



Mide Kanseri Cerrahi Tedavi İlkeleri

Ne değişti?

Ali Güner

MD, PhDc, BA, FACS
KTÜ Genel Cerrahi ABD

XXII. Ulusal Cerrahi Kongresi, 24 Mart 2022

Herhangi bir biomedikal firma ile
çıkar çatışmam bulunmamaktadır.

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Let's Meet Where the Continents Meet

33rd WORLD CONGRESS of International Association of Surgeons, Gastroenterologists and Oncologists

SEPTEMBER 28TH - OCTOBER 1ST, 2022

IASGO

The General Rules for the Gastric Cancer Study in Surgery and Pathology

Part II. Histological Classification of Gastric Cancer

The Japanese Research Society Committee on Histological
Classification of Gastric Cancer

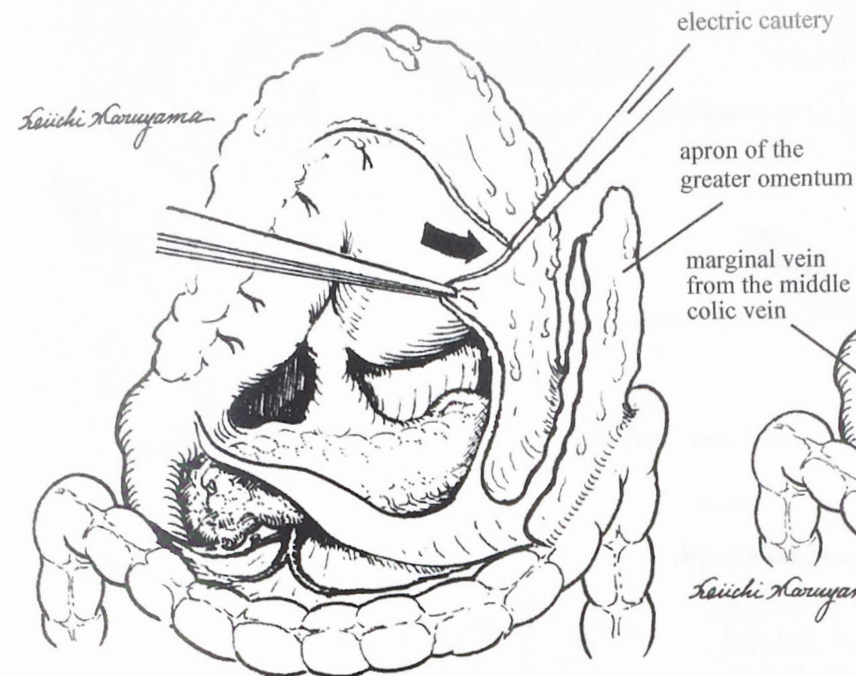


Fig. 9 Division line for the apron-preserving omentectomy

For the cases with no possibility of metastasis in the bursa and peritoneum, namely T1 and T2 tumor, the apron of the greater omentum can be preserved. It is useful to cover the small bowel and to prevent ileus.

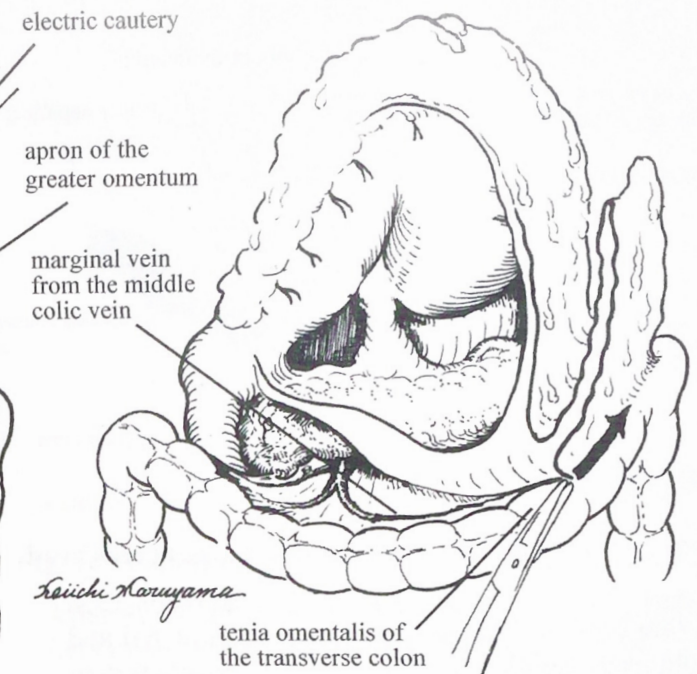


Fig.10 Division line for total omento-bursectomy

For the cases with possibility of metastasis in the bursa and peritoneal cavity (T2 and T3 tumor) and negative washing cytology, the total omento-bursectomy is indicated. This procedure will start at separation of the greater omentum from the tenia omentalis.

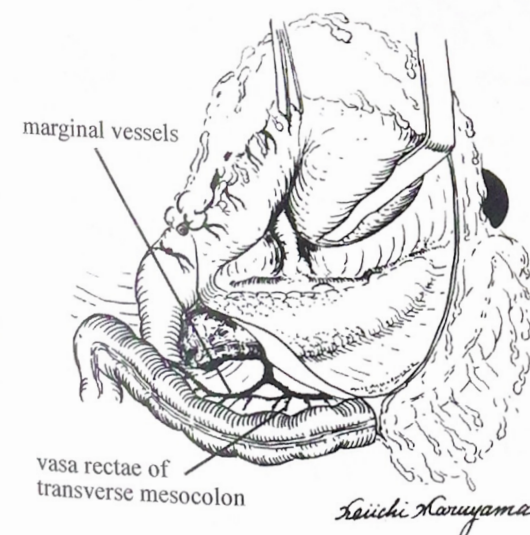


Fig. 11 Right side bursectomy to expose the infrapyloric nodes (No. 6)

Even for the apron preserving cases, this procedure is essential to remove No. 6 nodes. During the separation, the vasa rectae of the transverse colon, marginal vessels, and the middle colic vein are the useful index to trace the correct plane.

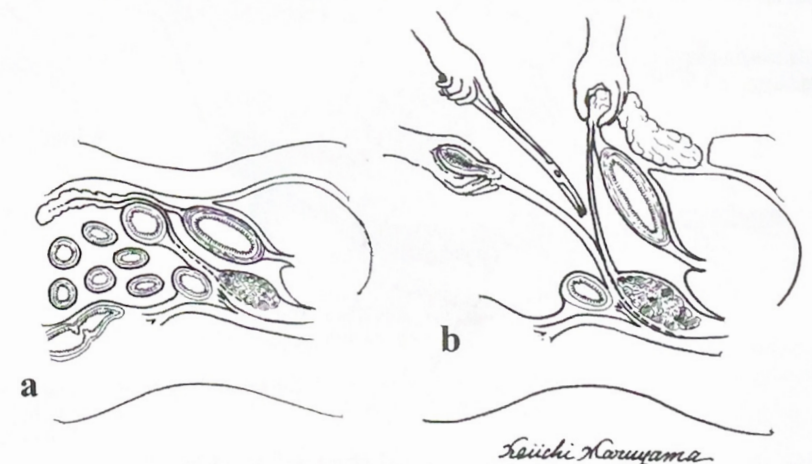
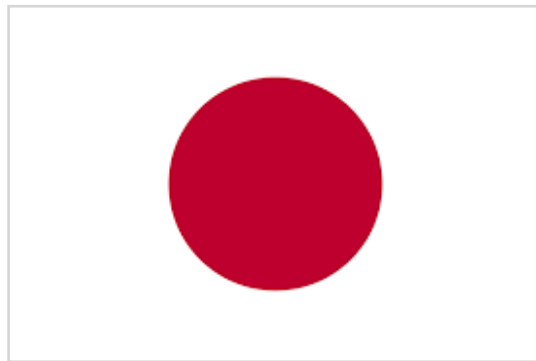
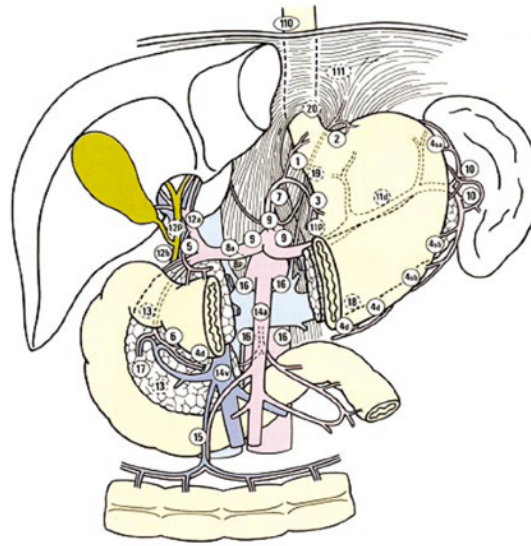
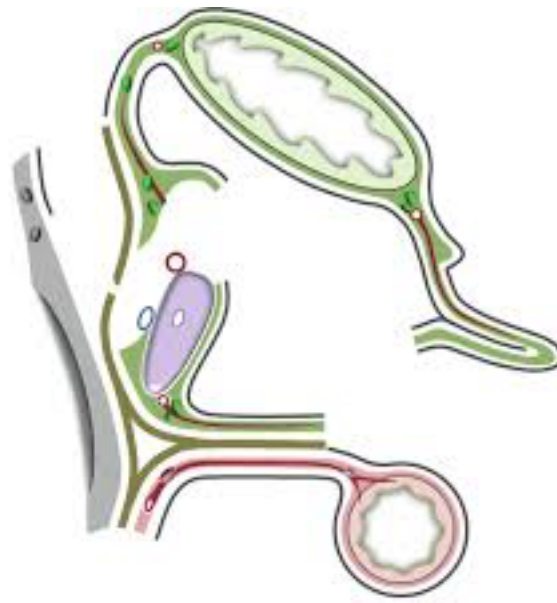


Fig. 12 Separation of the anterior sheet (dorsal mesogastrium) and posterior sheet of the mesocolon

Because of different embryonic origin, the anterior and posterior sheets have no vascular connection (a). These two membranes can be separated easily without bleeding. Assistant should tracts the transverse colon downward to make the mesocolon flat. Then the operator lift the greater omentum upward and push the mesocolon and the veins downward by scissors (b).



Lenfadenektomi
Bursektomi
Omentektomi
Splenektomi
Pankreatektomi
MIS
EGJ
Evre 4
Neoadj/Adj Tx
.....
.....



KILAVUZLAR

~1880

J. Pean 

L. Rydigier 

T. Billroth 

~1950

~1950-80

T. Kajitani 

I. Ohashi 

D. Jinnai 

~2000

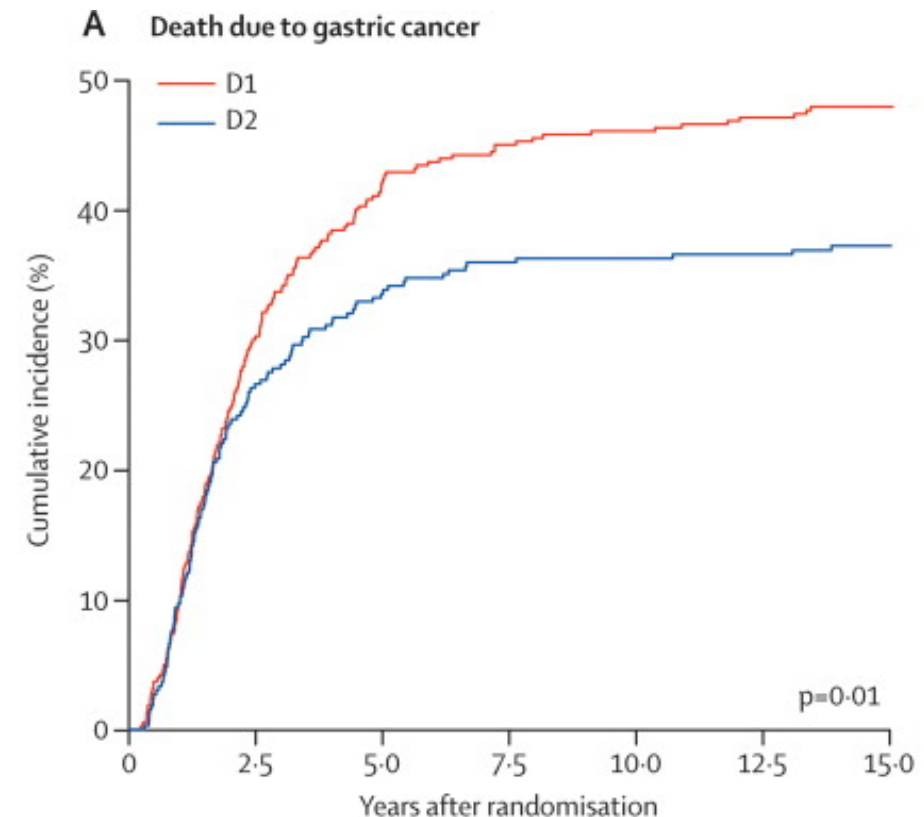
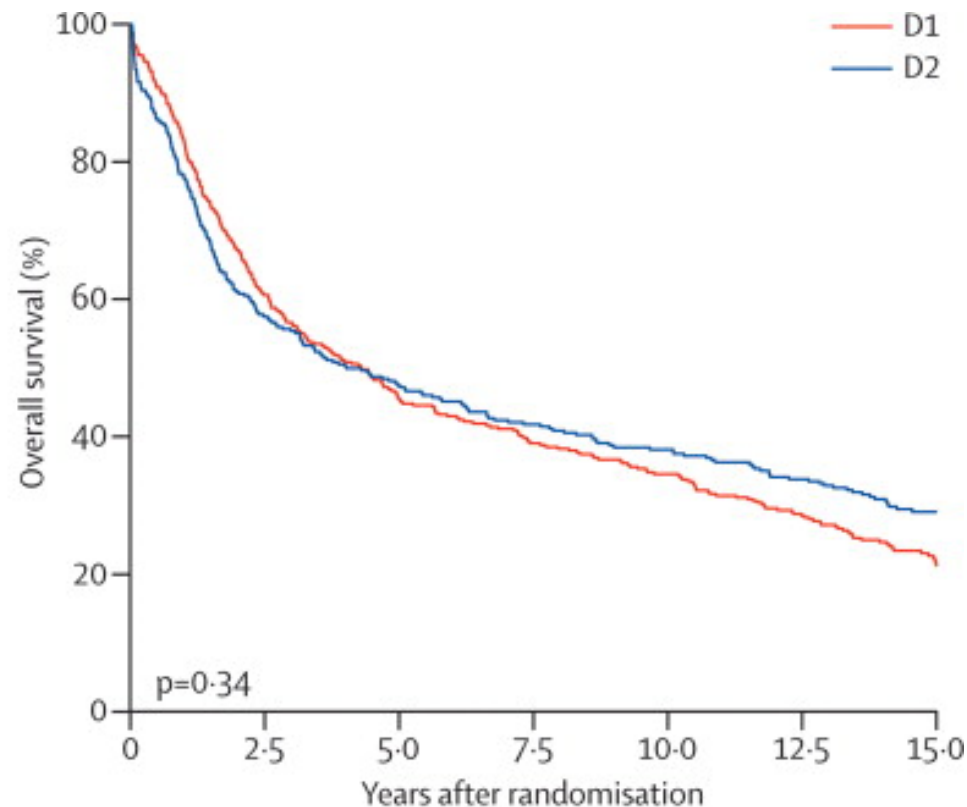
Lenfadenektomi



