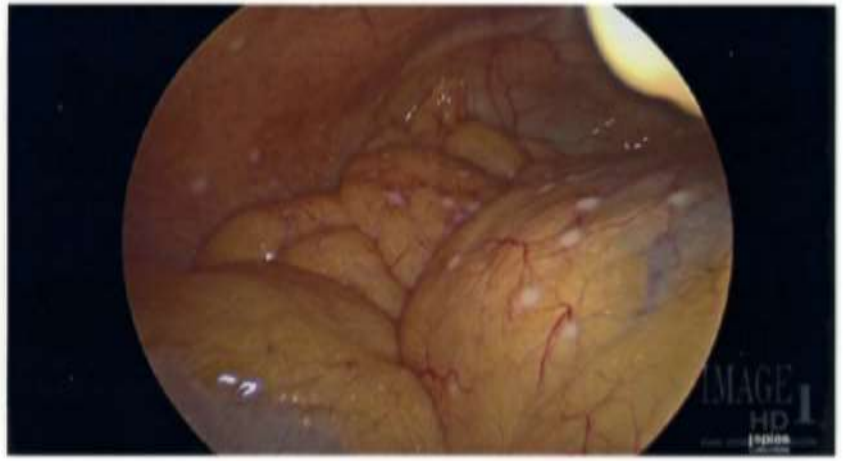
The Role of Gastric Resection in Patients with Peritoneal Carcinomatosis



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Disclosures

- None

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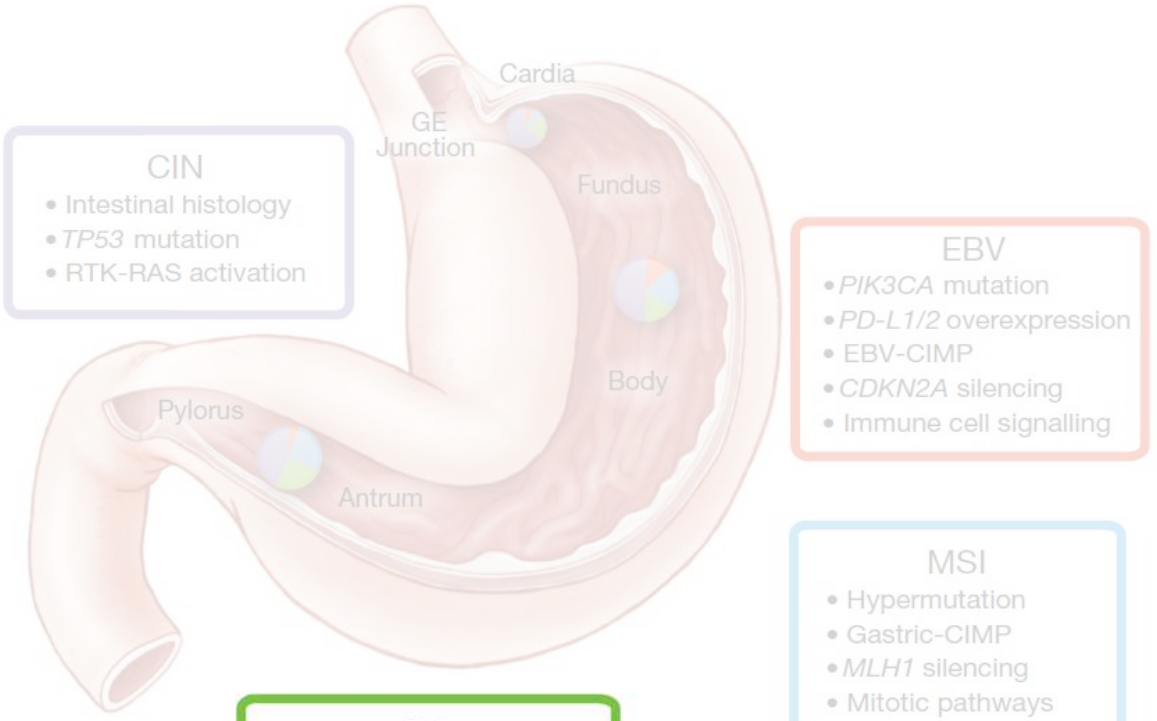
Cancer Genome Atlas Data



