Esophageal Cancer Treatment

Lymphadenectomy

Retrospective data from Japan in the 1980's suggested superior survival after extended lymphadenectomy for gastric cancer.

Extent of lympadenectomy can be categorized:

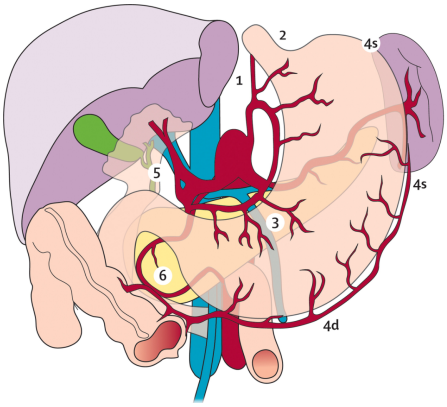
D1: Perigastric D2: Central nodes + splenic hilum D2α: Central nodes D3: Extended nodes

D1 Perigastric nodes

Lymph node stations immediately adjacent to the stomach

- 1:
- 2:
- 3: Lesser curvature
- 4: Greater curvature
- 5: Suprapyloric
- 6: Infrapyloric

D1 Perigastric Nodes



N1 Lymph nodes (perigastric)

1 Right cardiac nodes
2 Left cardiac nodes
3 Nodes along the lesser curvature
4d Lymph nodes along the short gastric and the left gastroepiploic vessels
4s Lymph nodes along the right gastroepiploic vessels
5 Suprapyloric nodes
6 Infrapyloric nodes

D2 Central Nodes + splenic hilum

Lymph nodes adjacent to celiac axis:

- 12a: Left side of porta hepatis
- 8: Common hepatic artery
- 7: Left gastric artery
- 9: Celiac axis
- 11: Proximal splenic artery
- 10: Splenic hilum

D1α Central Nodes

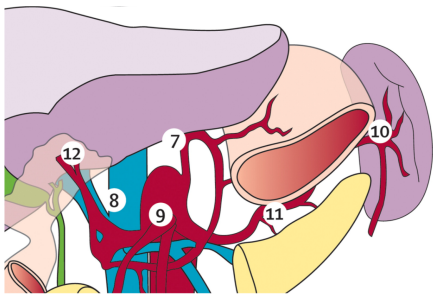
Lymph nodes adjacent to celiac axis:

- 12a: Left side of porta hepatis
- 8: Common hepatic artery
- 7: Left gastric artery
- 9: Celiac axis
- 11: Proximal splenic artery
- ~~10: Splenic hilum~~

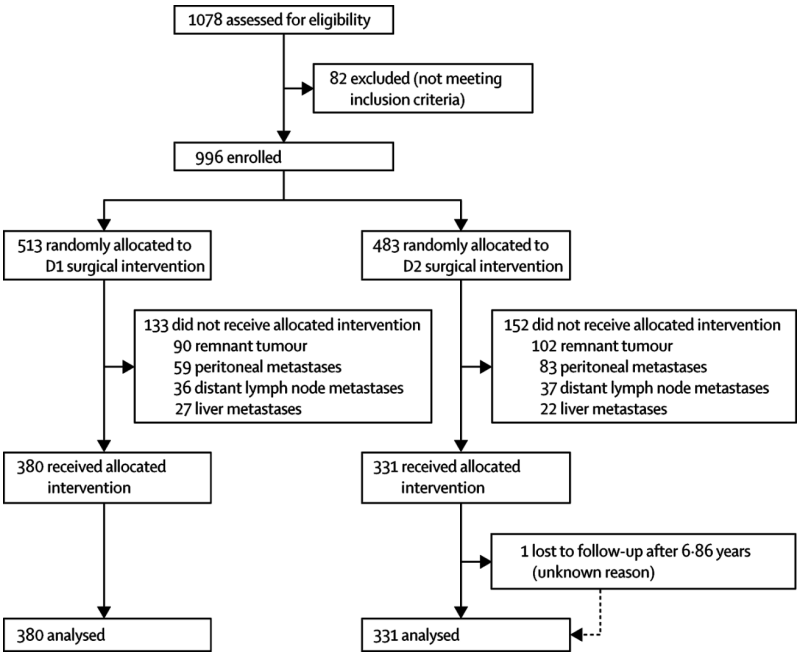
D2 Central Nodes

N2 Lymph nodes (branches coeliac axis)