D1 vs D2

D2 vs D2+PALN

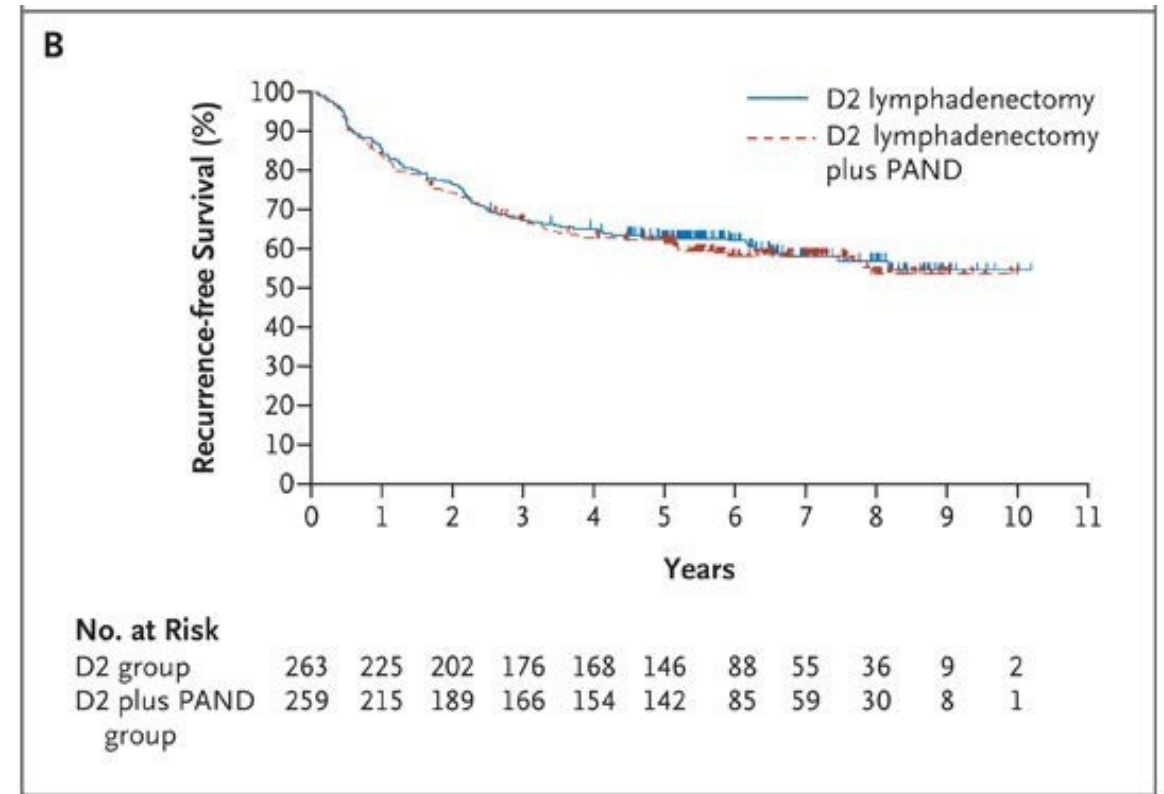
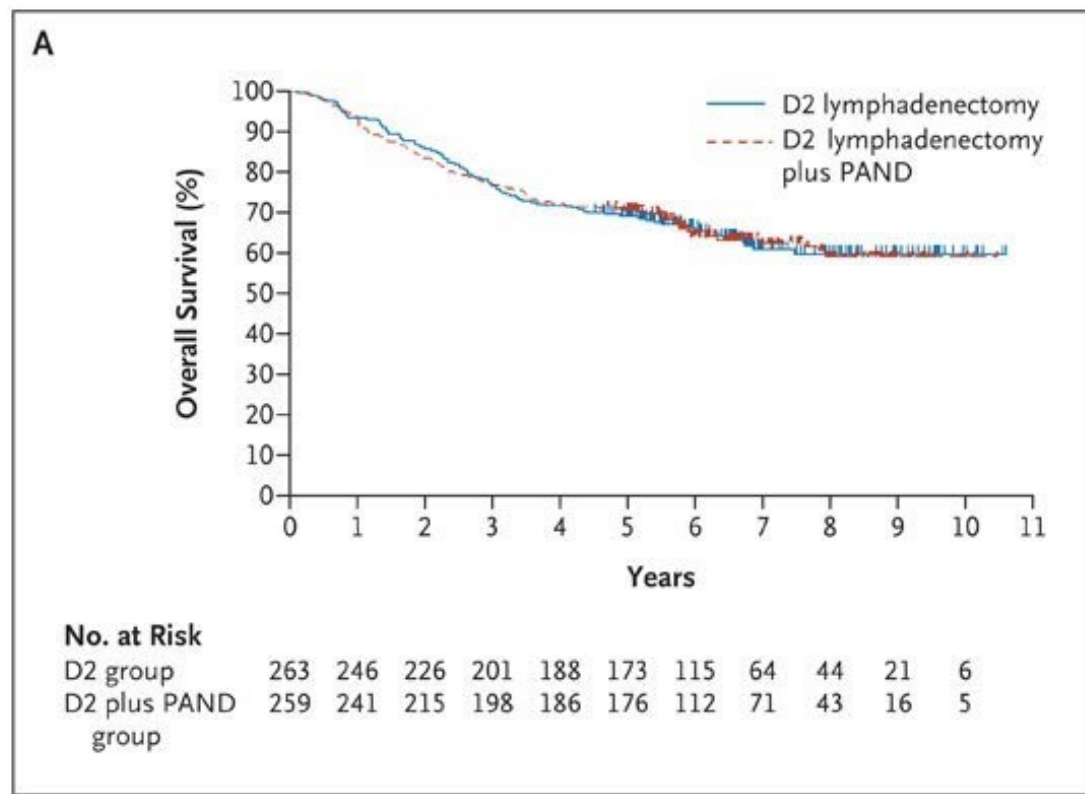
D1 vs D2



D2 lymphadenectomy is associated with **lower locoregional recurrence** and **gastric-cancer-related death** rates than D1 surgery.

D2 lymphadenectomy is the **recommended** surgical approach for patients with resectable (curable) gastric cancer.

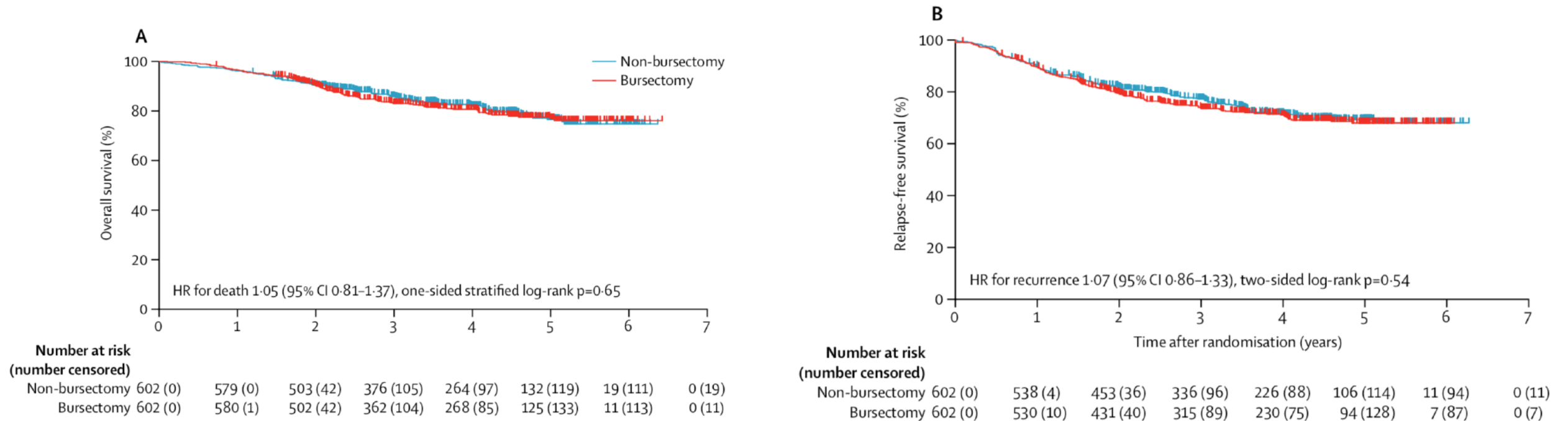
D2 vs D2+PALN



As compared with D2 lymphadenectomy alone, treatment with

D2 lymphadenectomy plus PAND does not improve the survival rate in curable gastric cancer.

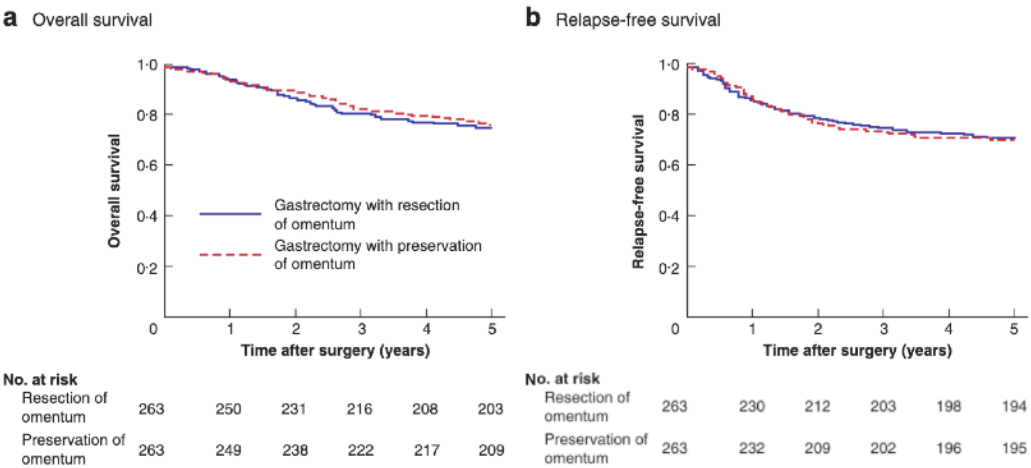
Bursektomili vs Bursektomisiz



Bursectomy **did not provide a survival advantage** over non-bursectomy.

D2 dissection with omentectomy alone should be done as a standard surgery for resectable cT3-T4a gastric cancer.

Total vs Parsiyel



Overall survival and disease recurrence were **comparable** in patients with cT3–4 gastric cancer who underwent GPO or GRO.

Ri M et al. BJS 2020

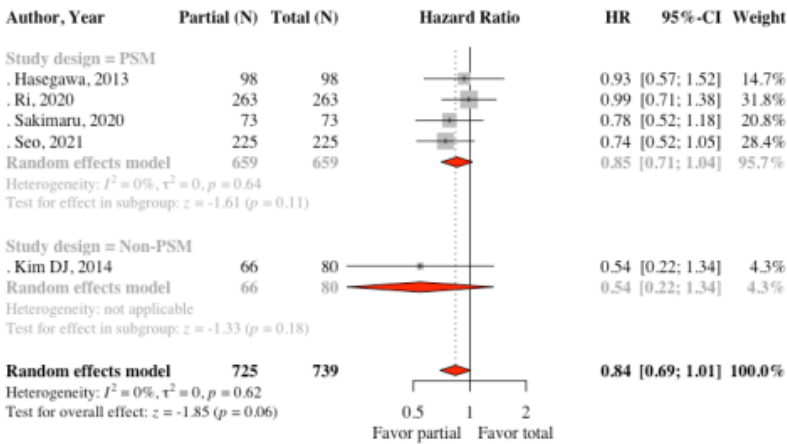


Figure 2. Forest plot comparing disease-free survival between the partial omentectomy group and the total omentectomy group.

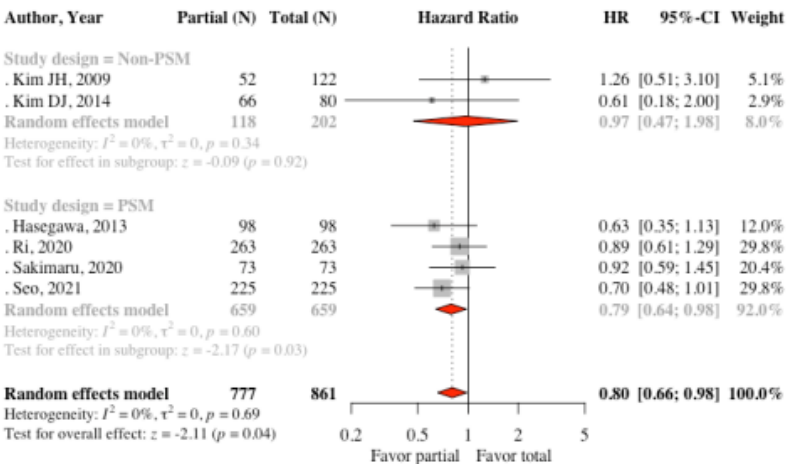


Figure 3. Forest plot comparing overall survival between the partial omentectomy and the total omentectomy group.

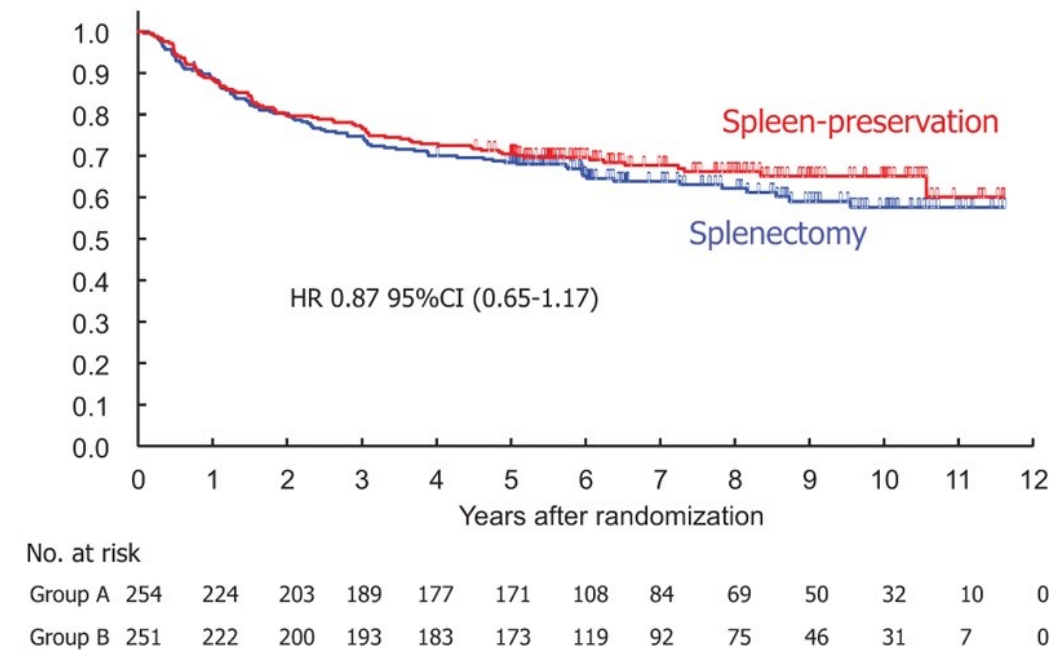
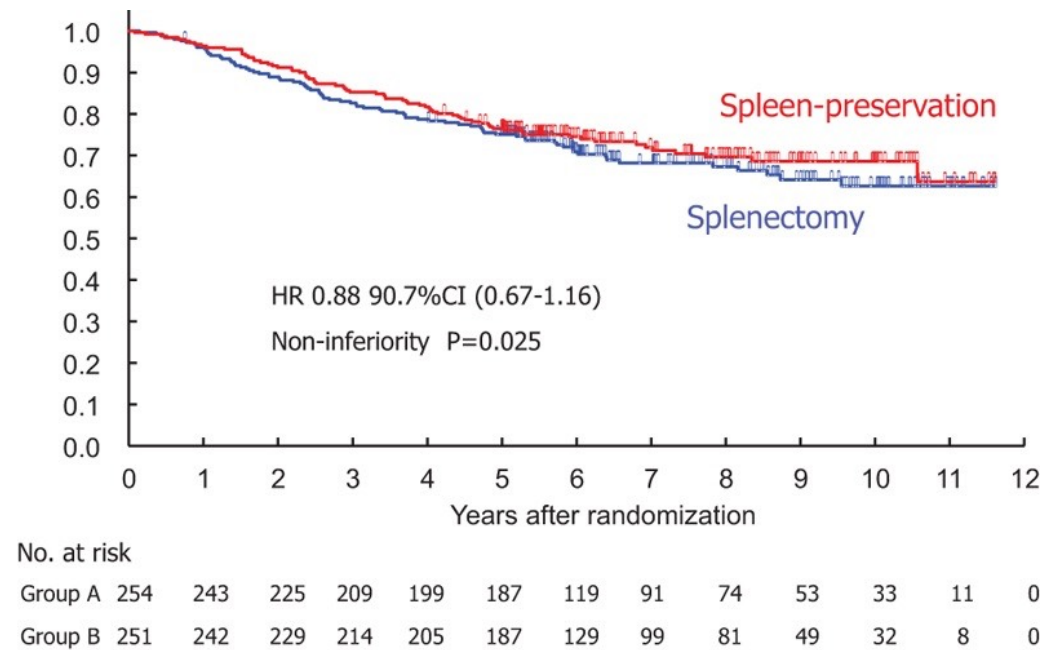
Chai SW et al. Cancers 2021

Recruitment status	Open public recruiting
Unique ID issued by U MIN	UMIN000036253
Receipt No.	R000041060
Scientific Title	Randomized controlled phase III trial to evaluate omentum preserving gastrectomy for patients with advanced gastric cancer (JCOG1711, ROAD-GC)
Date of disclosure of the study information	2019/03/19

~1050 hasta
Tarih: 2019-2031

Recruitment status	Open public recruiting
Date of protocol fixation	2019 Year 01 Month 07 Day
Date of IRB	2019 Year 02 Month 28 Day
Anticipated trial start date	2019 Year 03 Month 19 Day
Last follow-up date	2031 Year 09 Month 19 Day

Splenektomili vs Splenektomisiz



In total gastrectomy for proximal gastric cancer that does not invade the greater curvature, splenectomy should be avoided as it increases operative morbidity **without improving survival**.

Splenektomili vs Splenektomisiz

TABLE 1. Eligibility Criteria of the Trial

Inclusion criteria

Before operation

Histologically proven adenocarcinoma

A T2/T3/T4* tumor located in the upper third of the stomach

Absence of or 3 cm or shorter esophageal invasion by endoscopy and barium fluoroscopy

Absence of tumor invasion of the greater curvature

Not a stump cancer

Not of linitis plastica type (Borrmann type 4)

N0/N1/N2* and M0 by diagnostic imaging

Sufficient organ functions for total gastrectomy with splenectomy

Age between 20 and 75 years inclusive

No previous chemotherapy or surgery for gastric cancer

Written informed consent from the patient

During operation

Absence of or 3 cm or shorter esophageal invasion, and absence of tumor invasion of the greater curvature by inspection and palpation

T2/T3/T4* and N0/N1/N2* by inspection and palpation

Peritoneal lavage cytology is negative for cancer cells

Curative operation is feasible without combined resection of the pancreas and spleen

No gross lymph node metastasis along the splenic artery or splenic hilum

* Tumors were staged according to both Japanese Classification (13th ed, 1998) and UICC-TNM (6th ed., 2006).