over 70% ←

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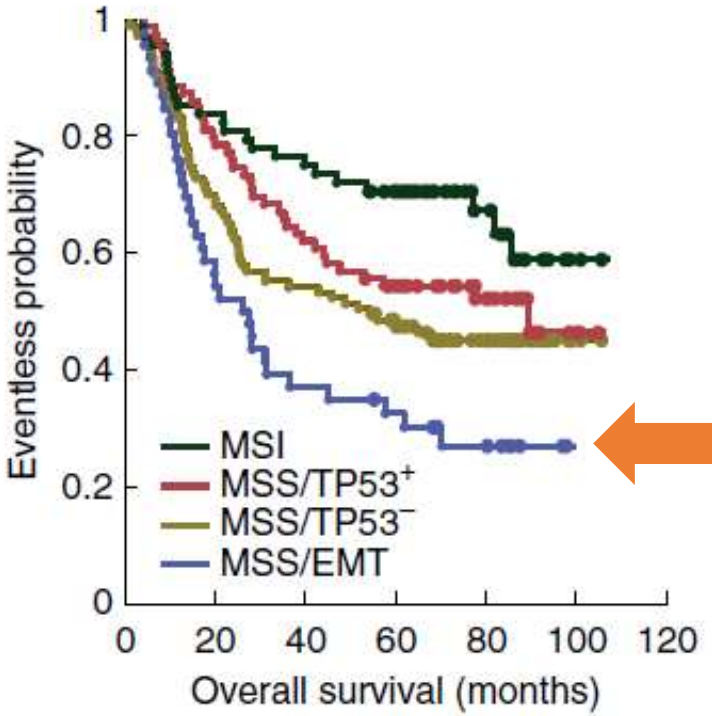
Cancer Genome Atlas Research Network. *Nature* 2014;513(7517):202-9

Molecular Subtype and Clinical Outcome

Rate of peritoneal recurrence 77%

(compared to 12-23% for other subtypes)



MSS/EMT very similar to GS subtype (TCGA)