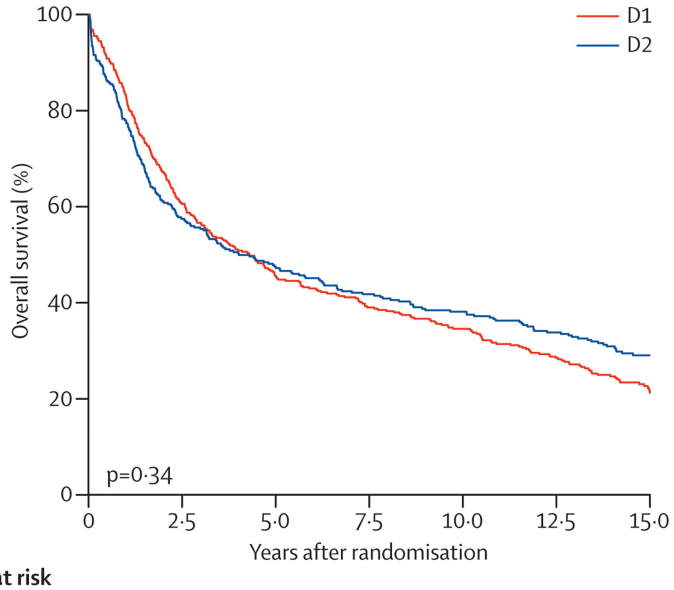
7 Nodes along root left gastric artery
8 Nodes along common hepatic artery
9 Nodes around coeliac axis
10 Nodes at splenic hilum
11 Nodes along splenic artery