Exclusion criteria

Liver cirrhosis, or portal hypertension

Idiopathic thrombocytopenic purpura, or other diseases for which splenectomy is a treatment option

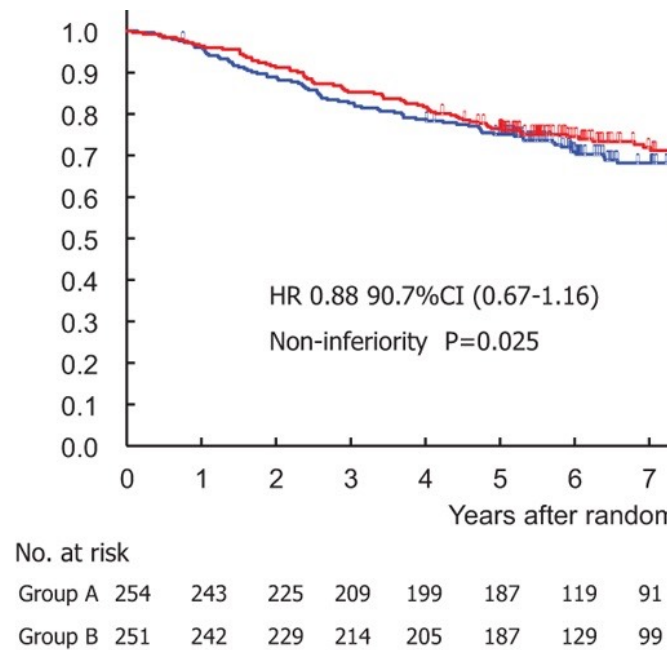
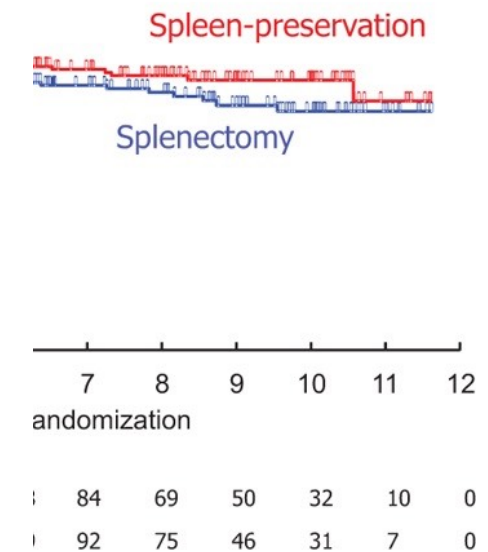
Previous splenectomy

Interstitial pneumonia, pulmonary fibrosis, or extensive pulmonary emphysema

Synchronous or metachronous malignancy in other organs except for carcinoma in situ or intramucosal tumor cured by local resection

Pregnant, or possibly pregnant

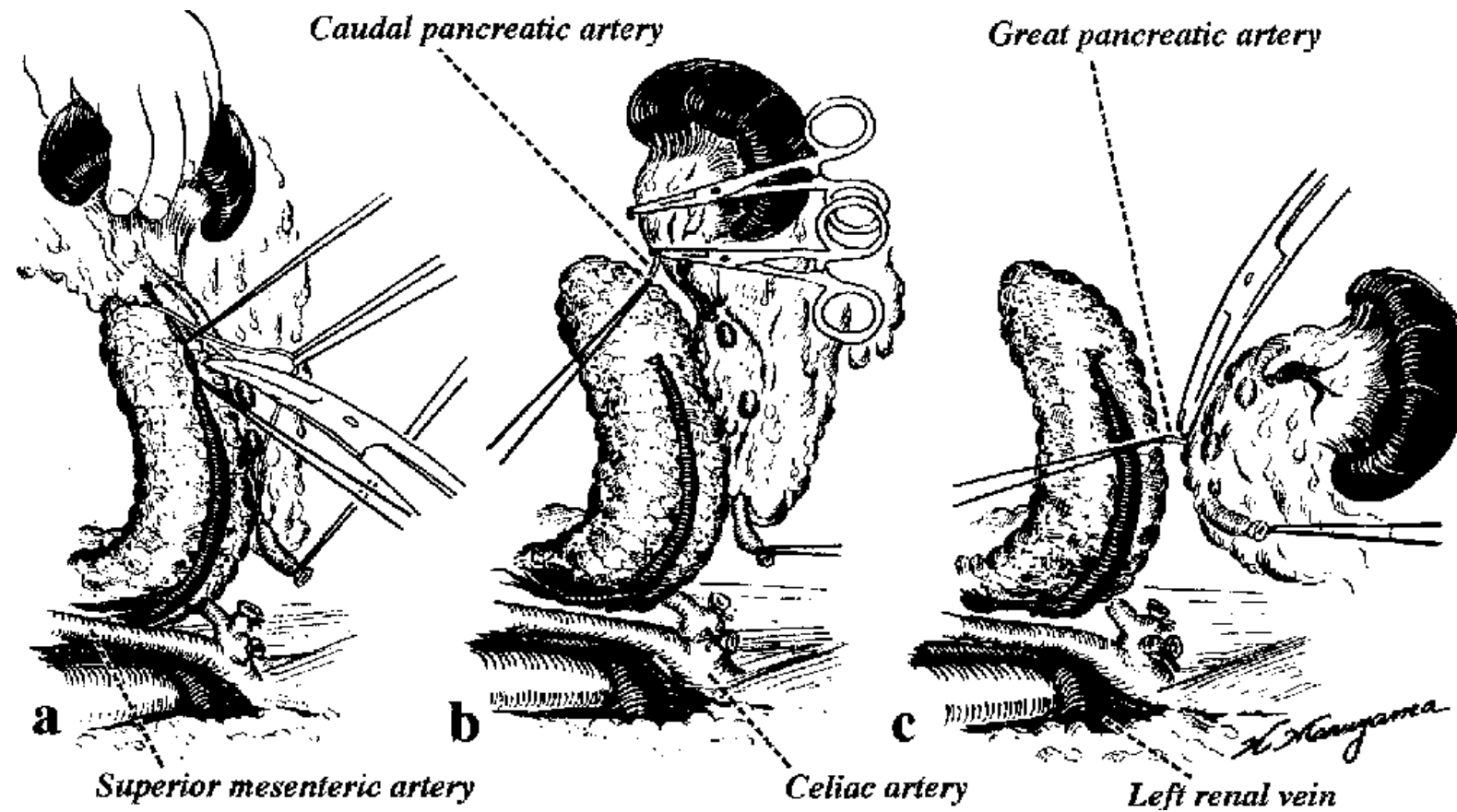
Psychotic disorders inappropriate for participation in clinical trials



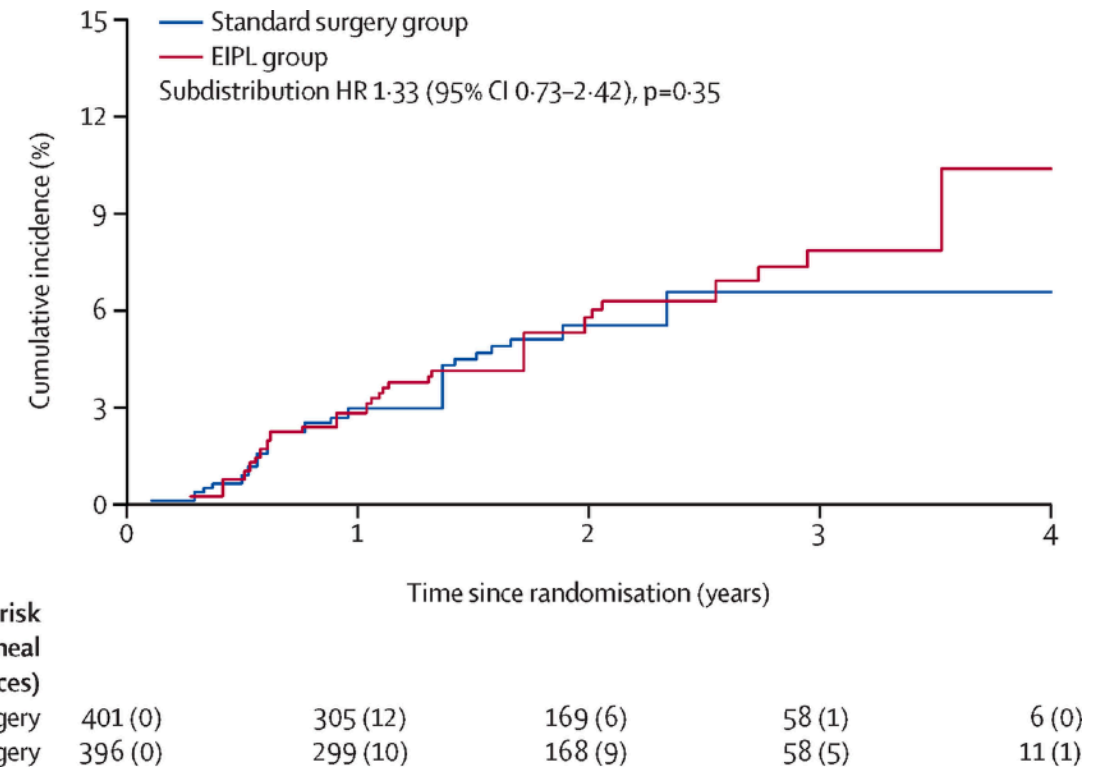
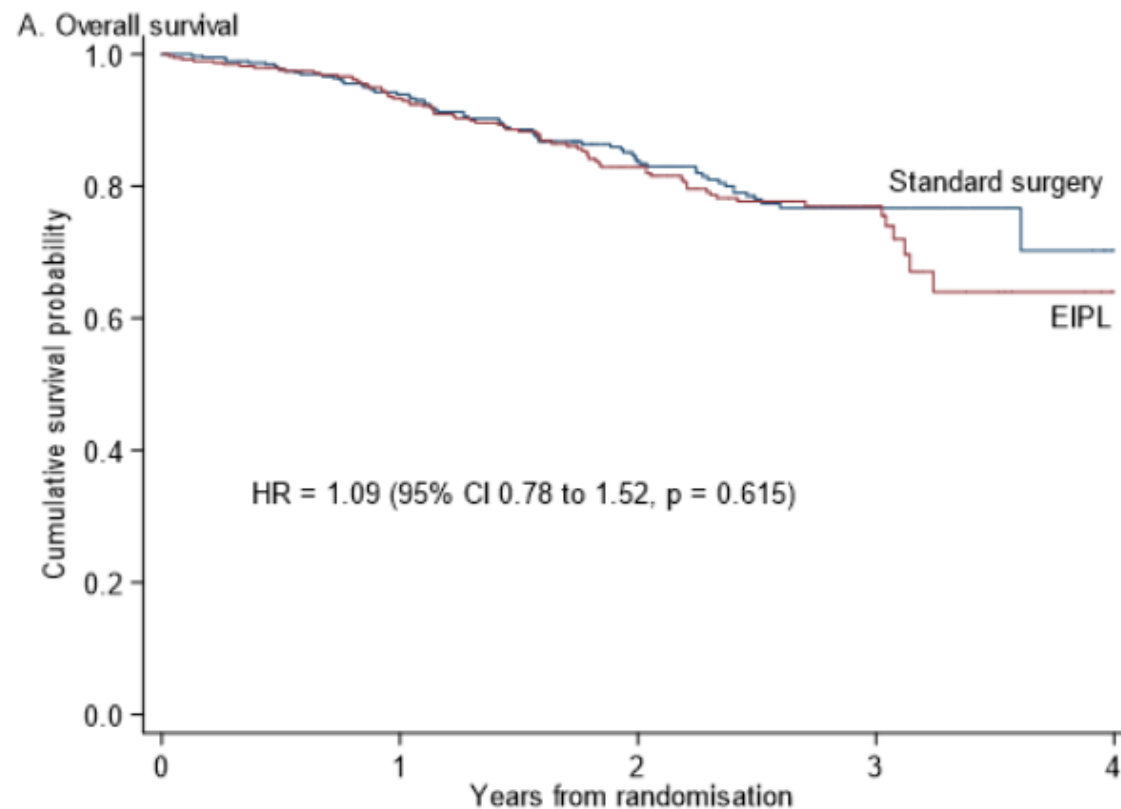
In total gastrectomy for proximal gastritis increases operative morbidity **witho**

plenectomy should be avoided as it

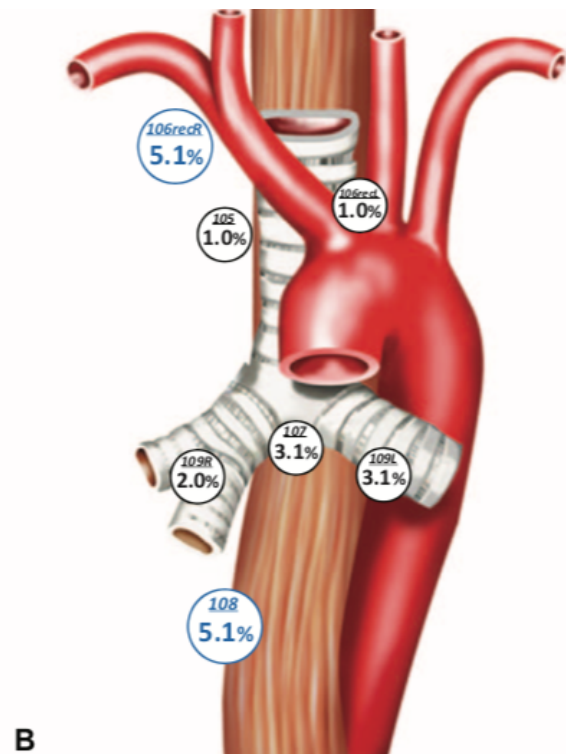
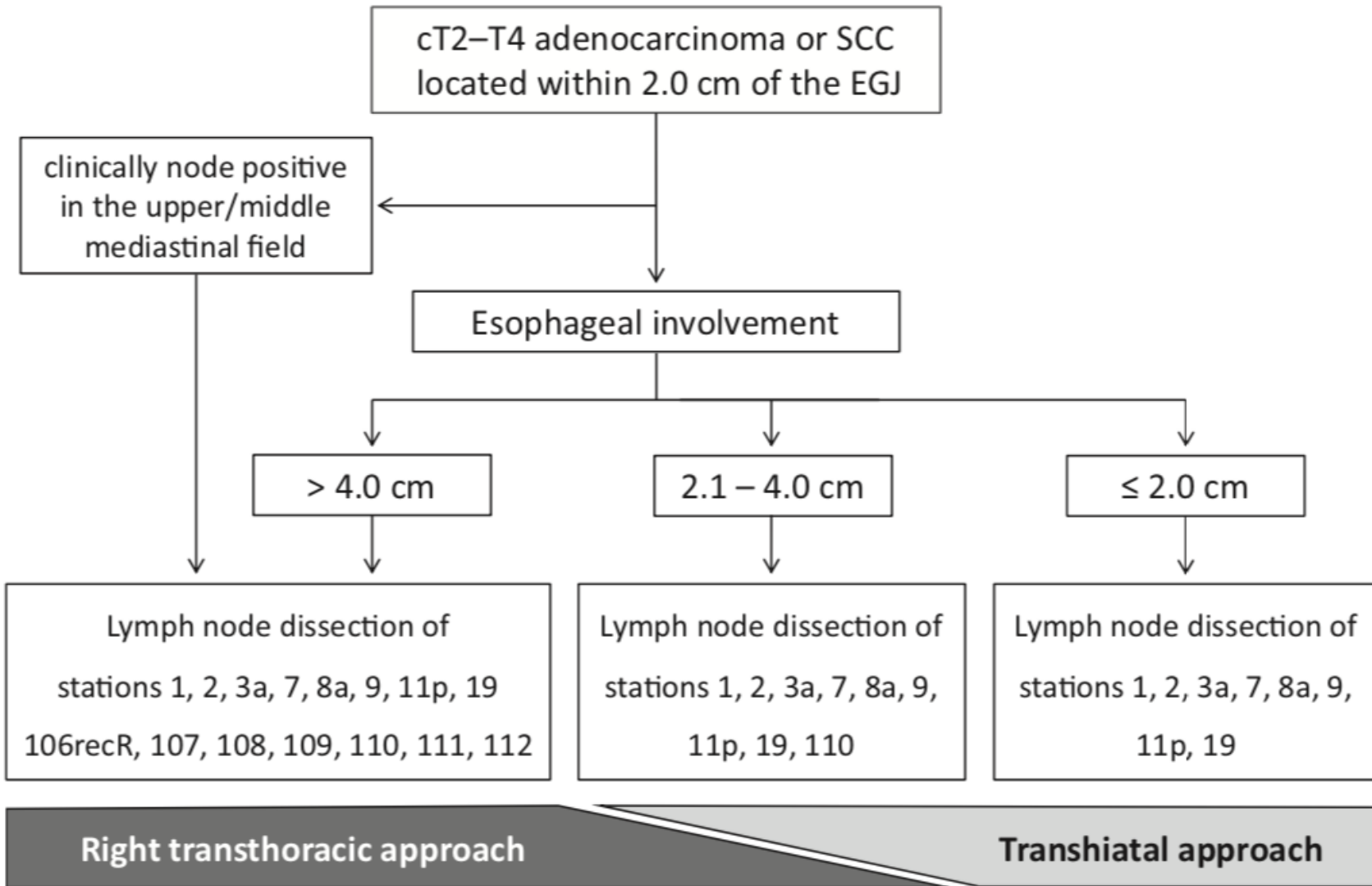
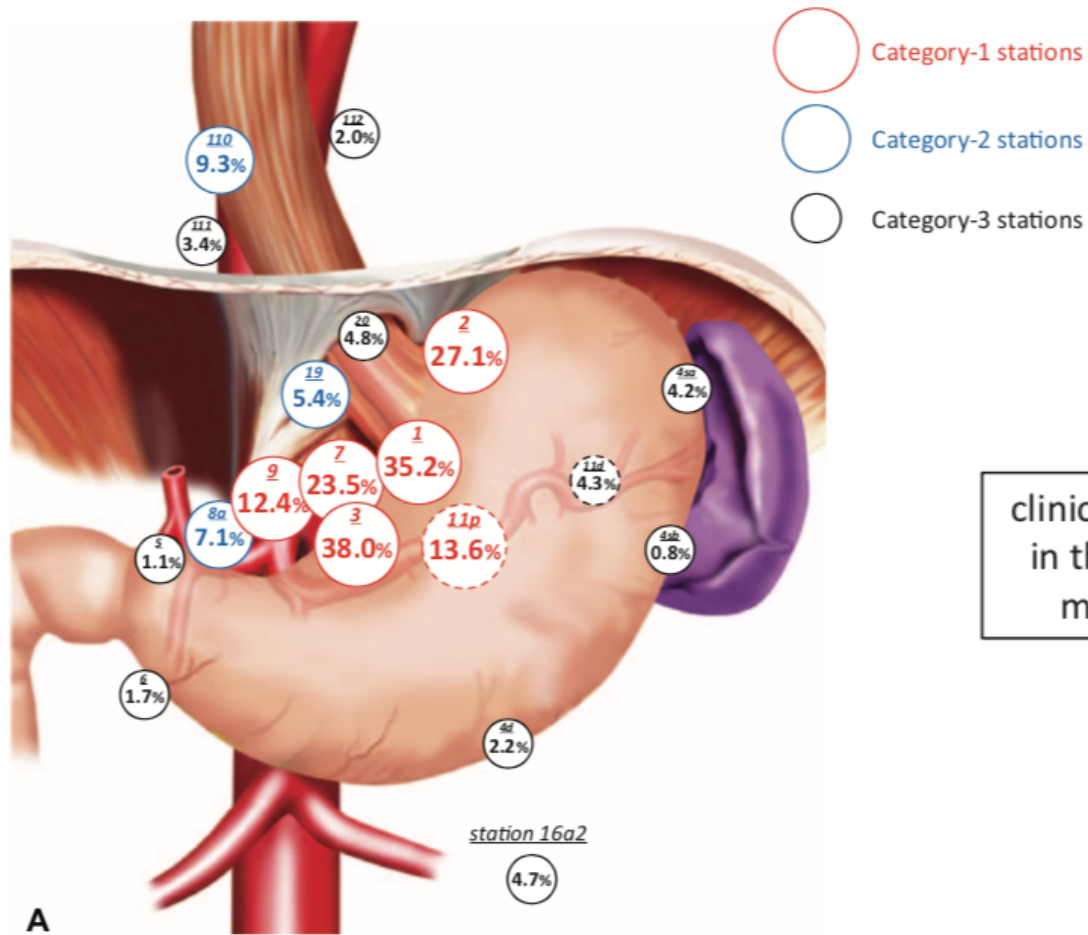
Pancreas-preserving surgery