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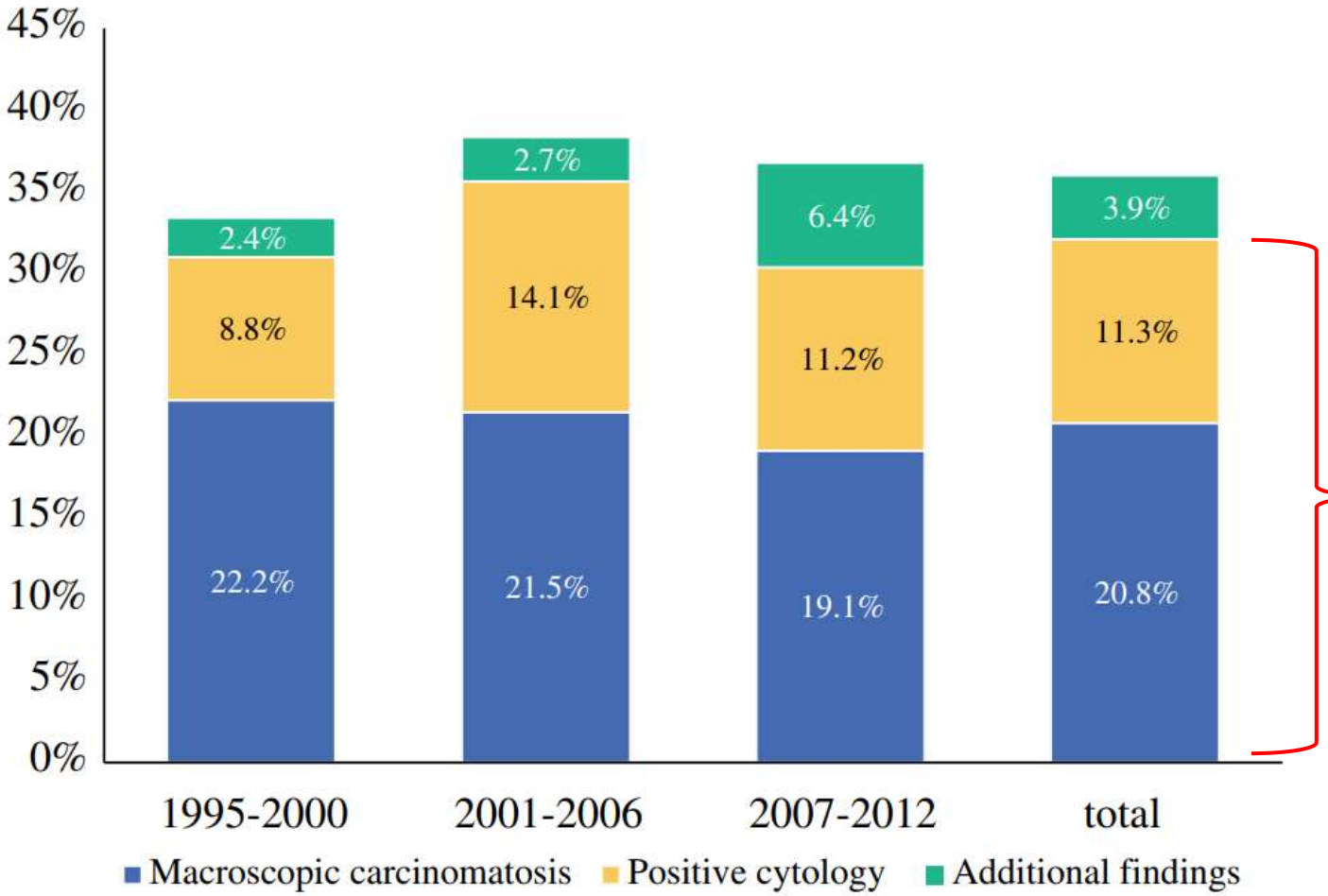
Cristescu et al. *Nature Med* 2015;21(5):449-56.

Staging Laparoscopy is Key



30% of patients *without* radiographic evidence of carcinomatosis will have occult M1 disease

Ikoma et al. *Ann Surg Oncol* 2016

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When is gastrectomy indicated?

Palliative gastric resection in the setting of metastasis

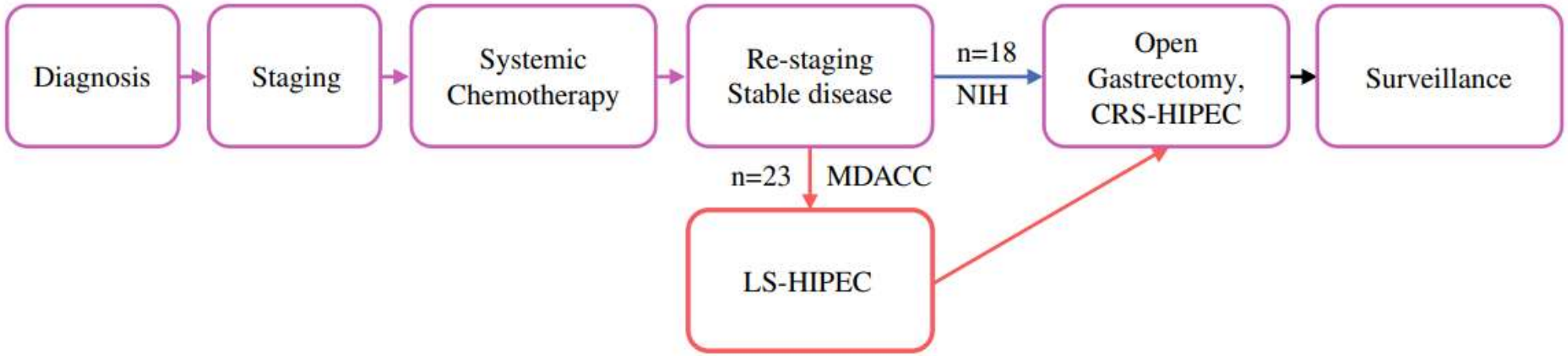
- Less common in an era of more effective systemic therapy
- Refractory bleeding (XRT), obstruction, perforation