Durch Trial: D2 vs D1 Lymphadenectomy



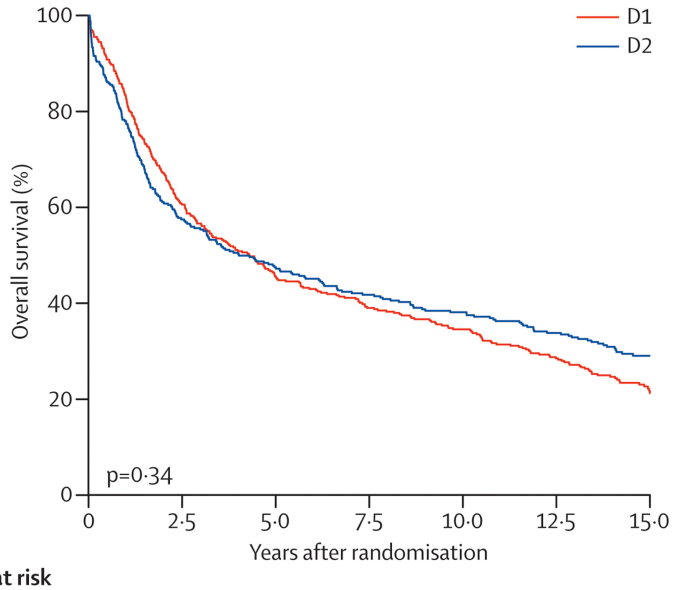
Dutch Trial: Overall Survival



Number at risk

D1	380	231	174	149	132	108	47
D2	331	191	158	138	125	110	70

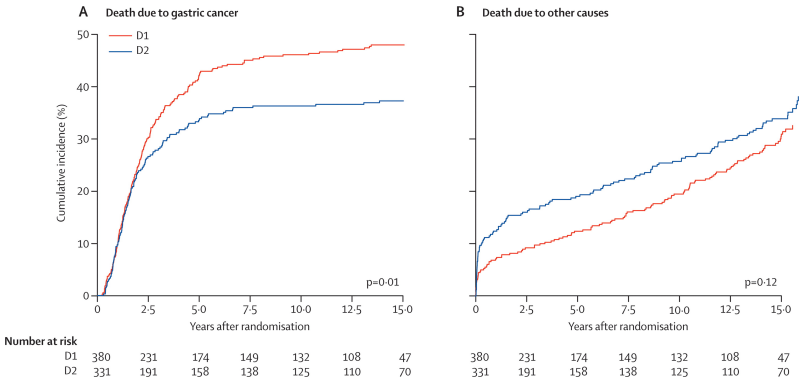
Durch Trial: D2 vs D1 Lymphadenectomy



Number at risk

D1	380	231	174	149	132	108	47
D2	331	191	158	138	125	110	70

Durch Trial: Cause of Death

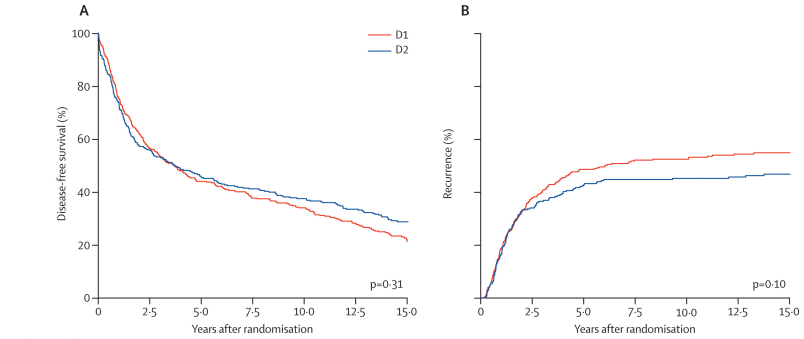


Number at risk

D1	380	231	174	149	132	108	47
D2	331	191	158	138	125	110	70

380	231	174	149	132	108	47
331	191	158	138	125	110	70

Durch Trial: Disease-free Survival

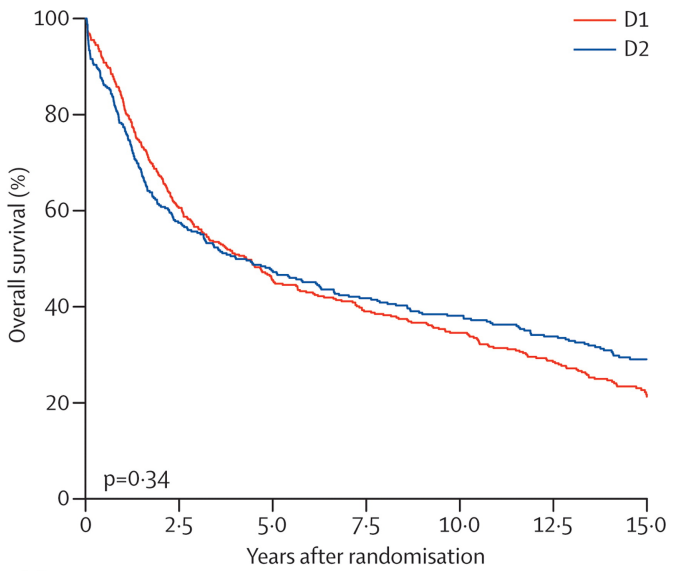


Number at risk

D1	380	218	168	144	130	100	47
D2	331	185	152	136	123	109	71

380	215	168	144	141	110	96
331	185	152	133	124	109	92

Durch Trial: D2 vs D1 Lymphadenectomy



Number at risk

D1	380	231	174	149	132	108	47
D2	331	191	158	138	125	110	70

Dutch Trial: D2 vs D1

Operative mortality higher with D2 (10% vs 4%)

More complications wtih D2 (43% vs 25%)

More reoperations with D2 (18% vs 8%)

Dutch Trial: Total vs Subtotal gastrectomy

Protocol did not dictate extend of gastric resection, but did require a proximal margin of 5cm if a subtotal gastrectomy performed.

No difference in survival between total vs subtotal gastrectomy

Dutch Trial: Conclusions

D2 lymphadenectomy is associated with better local control of gastric cancer than D1 node dissection, but at an increased risk of mortality and complications.

Can the toxicity of extended lymphadenectomy be reduced?

- Elimination of splenectomy (D1α)
- Mininally-invasive techniques

MAGIC Trial - Perioperative Chemotherapy

503 gastric cancer stage II adenocarcinoma of stomach, GE juncction or lower esophagus

ECF Chemo $\rightarrow$ Surgery $\rightarrow$ ECF Chemot vs Surgery alone

Chemotherapy: Epirubicin, ciplatin, 5FU

Surgery 3-6 weeks after last dose of chemo Chemo 6-12 weeks after surgery

MAGIC - Perioperative Chemotherapy

Tumor Location

- Gastric 74%
- GE junction 11%
- Distal esophagus 15%

MAGIC- Perioperative Chemotheray

Curative radical resection 79% with chemo vs. 70$ (p=0.03)

Longer 5-year survival wtih chemo (36% vs 23%). p=0.0009

Complete chemotherapy regimen (6 doses) in only 42%

Of patients who completed preop chemotherapy and surgery, only 34% received postoperative chemotherapy.

FLOT - Perioperative Chemotherapy

7616 patients with adenocarcinoma of GE junction or stomach randomized:

ECF → Surgery → ECF vs FLOT → Surgery →

Longer survival with FLOT (median 50 months vs 35 months)

TOPGEAR

ECF → Surgery → ECF → ChemoRT vs ECF → Surgery → ECF

HIPEC - Ongoing Trials

GASTRICHIP:

Patients with peritoneal diseae ftrom gastro cancer.

Chemo → Surgery with cytoreduction → Chemo vs Chemo → Surgery with cytoreduction + HIPEC → Chemo

(**glehen1?**)

GASTRICHIP

105 patients randomized 2014 - 2018. Trial closed due to slow accrual

55 patient treatment stopped prior to cytoreductive surgery due to disease progression

HIPEC with mitomycin and ciplatin for 60min at 42^{a}C.

Median survival 15 months in both groups (without a difference).

(**glehen1?**)

PERISCCOPE-II

Comparison of cytoreductive surgery + HIPIC to systemic chemotherapy in patients with gastric cancer and peritoneal metastasis.

(**koemans1?**)

CHIMERA Trial

FLOT + HIPIC vs FLOT + Surgery in advanced gastric cancer 78

PREVENT

Diffuse-type gastric and GE junction adenocarcnoma:

FLOT → Gastrectomy + HIPIC → vs FLOT → Gastrectomy →

(**gotze1?**)