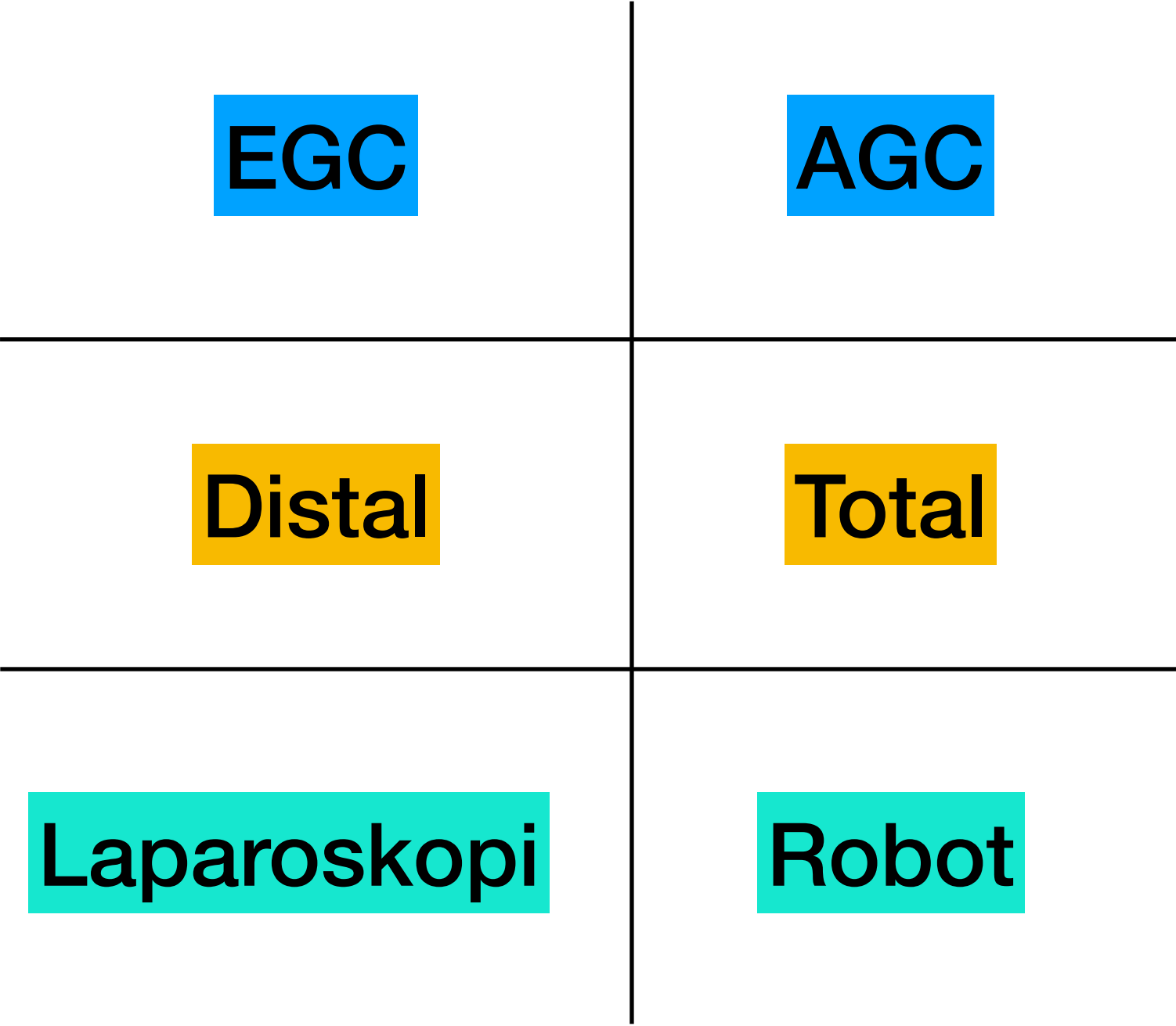
Extensive Intrapertitoneal Lavage



Extensive lavage with saline **did not reduce risk of peritoneal recurrence nor improve survival** after gastric cancer surgery. It may increase risk of postoperative complications



Minimal İnvaziv Cerrahi



EGC

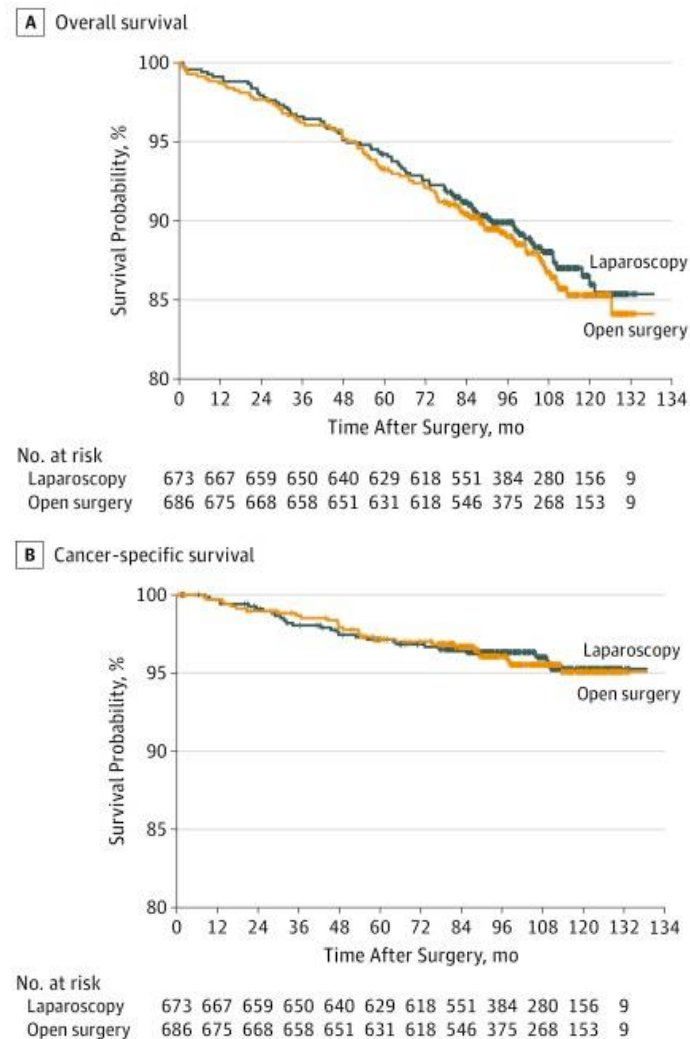
Distal

Laparoskopi



RCT

KLASS01

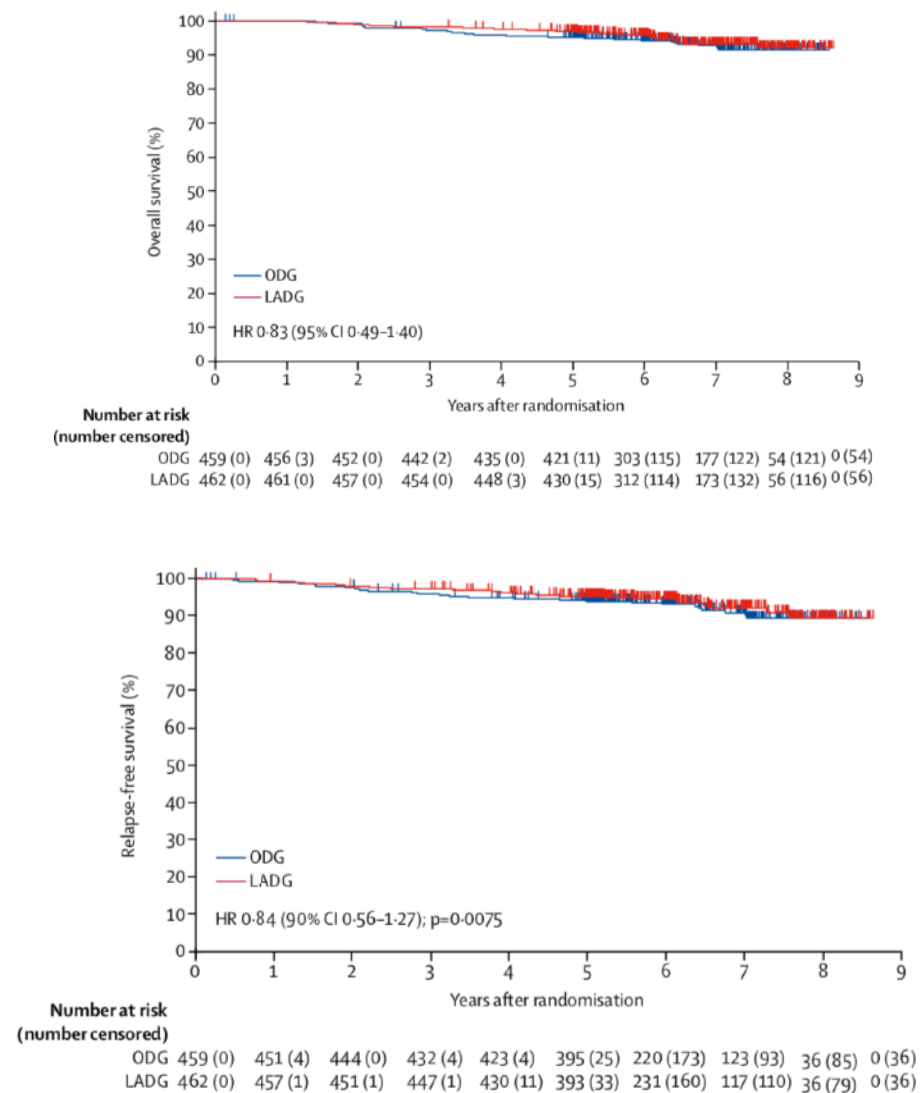


5y-OS

94.2% LDG grup

93.3% ODG grup

JCOG0912



5y-RFS

95.1% LDG grup

94% ODG grup

similar overall and cancer-specific survival rates between patients receiving laparoscopic and open distal gastrectomy

non-inferiority of LADG compared with ODG for clinical stage I gastric cancer relapse-free survival, suggesting that LADG should be considered a standard treatment option when performed by experienced surgeons.

AGC

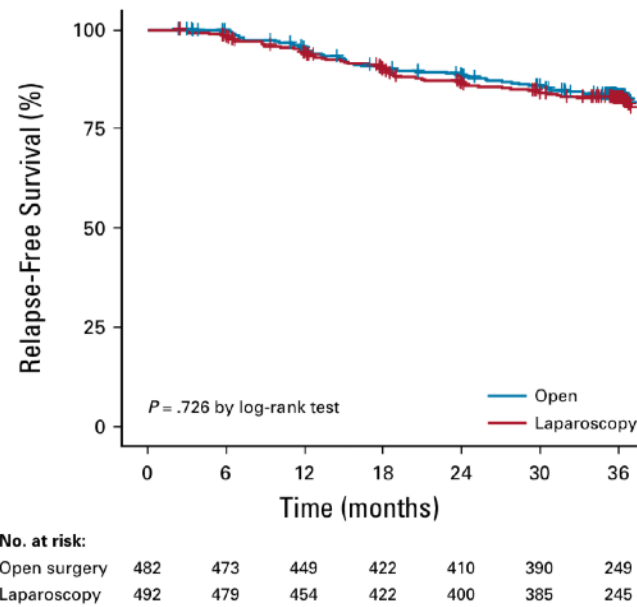
Distal

Laparoskopi



RCT

KLASS02

3y-RFS

80.3% LDG grup

81.3% ODG grup

Laparoscopic distal gastrectomy with D2 lymphadenectomy was **comparable** to open surgery in terms of relapse-free survival for patients with locally advanced gastric cancer.

Hyung WJ et al. J Clin Oncol 2020

JLSSG0901

Progress	
Recruitment status	No longer recruiting
Date of protocol first sign	2009 Year 09 Month 15 Day
Date of last sign	2021 Year 08 Month 01 Day
Anticipated trial start date	2009 Year 11 Month 01 Day
Last follow-up date	2021 Year 08 Month 01 Day

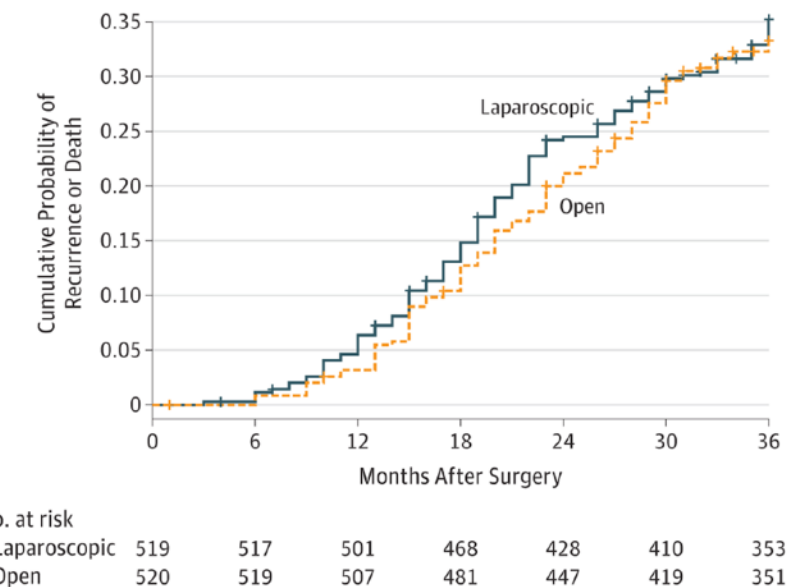
The **technical safety** of LADG with D2 lymph node dissection for locally advanced gastric cancer was demonstrated

Inahi N et al. World J Surg 2015

5-yr RFS Hazard ratio: 0.9556
(95%CI: 0.7226-1.2637 < 1.31)
Non-inferiority P=0.0317

IGCC 2022

CLASS01

3y-DFS

76.5% LDG grup

77.8% ODG grup

- Laparoscopic distal gastrectomy, compared with open distal gastrectomy, **did not result in inferior** disease-free survival at 3 years.
- Laparoscopic distal gastrectomy with D2 lymphadenectomy performed by **experienced** surgeons in high-volume specialized institutions resulted in similar 5-year overall survival