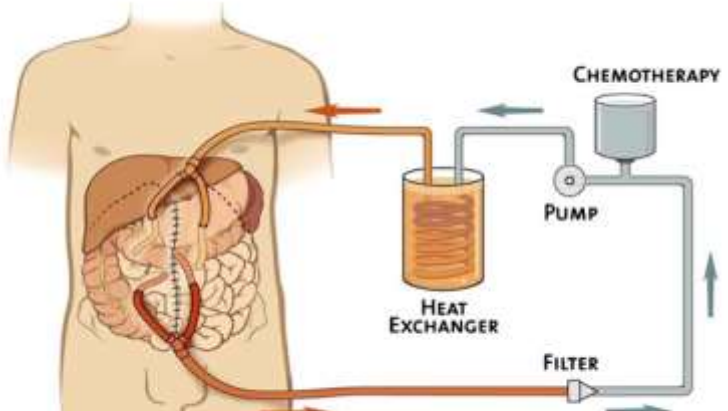
What about “oligometastatic” disease?

- Is a single site of metastasis better than multiple?
- Is there a peritoneal cancer index (PCI) threshold?

Cytoreduction & HIPEC for Gastric Carcinomatosis

Cytoreduction and HIPEC for Gastric Carcinomatosis: Multi-institutional Analysis of Two Phase II Clinical Trials





Green et al. *Ann Surg Oncol* 2023 (MDACC & NIH)

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Cytoreduction & HIPEC for Gastric Carcinomatosis

Characteristic	Patients (n = 41)	
Age at operation (years), median ± SD, range	57 ± 13.8	21.5–75.7
Female gender, n (%)	15	37%
PCI score at CRS–HIPEC, median ± SD (range)	2 ± 4.7	0–19
CC score, n (%)		
0	39	95%
1	1	2%
2	1	2%
Extent of gastrectomy, n (%)		
Total	28	68%
Subtotal	13	32%

Meaning:

