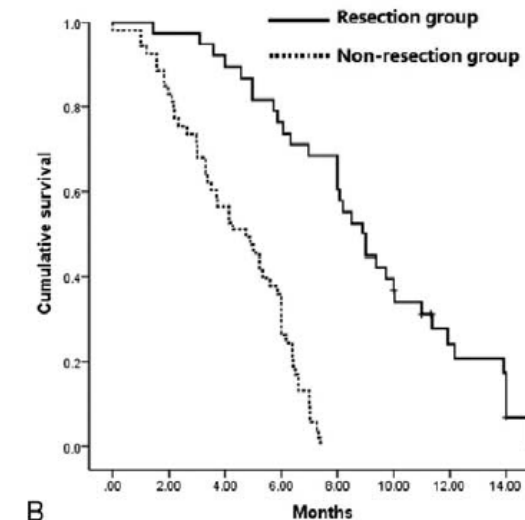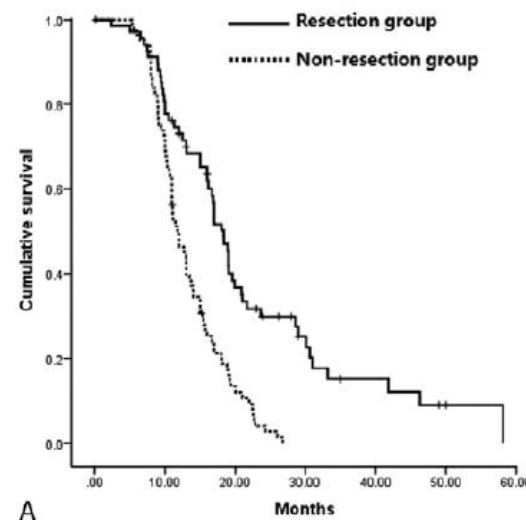
Survival curves of resection group and nonresection group for gastric cancer patients with peritoneal seeding stratified by postoperative chemotherapy. A, With chemotherapy ($P=0.000$). B, Without chemotherapy ($P=0.000$).
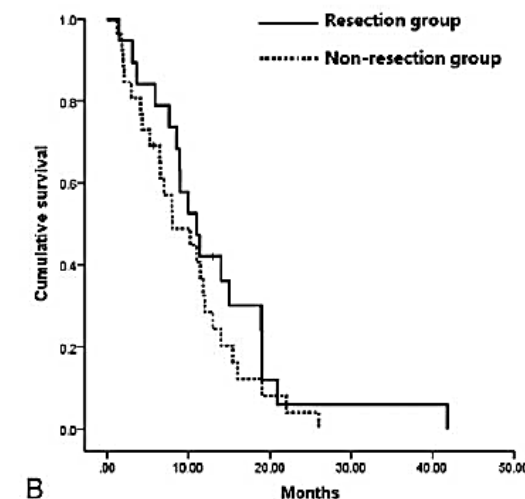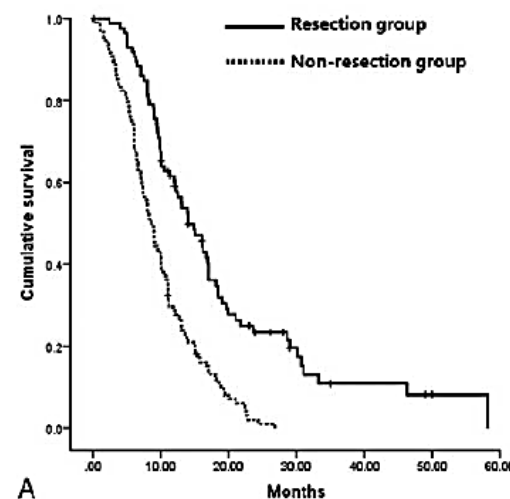
Survival curves of resection group and nonresection group for gastric cancer patients with peritoneal seeding stratified by multisite distant metastases. A, Peritoneal seeding only ($P=0.000$). B, With multisite distant metastases ($P=0.267$).

Expected Complications
After Gastrectomy in PC

Study or Subgroup	Gastrectomy Events	Total	Non resective Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Dong 2016	11	29	1	18	8.7%	6.83 [0.96, 48.51]
Geng 2016	22	148	13	164	45.4%	1.88 [0.98, 3.59]
Nie 2016	19	183	1	99	8.4%	10.28 [1.40, 75.64]
Yang 2015	17	114	9	153	37.4%	2.54 [1.17, 5.48]
Total (95% CI)		**474**		**434**	**100.0%**	**2.71 [1.48, 4.97]**
Total events	69		24			

Heterogeneity: Tau² = 0.10; Chi² = 4.05, df = 3 (P = 0.26); I² = 26%
Test for overall effect: Z = 3.22 (P = 0.001)

Study	Morbidity rate	Mortality rate
Dong et al.	37,9% (11/29)	0% (0/29)
Geng et al.	10,2% (22/148)	Not specified
Nie et al.	10,4% (19/183)	0,5% (1/183)
Yang et al.	14.9% (17/114)	0,8% (1/114)

Conclusions

➢ Low level evidence in this setting: type of studies, selection biases, grouping and comparisons, type of reported outcomes.

➢ Patients could benefit from surgery in terms of QOL / palliation of symptoms but this evidence is poor because of the lack of tailored studies. Moreover, endoscopic and interventional techniques are valid alternatives.

➢ The morbility after resective surgery is a significant point that need to be considered.

Conclusions

➤ Palliative gastrectomy alone should be avoided and reserved for emergency situations.

➤ Palliative gastrectomy in a multimodality treatment strategy including chemotherapy seems to improve outcomes and can be proposed even in those patients with minor symptoms with the following characteristics:

- P1 (P2) disease
- No multisite distant metastases
- ECOG-PS: 0-2