Yu J et al. JAMA 2019
 Huang C et al. JAMA Surg 2021

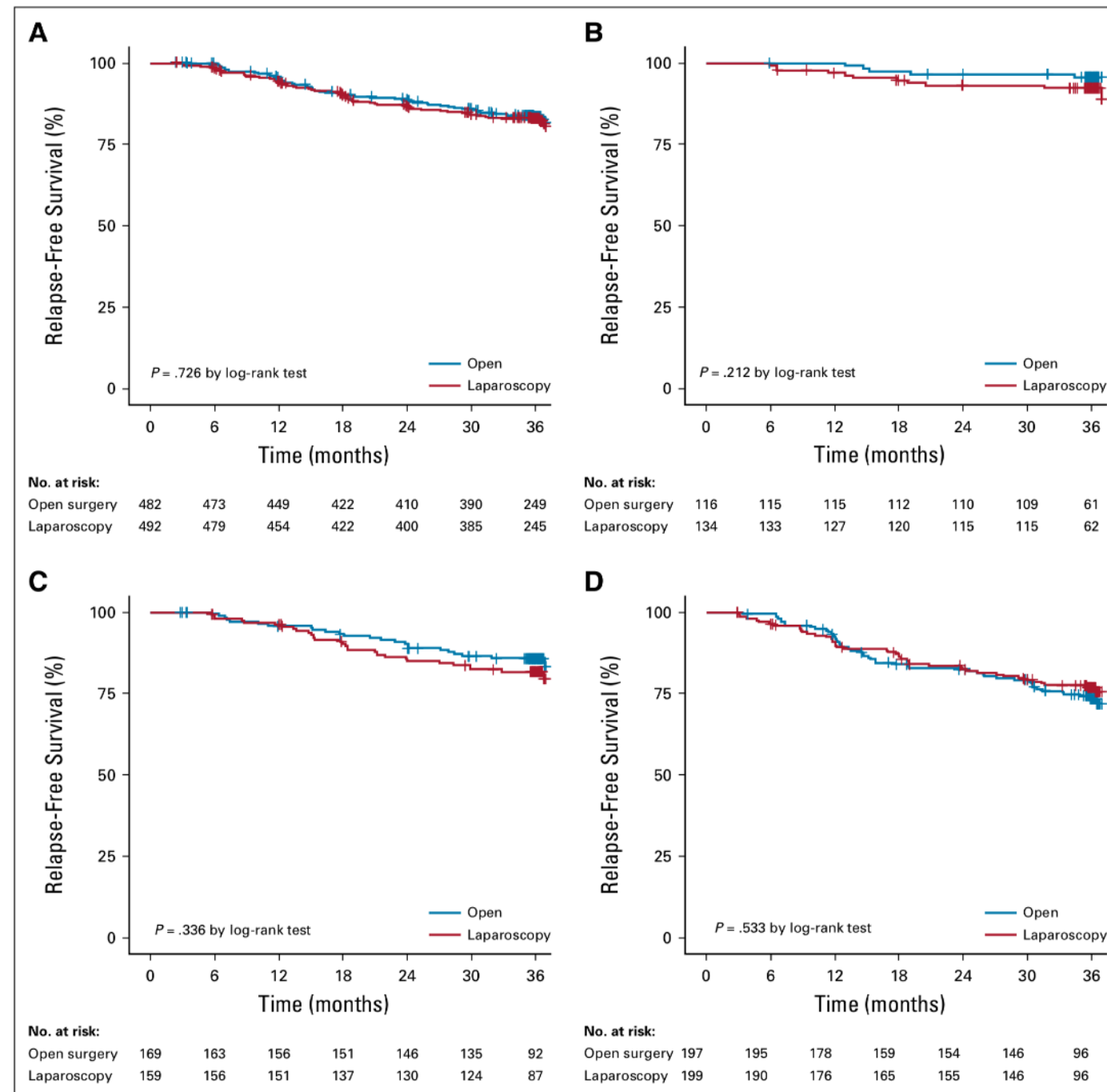
AGC

Distal

Laparoskopi



KLASS02



3y-RFS

80.3% LDG grup

81.3% ODG grup

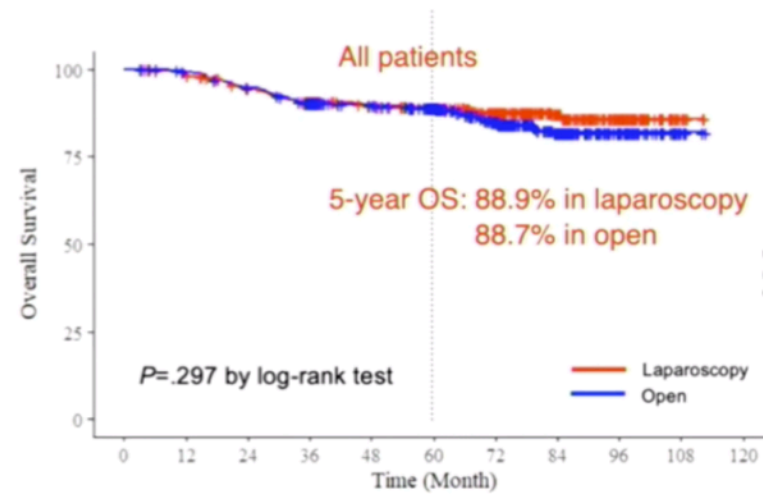
AGC

Distal

Laparoskopi

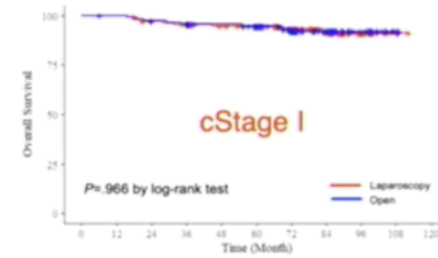
⚡ RCT

KLASS02



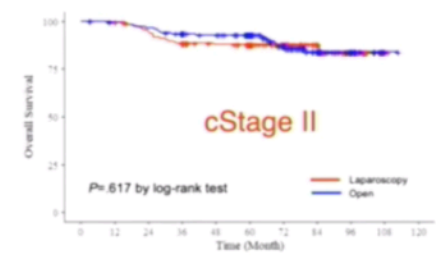
No. at risk:

Laparoscopy	492	480	455	422	347	303	225	138	67	8	0
Open surgery	482	472	449	419	349	305	229	129	62	7	0



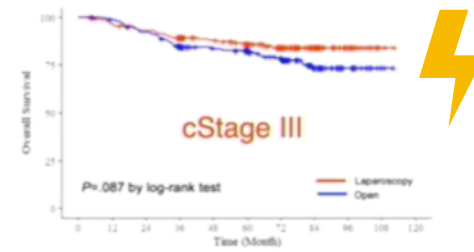
No. at risk:

Laparoscopy	134	134	128	120	99	87	66	43	21	4	0
Open surgery	116	115	111	109	90	84	66	42	19	3	0



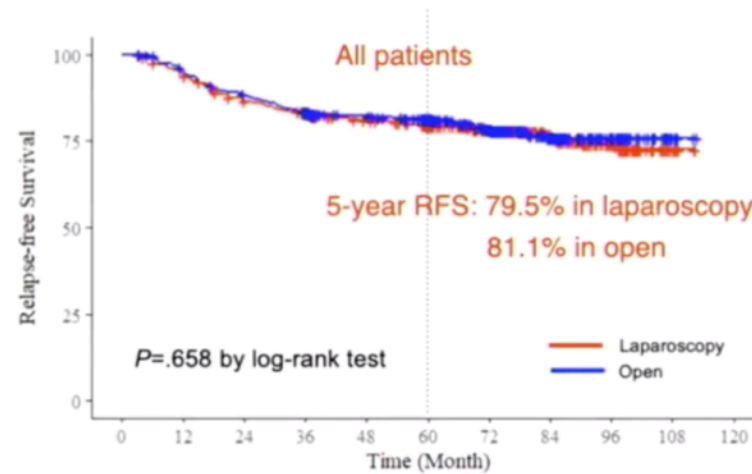
No. at risk:

Laparoscopy	159	158	147	135	115	99	71	46	25	2	0
Open surgery	169	165	160	151	129	103	69	41	23	2	0



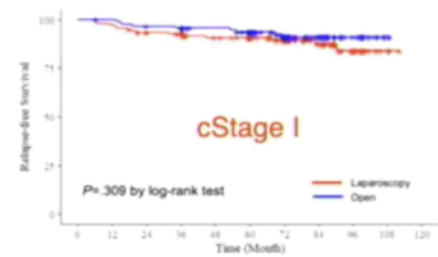
No. at risk:

Laparoscopy	199	188	180	167	133	117	88	49	21	2	0
Open surgery	197	192	178	159	130	118	94	46	20	2	0



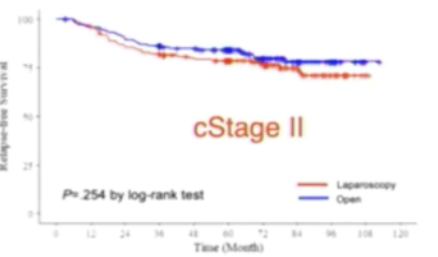
No. at risk:

Laparoscopy	492	462	419	390	328	285	209	126	61	8	0
Open surgery	482	455	420	391	332	290	219	125	62	7	0



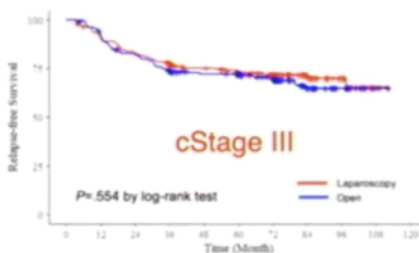
No. at risk:

Laparoscopy	134	130	123	117	97	85	64	41	20	4	0
Open surgery	116	115	110	109	90	83	65	41	19	3	0



No. at risk:

Laparoscopy	159	153	134	126	111	95	67	42	22	2	0
Open surgery	169	160	151	142	129	97	65	41	23	2	0



No. at risk:

Laparoscopy	199	179	162	147	120	105	78	43	19	2	0
Open surgery	197	180	159	140	119	110	84	43	20	2	0

EGC

Total

Laparoskopi



KLASS03

Morbidity 20.6% (33/160)

Mortality 0.6% (1/160)

Major complications 9.4% (15/160)

Reoperations 1.9% (3/160)

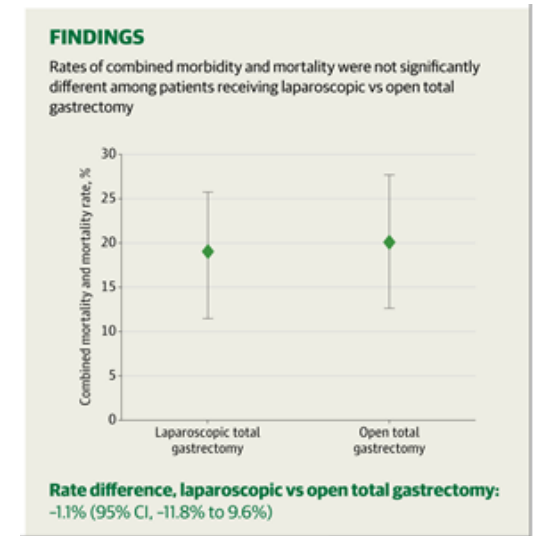
JCOG1401

EJ Anastomosis leakage 2.5% (6/244)

Conversion 1.7%

Mortality 0

CLASS02 (RCT)



LTG performed by experienced surgeons showed **acceptable** postoperative morbidity and mortality for patients with clinical stage I gastric cancer.

confirmed the **safety** of LATG/LAPG

The results of the CLASS02 trial showed that the **safety** of LTG with lymphadenectomy by experienced surgeons for clinical stage I.

AGC

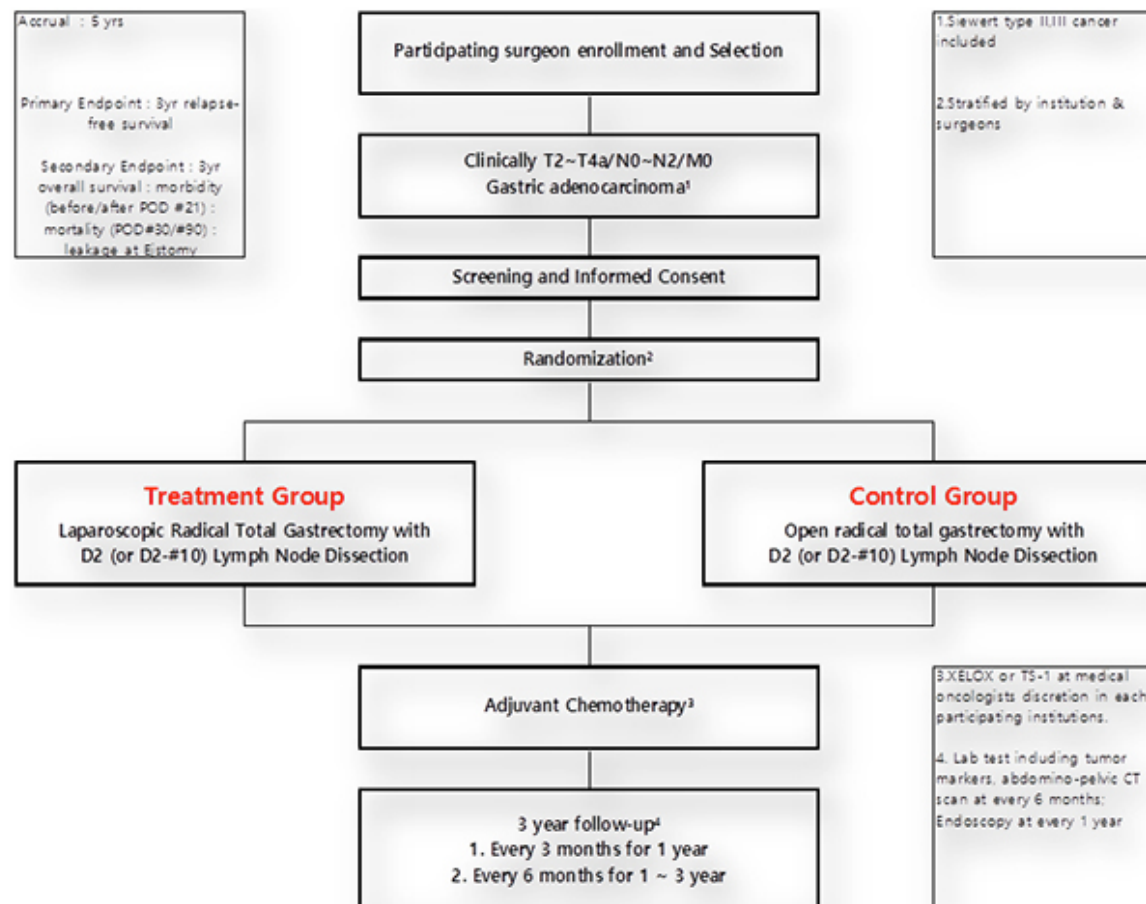
Total

Laparoskopi

 No RCT

KLASS06

Multicenter, Prospective, Phase III trial
Primary endpoint: 3 year relapse free survival
Estimated sample size - 772 patients



~772 hasta
Tarih: 2018-2027

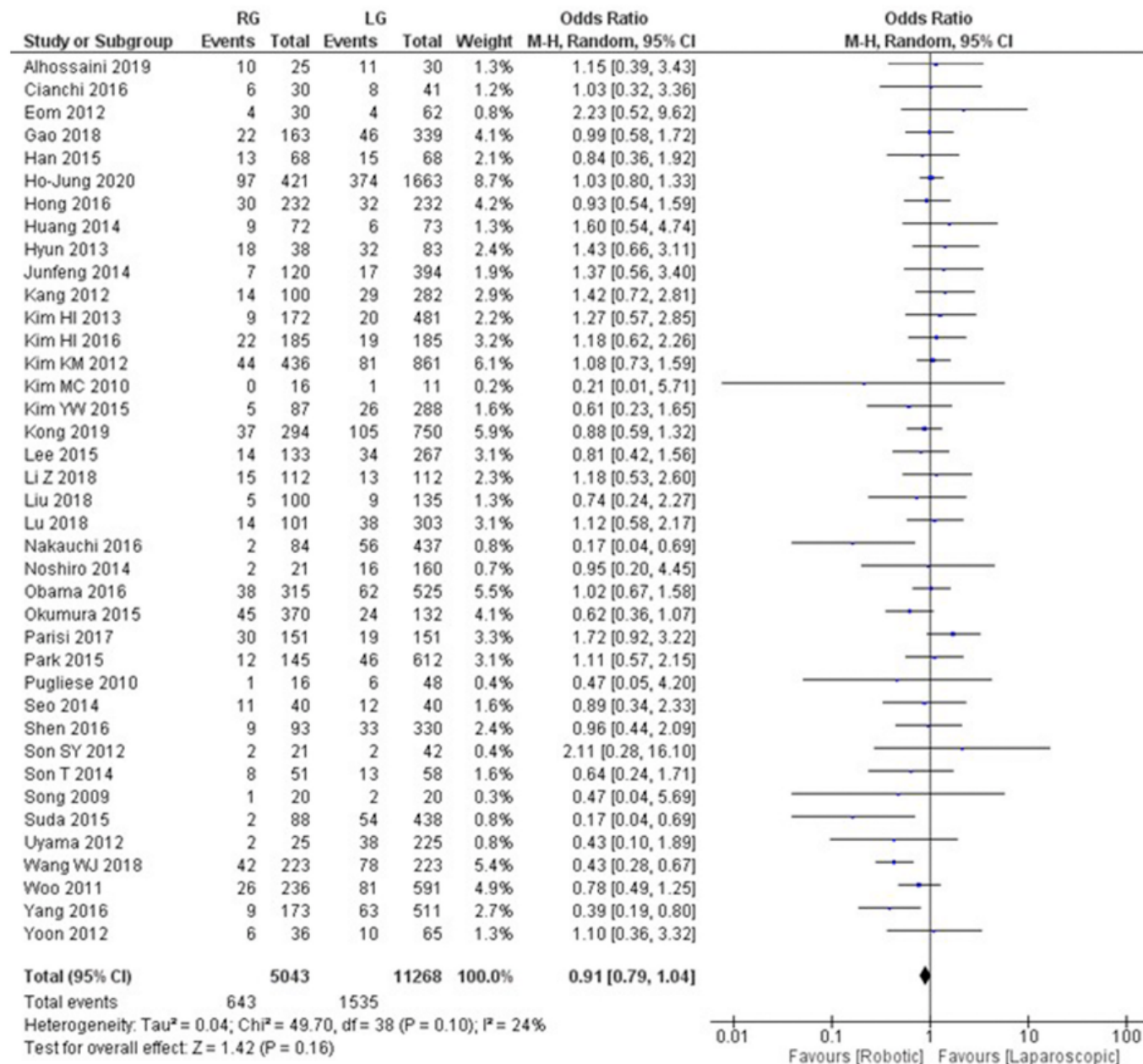


Fig. n.10. Overall complication.

higher **operating time** [MD 44.73, (95%CI 36.01, 53.45) $p < 0.00001$]
 less **intraoperative blood loss** [MD -18.24, (95%CI -25.21, 11.26) $p < 0.00001$]
 lower rate of **major surgical complication** [OR 0.66, (95%CI 0.49, 0.88) $p = 0.005$]
 increased number of **retrieved lymph nodes** [MD 1.84, (95%CI 0.84, 2.84) $p = 0.0003$]

2018-2020

Lap vs. Robotik - **RCT**

intra-abdominal infectious complications

No significant difference in the incidence of intra-abdominal infectious complications (per-protocol)

(10 of 117 [**8.5%**] in the LG group vs 7 of 113 [**6.2%**] in the RG group)

grade II or higher was significantly higher in the LG group (23 [19.7%]) than in the RG group (10 [8.8%]) (P = .02)

grade IIIa or higher significantly higher in the LG group (19 [16.2%]) than in the RG group (6 [5.3%]) (P = .01)

Robotik



Japan Clinical Oncology Group (日本臨床腫瘍研究グループ)
胃がんグループ

国立がん研究センター研究開発費 2020-J-3

「成人固形がんに対する標準治療確立のための基盤研究」班



JCOG1907 (MONALISA)

Gastric adenocarcinoma
cT1-2, cN0-2, not indicated for ESD
20 y.o. ≤, PS 0/1, BMI < 30

Randomization

Laparoscopic gastrectomy

Robotic gastrectomy

Primary endpoint: Intraabdominal infectious complication (C-D Grade II or worse)
Secondary endpoints: OS, RFS, Morbidity, Mortality, Completion rate of protocol Tx, Early postoperative outcomes
Sample size: 1040 pts.