1. Highly selected for low burden of disease (PCI ranges from 0 to 39)

2. Visible peritoneal disease was completely removed

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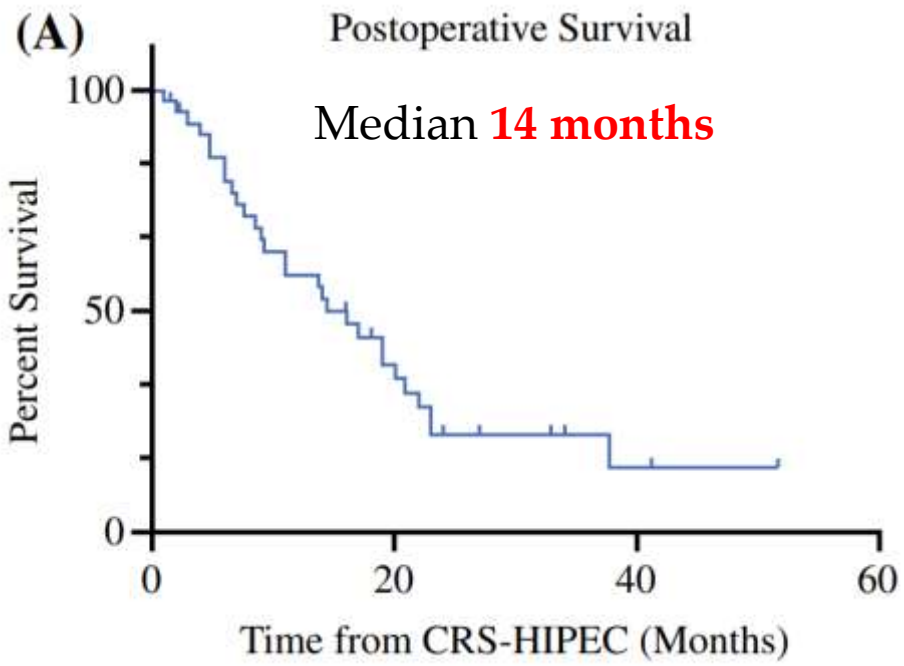
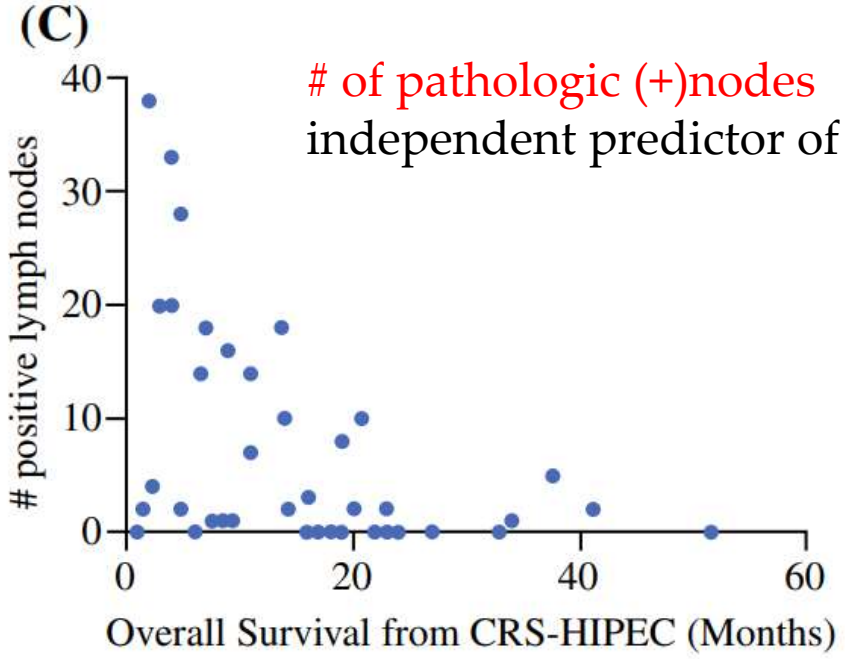
Cytoreduction & HIPEC for Gastric Carcinomatosis





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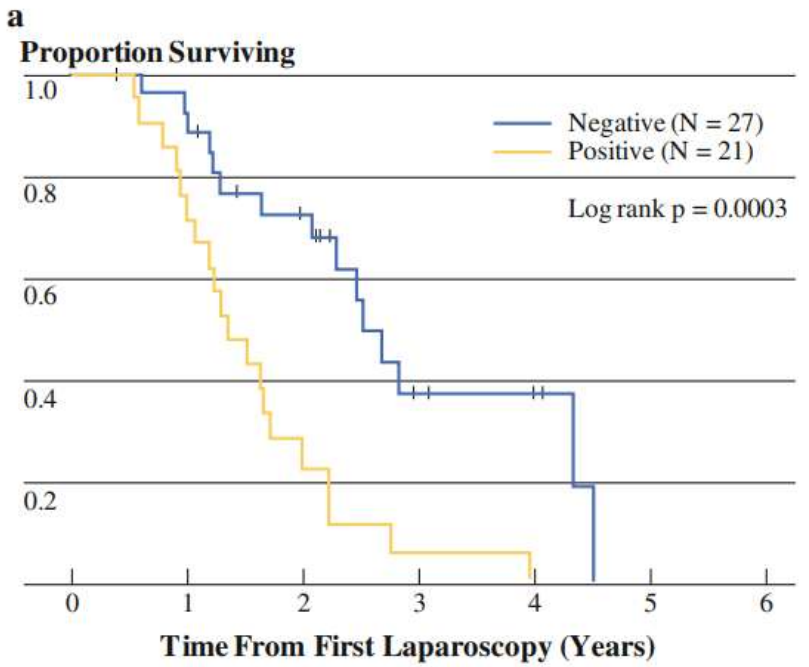
Outcome - Case Presentation