JCOG1907

cT1-2N0-2 胃癌におけるロボット支援下胃切除術の腹腔鏡下胃切除術に対する

優越性を検証するランダム化比較試験実施計画書 ver. 1.1.0

Randomized controlled phase III trial to investigate superiority of

robot-assisted gastrectomy over laparoscopic gastrectomy for

clinical stage T1-2N0-2 Gastric Cancer patients

略称: MONA LISA study

グループ代表者: 寺島 雅典

静岡県立静岡がんセンター 胃外科

研究代表者: 寺島 雅典

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〒411-8777 静岡県駿東郡長泉町下長窪 1007

研究事務局: 幕内 梨恵

がん研究会有明病院 胃外科

〒135-8550 東京都江東区有明 3-8-31

2019年7月8日

JCOG 運営委員会プロトコルコンセプト承認(PC1907)

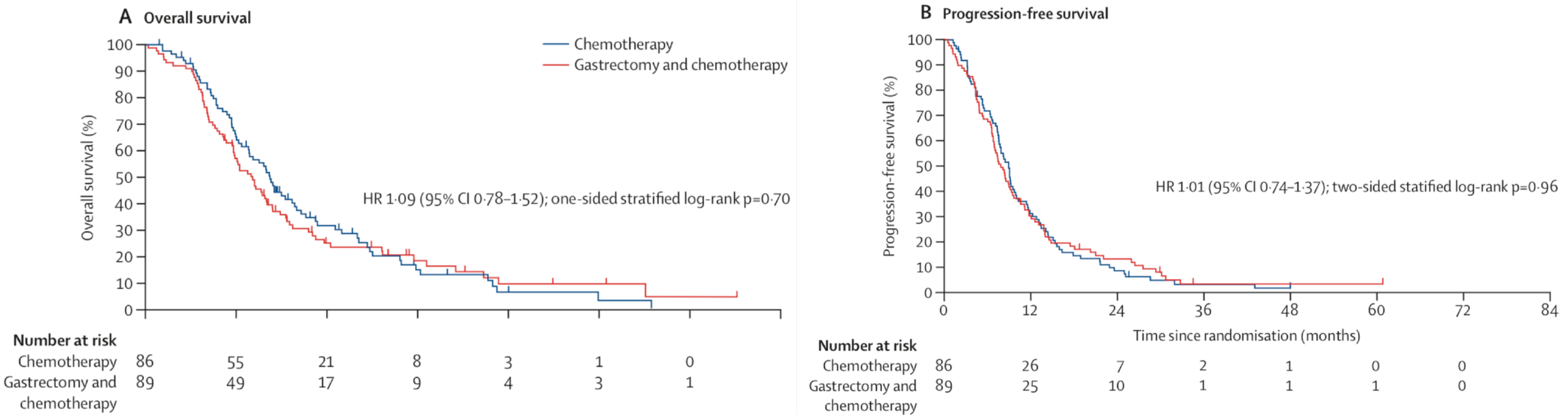
2020年1月19日

ver. 1.0.0 JCOG プロトコル審査委員会承認

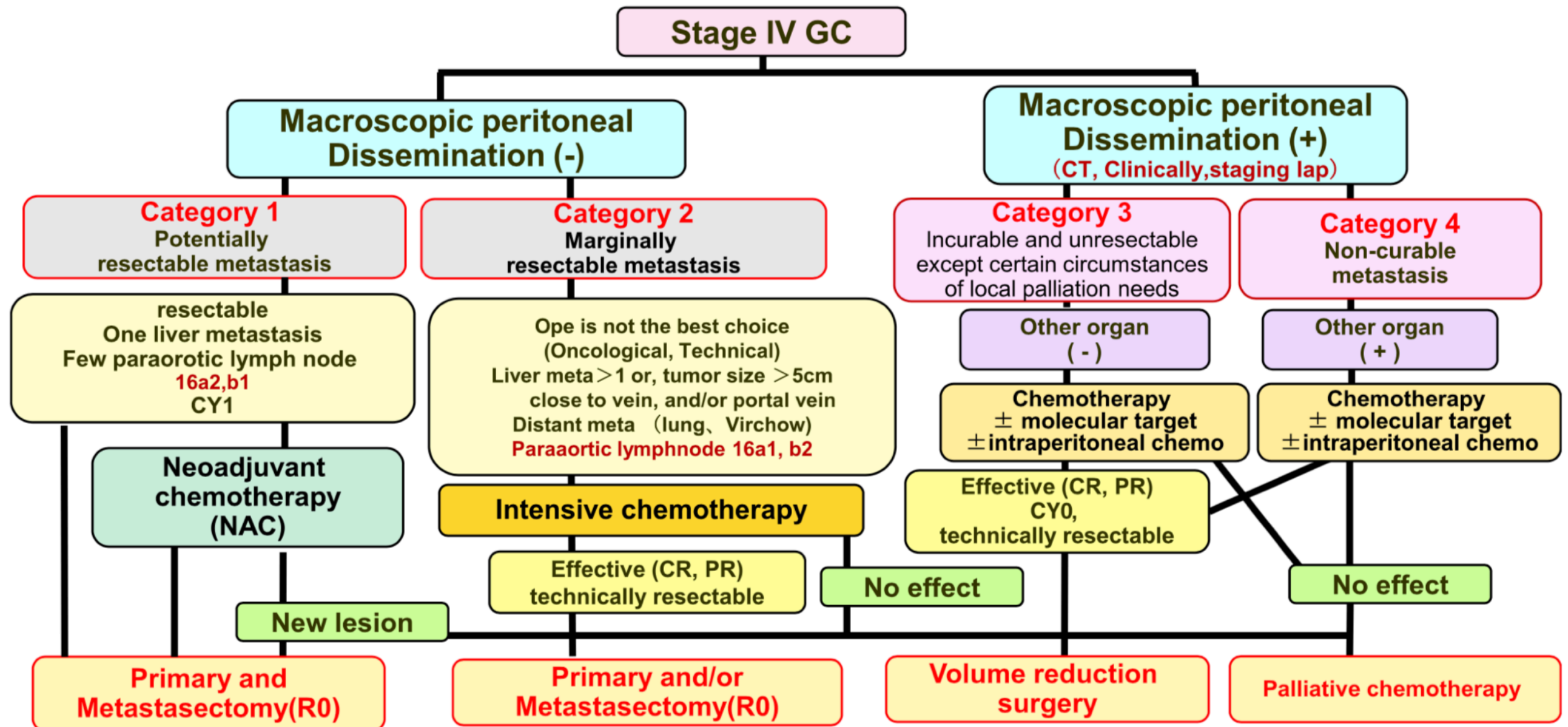
2021年5月28日

ver. 1.1.0 改訂 JCOG 効果・安全性評価委員会承認 6月4日発効

Metastatik Mide Kanseri:

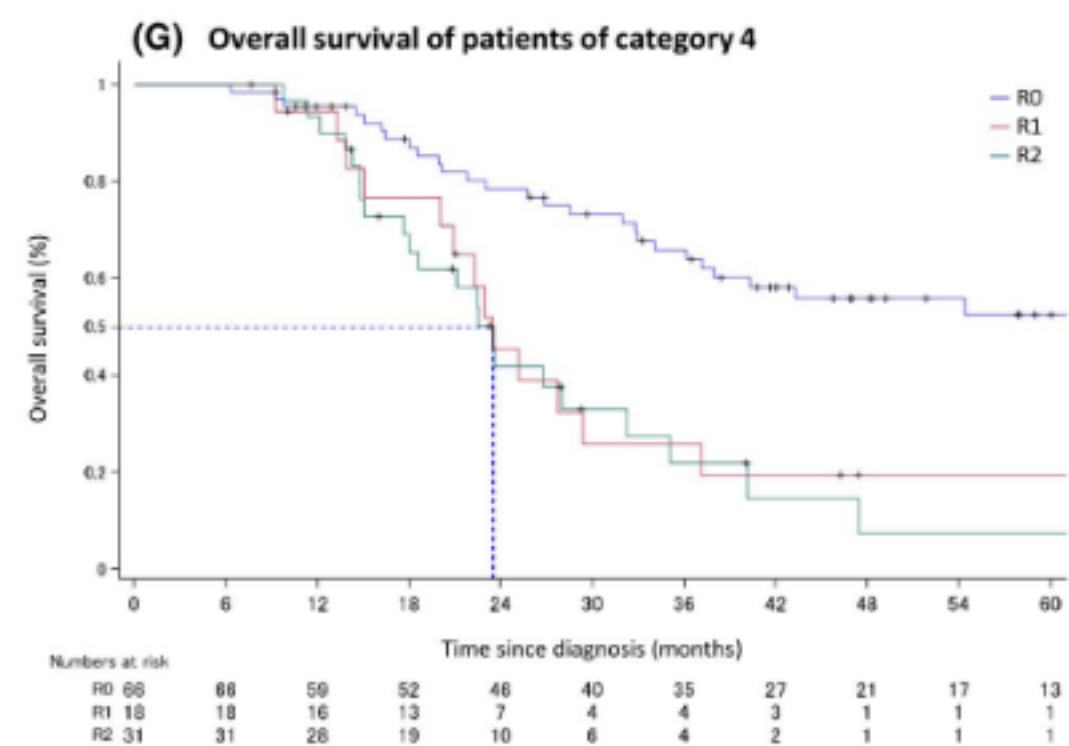
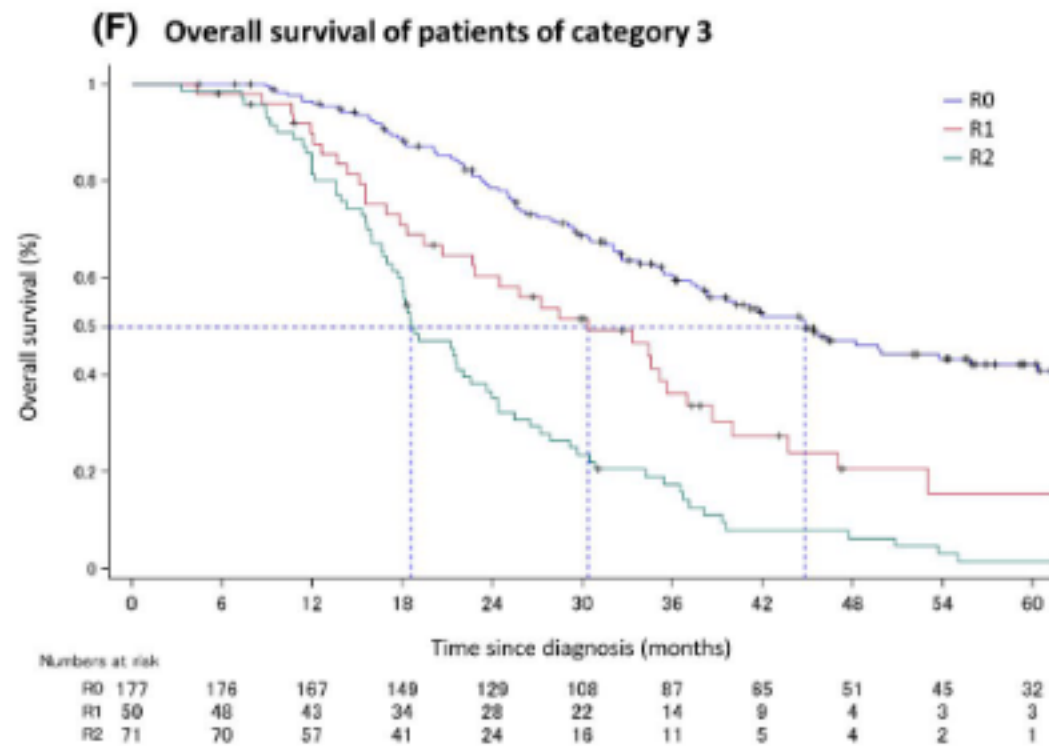
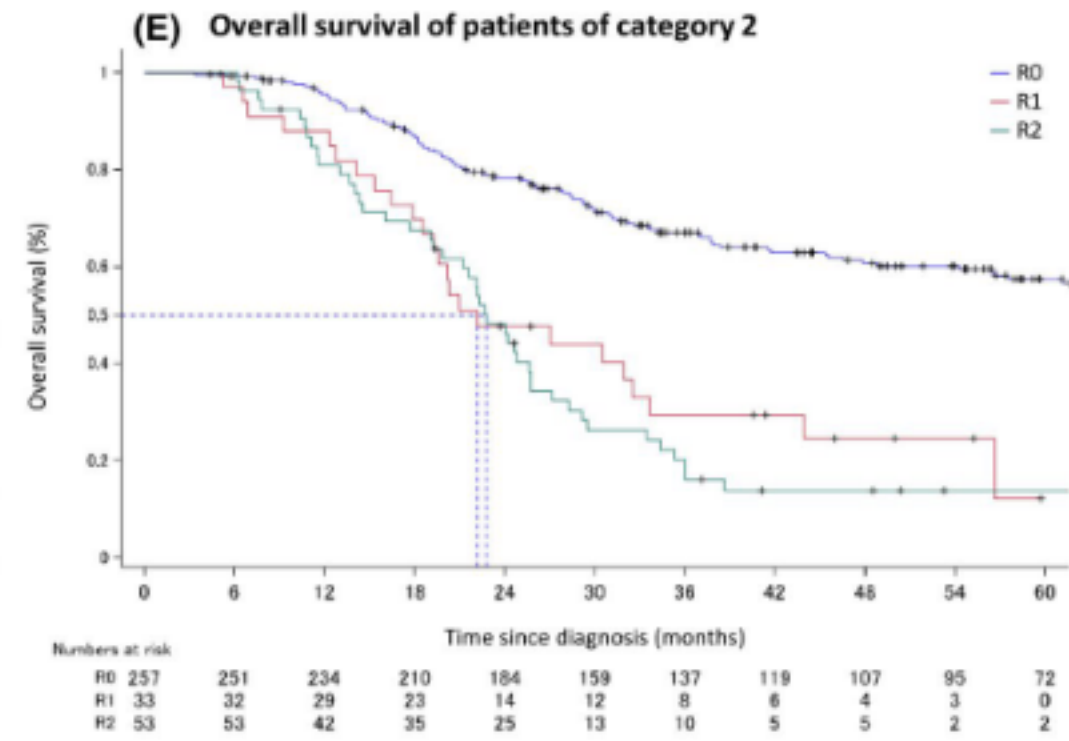
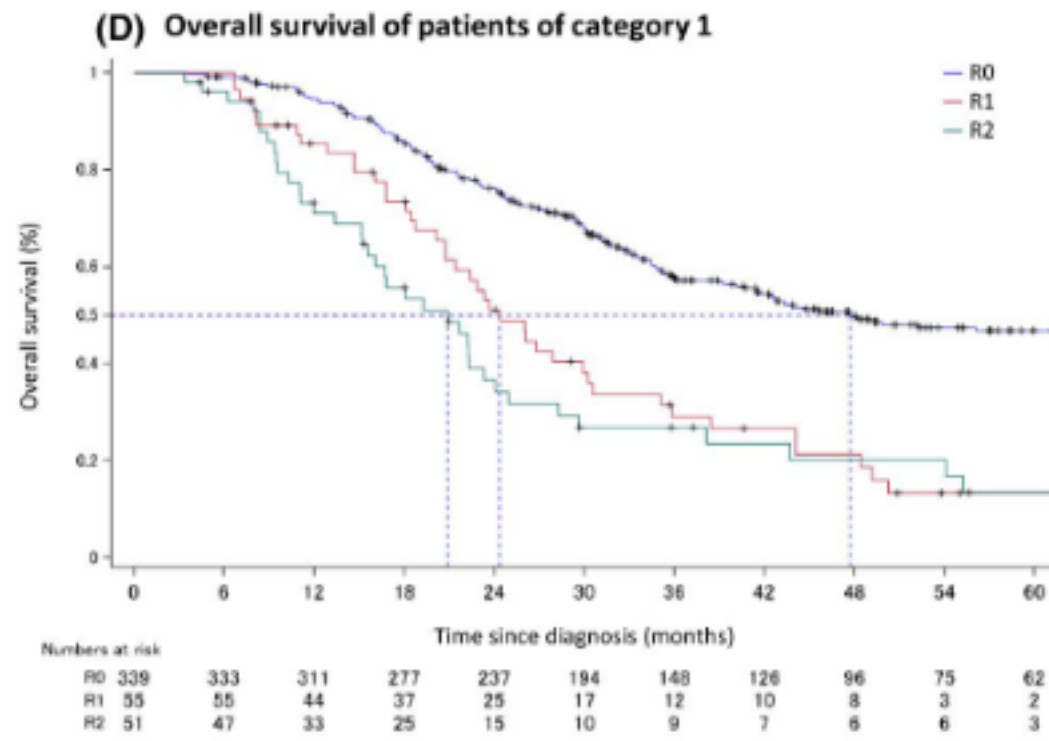


gastrectomy followed by chemotherapy **did not show any survival benefit** compared with chemotherapy alone in advanced gastric cancer with a single non-curable factor, gastrectomy cannot be justified for treatment of patients with these tumours.



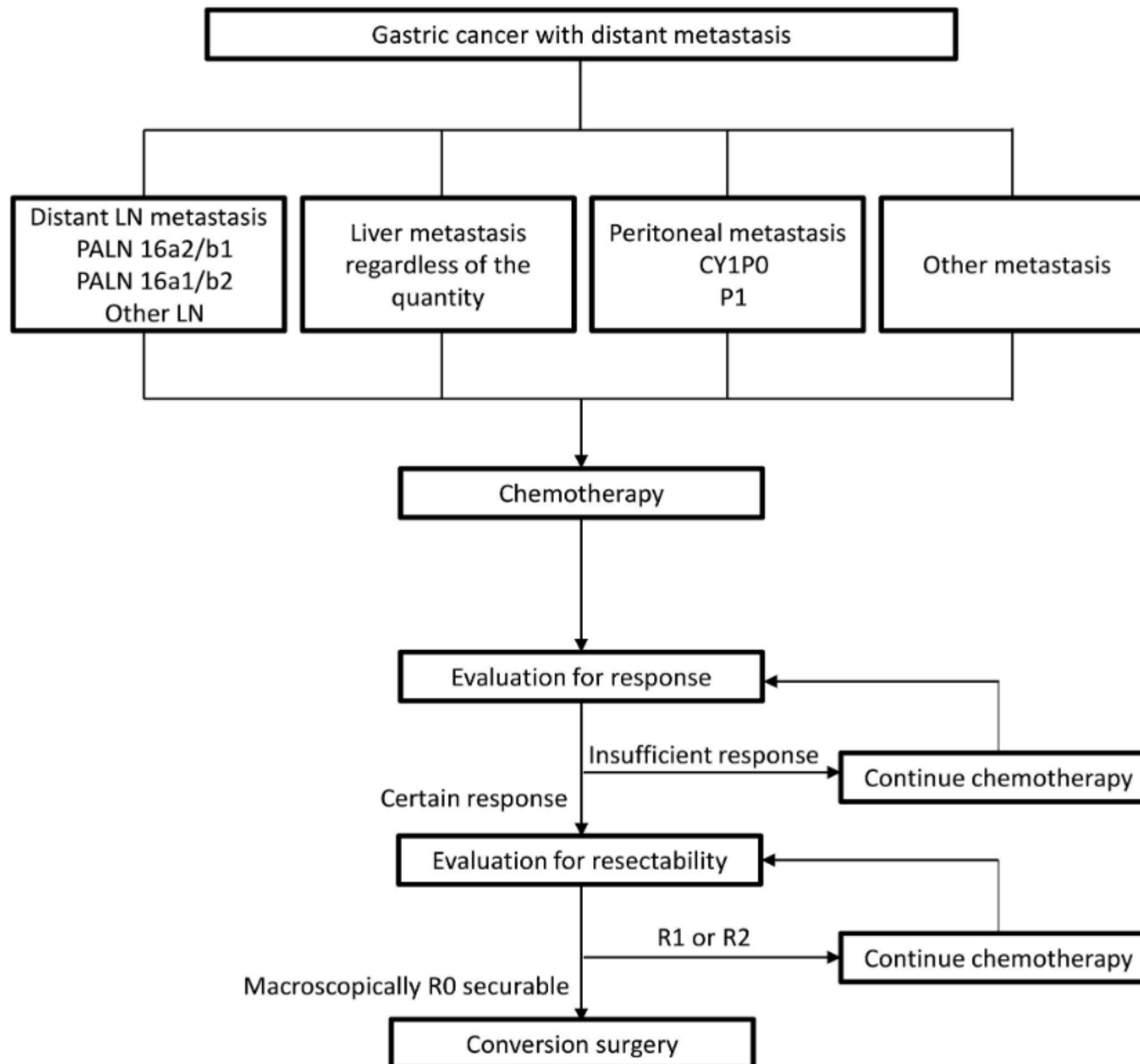
Metastatik Mide Kanseri:

⚡ No RCT



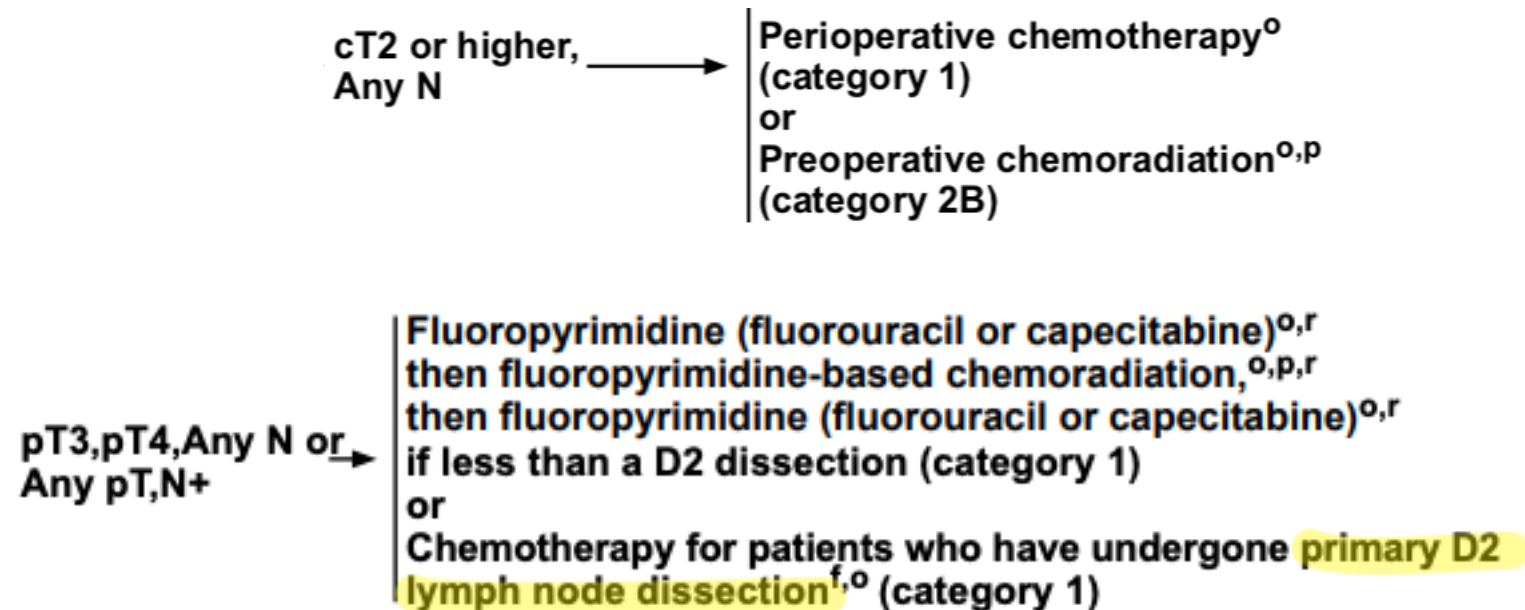
Metastatik Mide Kanseri:

 No RCT



Gastric Cancer

Version 2.2022 — January 11, 2022



GAST-C Principles of Surgery

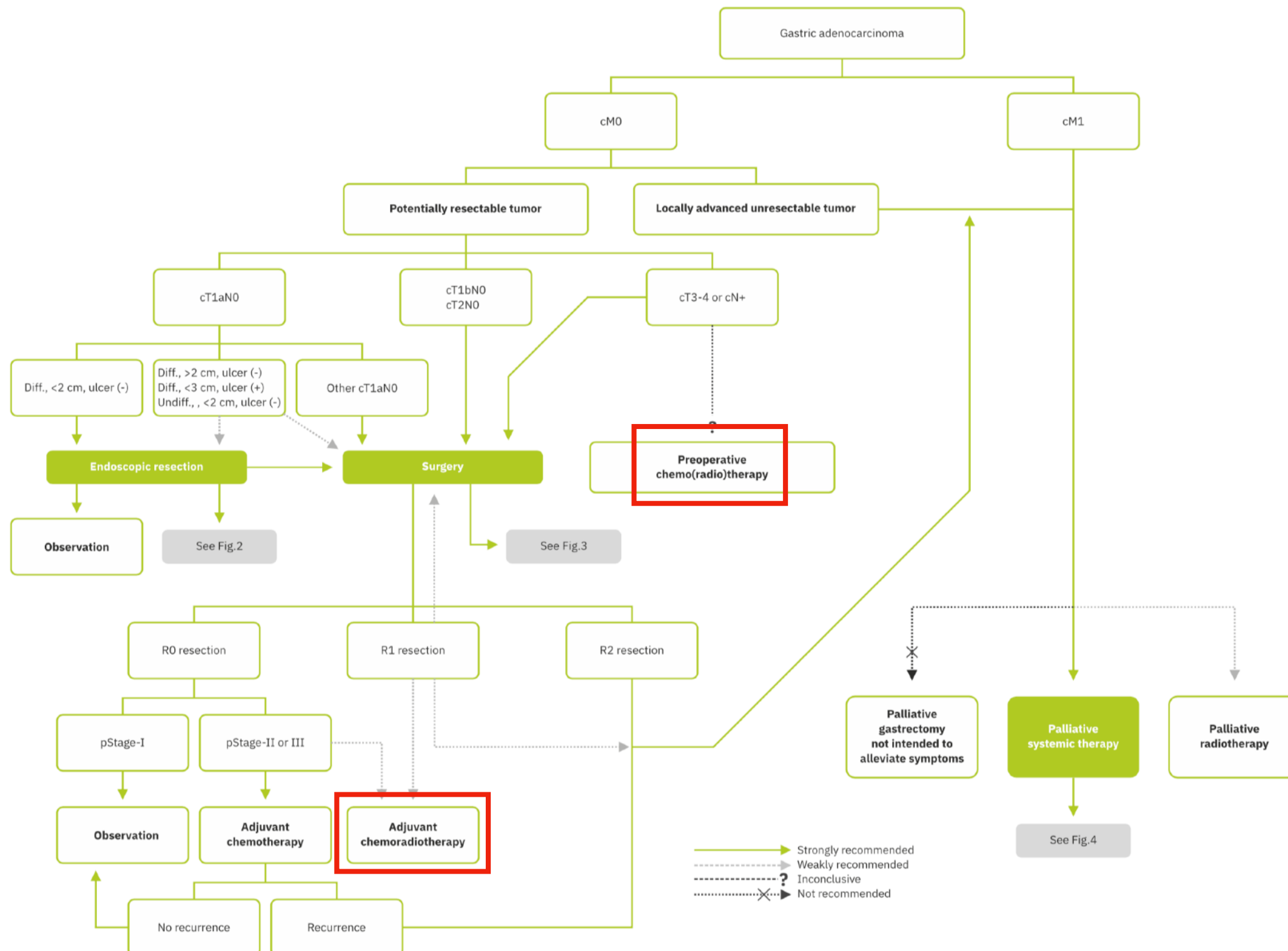
- Siewert classification: The term "center" was clarified as "*epicenter*".
- Resectable tumors, Bullets and sub-bullets revised:
 - ▶ T1b–T3: Adequate gastric resection to achieve negative microscopic margins (**typically ≥4 cm from gross tumor**).
 - ▶ "...at least 15 16 or greater lymph nodes."
 - ▶ D2 dissection is a D1 plus all the nodes along the left gastric artery, common hepatic artery, celiac artery, **splenic hilum**, and splenic artery.
 - ▶ ~~Routine or prophylactic splenectomy is not required. Splenectomy is acceptable when the spleen or the hilum is involved~~ *Routine splenectomy is not indicated unless the spleen is involved or extensive hilar adenopathy is noted.*

• Hyperthermic intraperitoneal chemotherapy (HIPEC) or laparoscopic HIPEC may be a therapeutic alternative for carefully selected stage IV patients in the setting of ongoing clinical trials and is under further clinical investigation.¹⁸⁻²⁰

Special Article



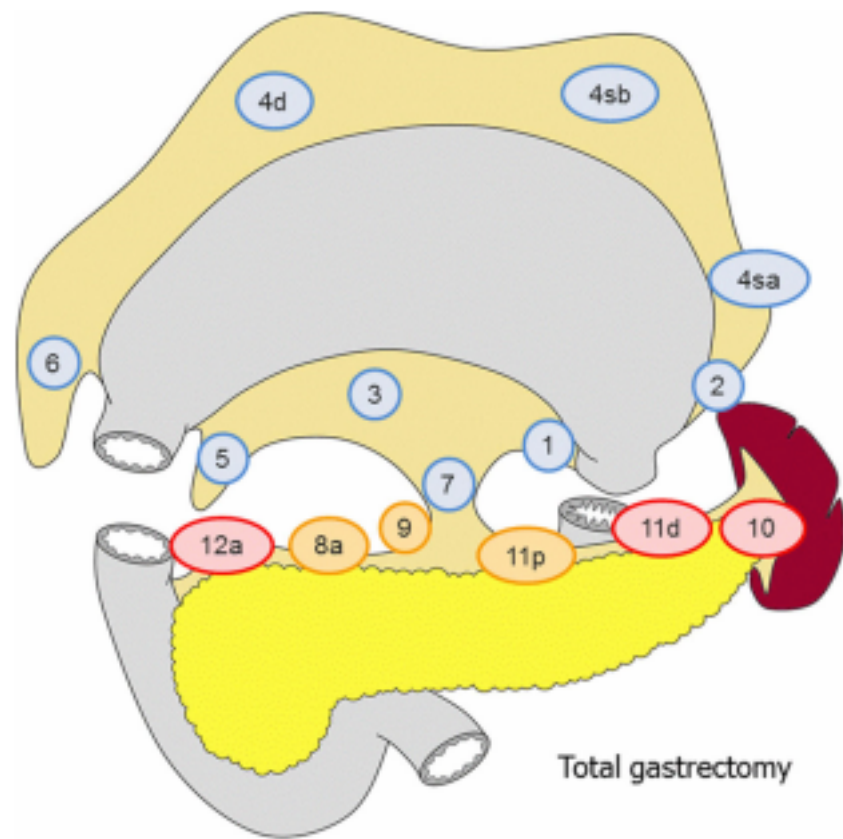
Korean Practice Guideline for Gastric Cancer 2018: an Evidence-based, Multi-disciplinary Approach



Japanese gastric cancer treatment guidelines 2018 (5th edition)