45 y.o. male with gastric cancer, cT4N+M1(cyto+)

- Received 8 cycles of FLOT
- Repeat Laparoscopy → lavage cytology negative, PCI 0



Mezhir et al. *Ann Surg Oncol* 2010

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RENAISSANCE (AIO-FLOT5) trial

Chemotherapy Alone vs. Chemotherapy + Surgical Resection in Patients With Limited-metastatic Adenocarcinoma of the Stomach or Esophagogastric Junction

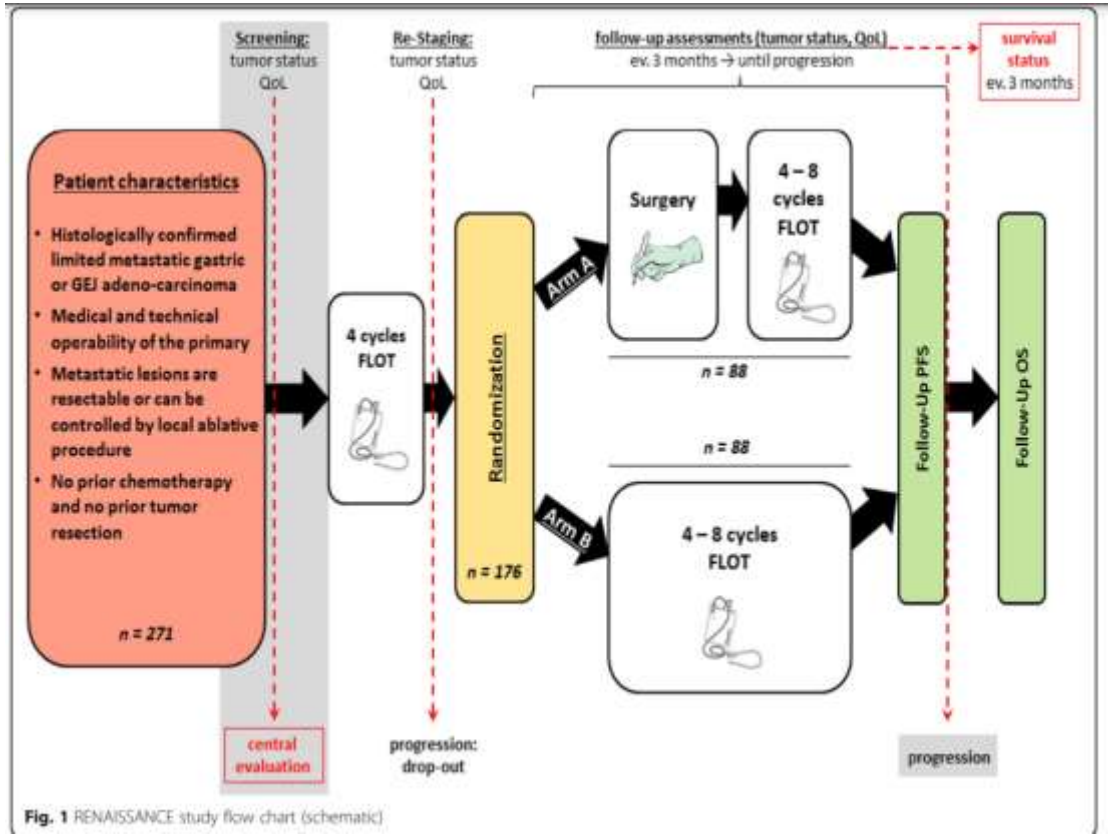

Fig. 1 RENAISSANCE study flow chart (schematic)