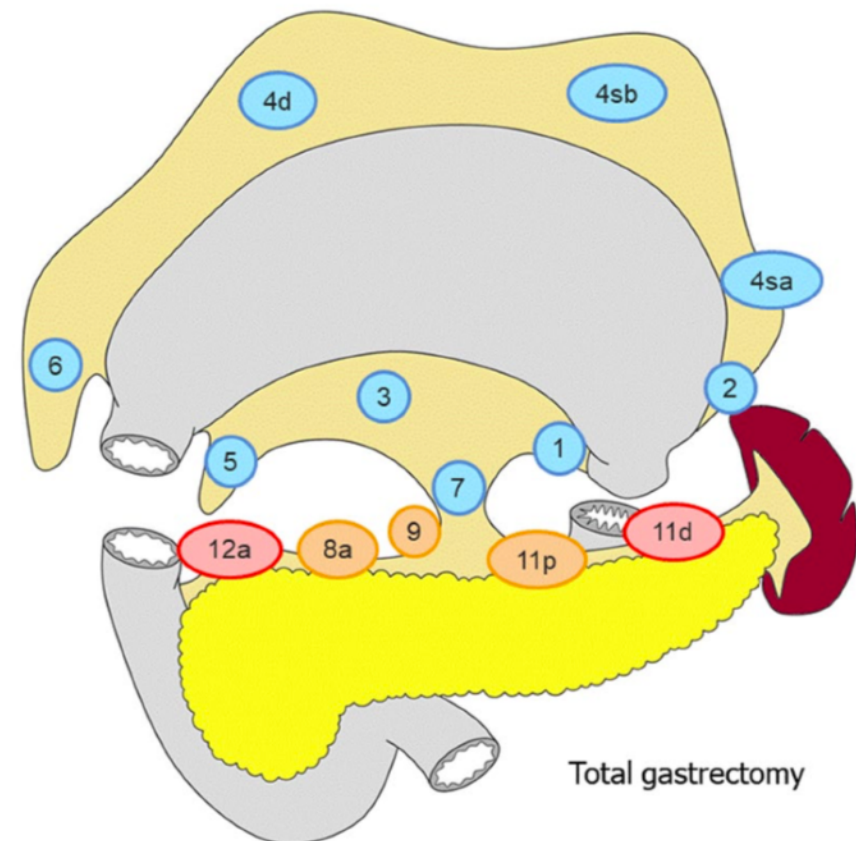
Japanese Gastric Cancer Association¹

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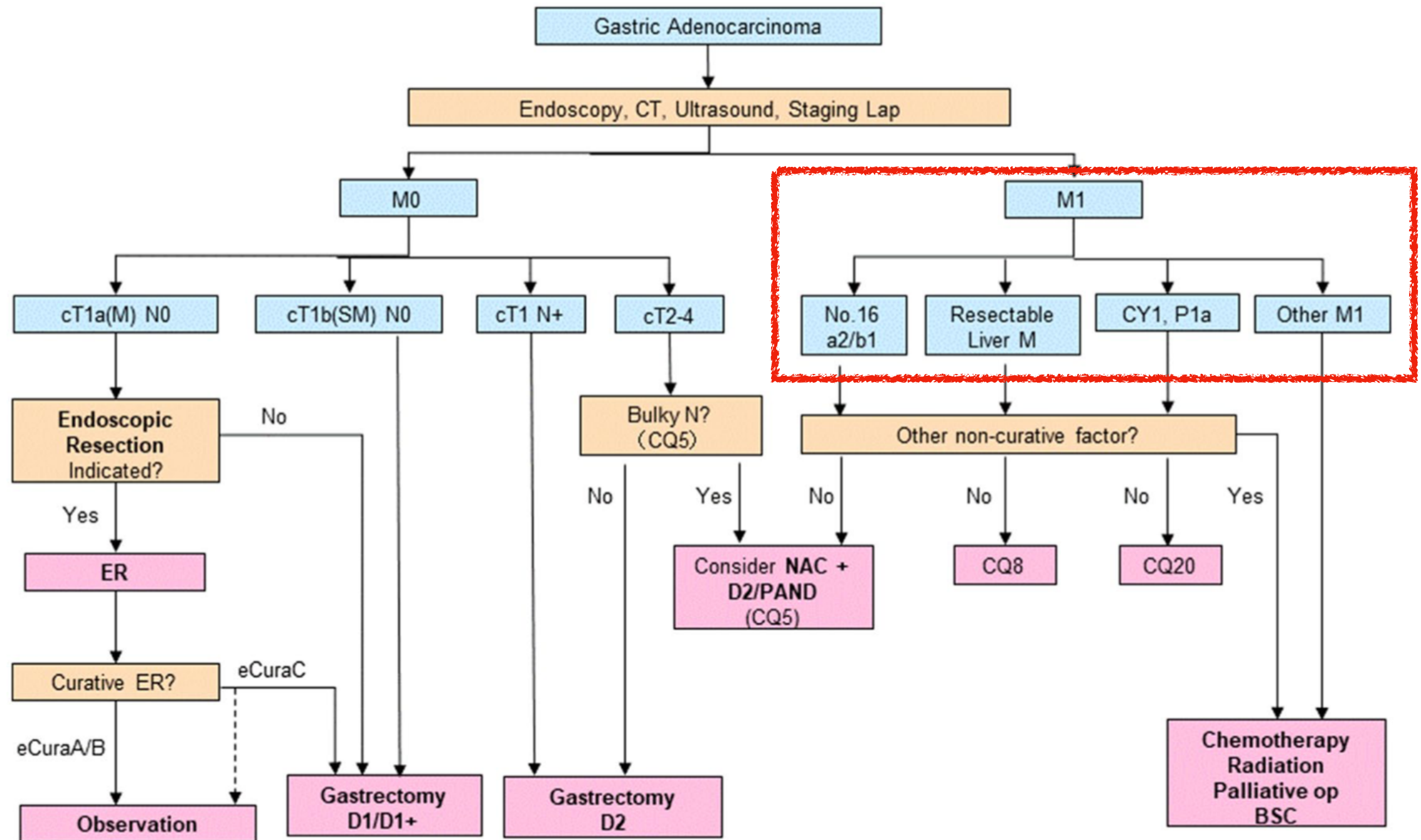
4th

● D1
● D1+
● D2



5th

Japanese gastric cancer treatment guidelines 2018 (5th edition)



Japanese Gastric Cancer Treatment Guidelines 2021

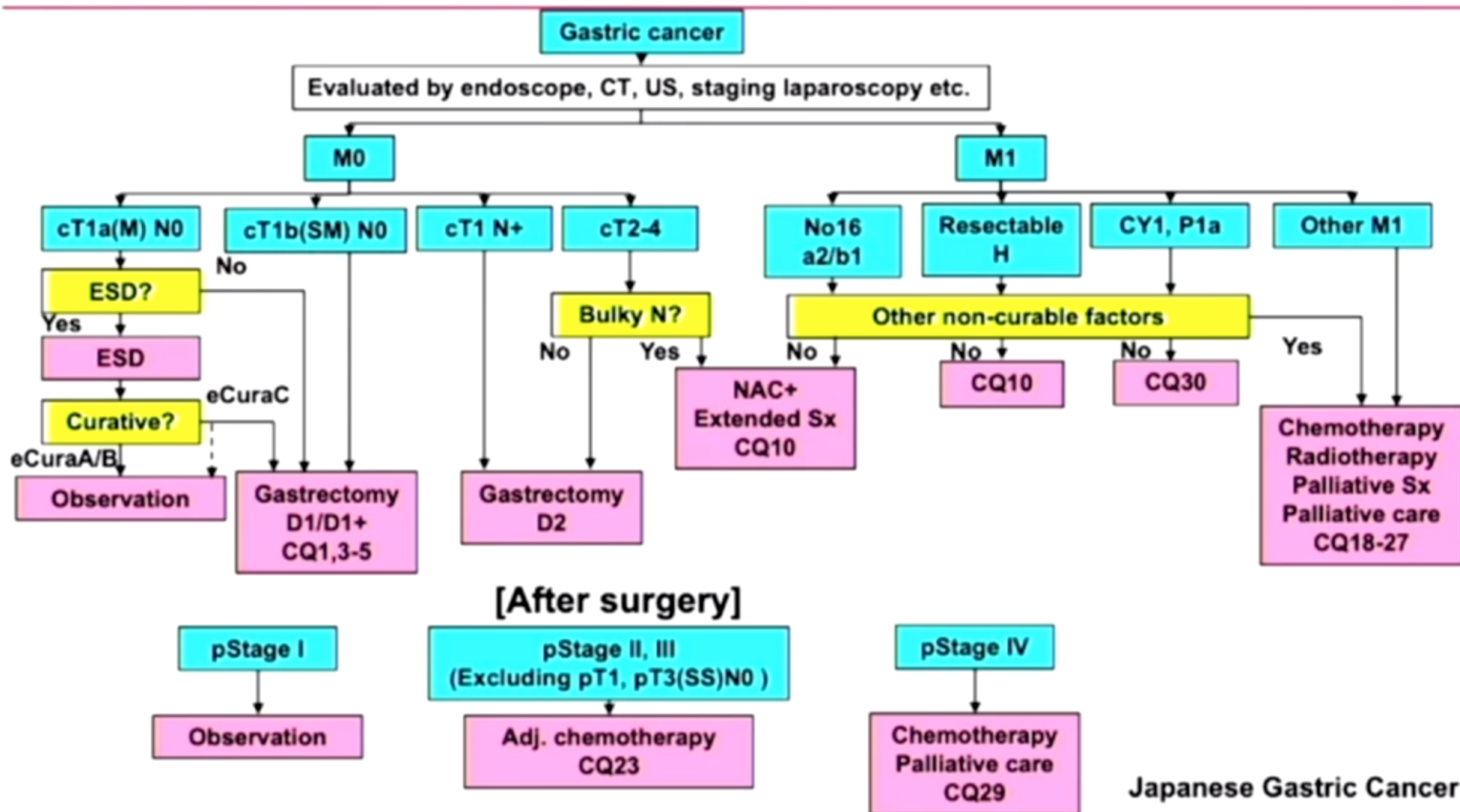
胃癌 治療ガイドライン



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日本胃癌学会 ● 編

Japanese Gastric Cancer Treatment Guidelines 2021



Japanese Gastric Cancer

Japanese Gastric Cancer Treatment Guidelines 2021

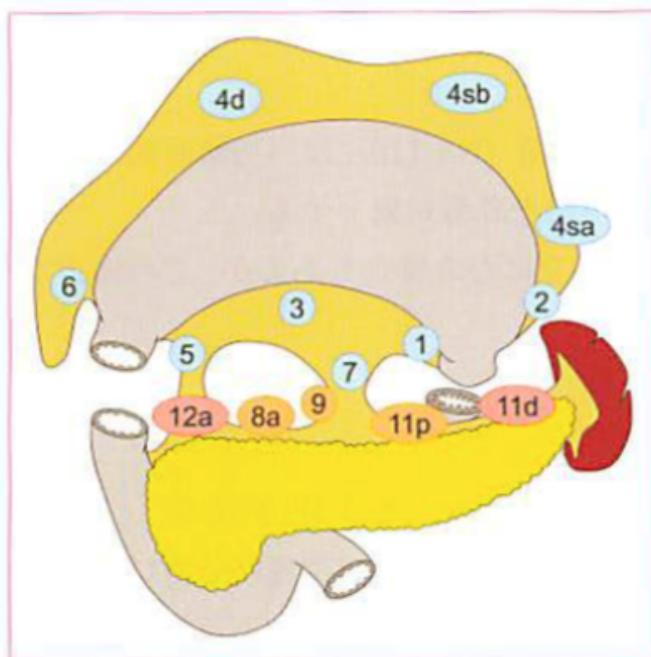


図2 胃全摘術の郭清

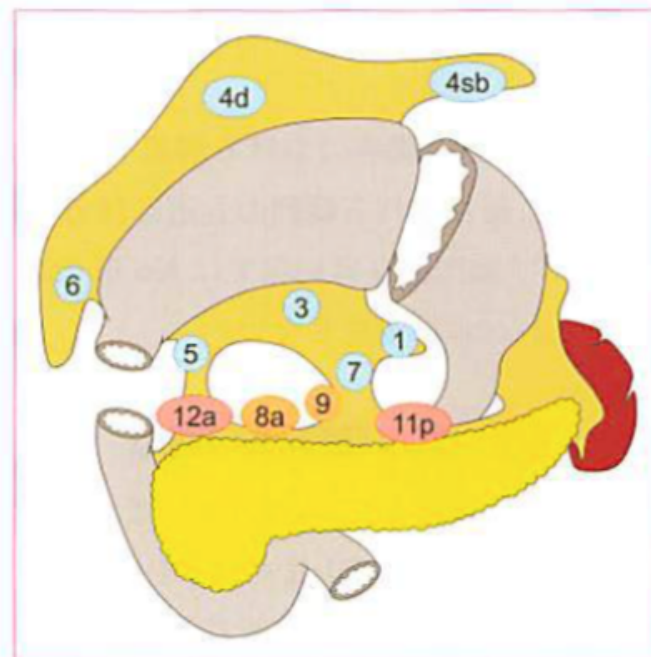


図3 幽門側胃切除術の郭清

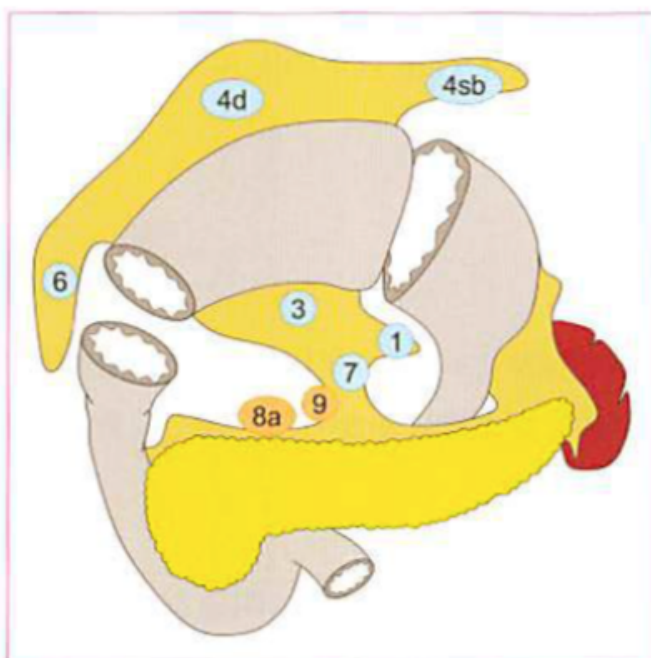


図4 幽門保存胃切除術の郭清

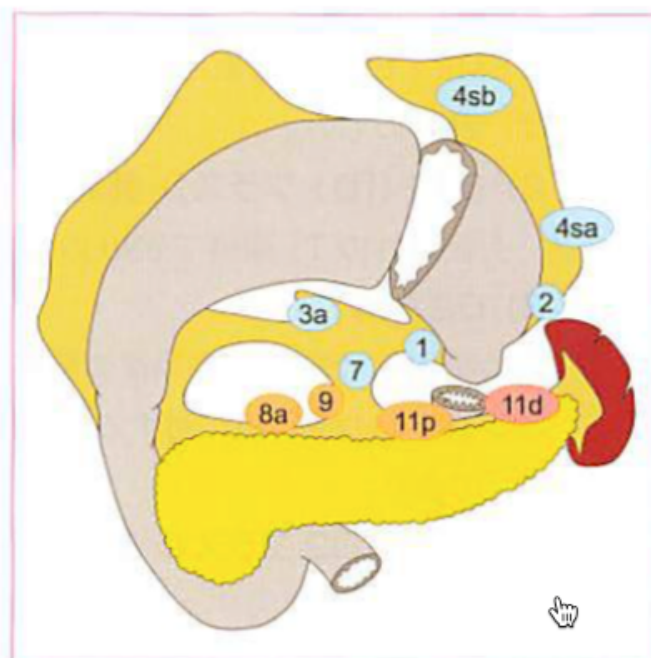


図5 噴門側胃切除術の郭清

1) 胃全摘術 (図2)

D0 : D1 に満たない郭清

D1 : No. 1~7

D1+ : D1+No. 8a, 9, 11p

D2 : D1+No. 8a, 9, 11p, 11d, 12a

食道浸潤癌では D2 には No. 19, 20, 110*を追加する。

2) 幽門側胃切除術 (図3)

D0 : D1 に満たない郭清

D1 : No. 1, 3, 4sb, 4d, 5, 6, 7

D1+ : D1+No. 8a, 9

D2 : D1+No. 8a, 9, 11p, 12a



3) 幽門保存胃切除術 (図4)

D0 : D1 に満たない郭清

D1 : No. 1, 3, 4sb, 4d, 6**, 7

D1+ : D1+No. 8a, 9

4) 噴門側胃切除術 (図5)

D0 : D1 に満たない郭清

D1 : No. 1, 2, 3a, 4sa, 4sb, 7

D1+ : D1+No. 8a, 9, 11p

D2 : D1+No. 8a, 9, 11p, 11d



Japanese Gastric Cancer Treatment Guidelines 2021

Laparoscopic distal gastrectomy is strongly recommended as a standard treatment

(Consensus rate 100%(8/8), Evidence level A)

Laparoscopic total or proximal gastrectomy is weakly recommended

(Consensus rate 100% (8/8), Evidence level C)

We cannot decide the recommendation of laparoscopic gastrectomy for cStage II, III gastric cancer

(Agreement rate 71.4% (5/7), Evidence level C)

Laparoscopic distal gastrectomy for cStage II, III gastric cancer is strongly recommended as a standard treatment.

Robotic gastrectomy is weakly recommended cStage I gastric cancer.

Omentectomy is weakly recommended for cT3-T4 gastric cancer

(Consensus rate 100% (8/8), Evidence level C)

It is strongly recommended not to perform splenectomy or splenic hilar lymph node dissection for tumors without greater curvature invasion.

(Consensus rate 100% (8/8), Evidence level A)

Splenectomy or splenic hilar lymph node dissection is weakly recommended for tumors with greater curvature invasion

(Consensus rate 87.5% (7/8), Evidence level C).

Japanese Gastric Cancer Treatment Guidelines 2021

In surgery for esophagogastric junction cancer deeper than cT2, lower mediastinal lymph node dissection is weakly recommended if the esophageal invasion length is more than 2 cm, and upper, middle, and lower mediastinal lymph node dissection is weakly recommended if the esophageal invasion length is more than 4 cm. (Consensus rate 100% (9/9), Evidence level C)

Surgical resection after preoperative chemotherapy is weakly recommended for a small number of **paraaortic lymph node metastases** confined to No. 16a2 / b1.

In addition, surgical resection is weakly recommended for **solitary liver metastasis** without other non-curative factors

(Consensus rate 100% (7/7), Evidence level C)

Conversion surgery for patients with Stage IV gastric cancer is weakly recommended with the condition that chemotherapy provides a certain antitumor effect, the response is maintained, and R0 resection is possible

(Consensus rate 100% (7/7), Evidence level D)

No clear recommendation for neoadjuvant chemotherapy for curatively resectable advanced gastric and esophagogastric junctional cancer (Consensus rate 71.4 %, 5/7, Strength of evidence B).

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Lenfadenektomi



- D2; standart
- D2+PALN; rutinde gereksiz.

Splenektomi



- rutinde gereksiz.

Bursektomi



- rutinde gereksiz.

Laparoskopi

- EGC-Distal



- EGC-Total



- AGC-Distal



- AGC-Total



Omentektomi



- 2031

EIPL



- Faydasız

Metastatik

Konversiyon tedavisi