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RENAISSANCE (AIO-FLOT5) trial

Primary endpoint OS – no difference

Criticisms

- Surgical mortality and complete resection rates
- Duration of systemic therapy relatively short in the setting of metastatic disease

Strength

- Use of FLOT

Conclusions

Gastrectomy in patients with carcinomatosis is rarely indicated

- Palliative resection reserved for bleeding, obstruction, & perforation

"Limited" carcinomatosis (i.e., low PCI) is deceiving

A longer test of tumor biology is necessary if we wish to select patients for gastrectomy in setting of metastasis

We need systemic therapy options for gastric cancers that are not HER2+, MSI-H, PD-L1+, CLDN18.2+

Thank you

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TABLE 4 Multivariate analysis of factors associated with visible peritoneal carcinomatosis or positive peritoneal cytology

	OR	95 % CI	*p* value[a]
Age >64 years	0.85	0.58–1.24	0.403
Male sex	1.29	0.86–1.94	0.224
Location: GE/cardia	1.06	0.72–1.56	0.785
Grade: poorly differentiated	1.77	1.02–3.05	0.041
Signet ring cell	1.34	0.90–2.00	0.153
Linitis: yes/equivocal	4.18	2.47–7.09	<0.001
CT findings: equivocal	3.37	1.93–5.92	<0.001

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Ikoma et al. *Ann Surg Oncol* 2016

Cytoreduction & HIPEC for Gastric Carcinomatosis

TABLE 4 Uni- and multivariable Cox proportional hazards modeling of select variables with OS from CRS–HIPEC

Variable	*N*	Univariable analysis			Multivariable analysis		
		HR	95% CI	*p*-value	HR	95% CI	*p*-value
Age at CRS–HIPEC, per year increase	41	1.001	0.978–1.024	0.951			
PCI score, per point increase	41	1.112	1.021–1.211	0.014	1.000	0.860–1.164	0.105
Increasing CC score	41	9.680	2.171–43.155	0.003	> 999	< 0.001 to > 999	0.928
Multivisceral resection performed	41	3.572	1.521–8.390	0.003	4.438	0.732–26.897	0.105
Female gender	41	1.589	0.749–3.371	0.228			
Race	41	0.952	0.705–1.285	0.748			
Poorer differentiation	36	0.448	0.098–2.044	0.300			
LVI present	41	2.166	0.992–4.733	0.053			
PNI present	40	2.315	1.025–5.230	0.043	1.089	0.277–4.286	0.902
Number of positive lymph nodes, per node	41	1.126	1.069–1.186	< 0.001	1.105	1.006–1.213	0.037
Positive margin status	41	2.470	0.874–6.985	0.088			
Increasing grade	38	1.883	0.578–6.140	0.294			
Increasing ypT stage	41	1.242	0.893–1.729	0.198			
Increasing ypN stage	41	1.653	1.232–2.217	< 0.001			
Increasing ypM stage	40	2.279	0.945–5.493	0.067			
Received FLOT chemotherapy	41	0.586	0.203–1.694	0.324			
Received triplet chemotherapy	41	1.465	0.671–3.195	0.338			
Number of neoadjuvant regimens, per regimen	41	1.000	0.560–1.783	0.999			
PDL1 positive	14	0.707	0.189–2.653	0.608			
Her2 positive	28	4.221	1.278–13.944	0.018	3.989	0.462–34.398	0.208
MMR positive	23	0.037	0.000–25.828	0.324			
Pathogenic *TP53* mutation present	14	1.484	0.385–5.716	0.566			

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Green et al. *Ann Surg Oncol* 2023 (MDACC & NIH)