



# Rates of radical resection for gastro-oesophageal junction cancer in relation to survival outcomes in England

Henrik Møller, Victoria H Coupland, Karen M Linklater, Ruth H Jack, Elizabeth A Davies, William Allum

## THAMES CANCER REGISTRY

### Background

Radical resection surgery is attempted in a proportion of gastro-oesophageal junction (GOJ) cancer patients and these selected patients have a good chance of long term survival. Increasing the proportion of patients having radical surgery may possibly increase GOJ cancer survival in England. This presentation explores survival in relation to the rates of radical surgical treatment for GOJ cancer.

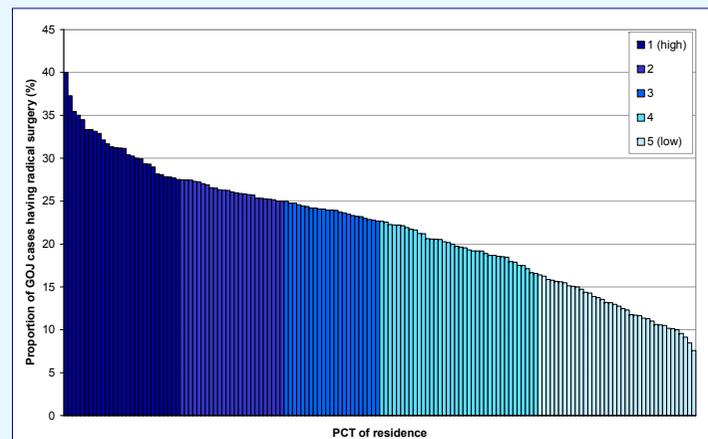
### Methods

Data on 32,442 gastro-oesophageal junction cancer patients diagnosed between 1998 and 2003 were extracted from cancer registries in England. Patients who had radical surgical treatment within six months of diagnosis were identified from the Hospital Episode Statistics dataset.

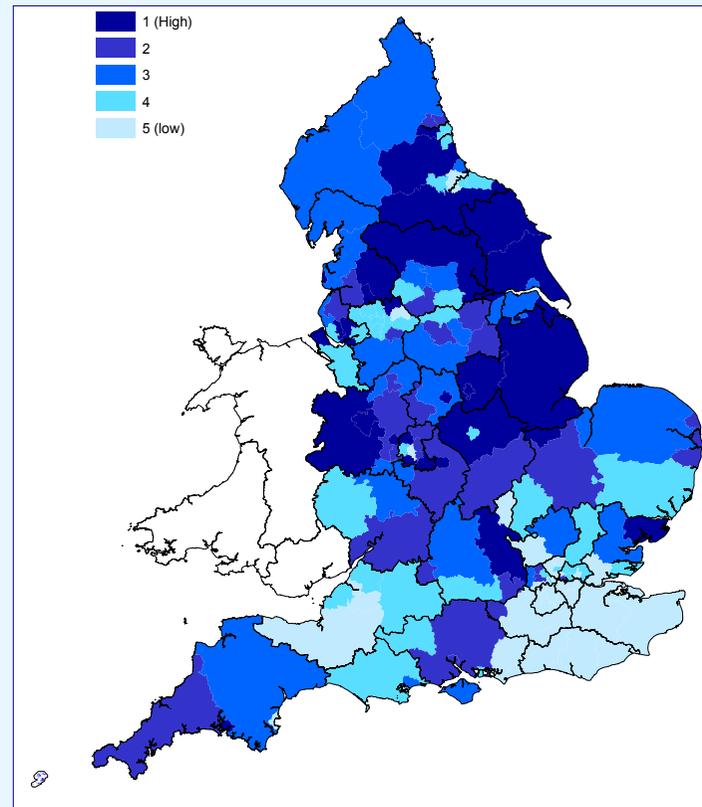
The proportion of GOJ cancer patients who received radical surgery in each Primary Care Trust (PCT) population was calculated. Each PCT in England was then assigned to a quintile of surgery with quintile one representing areas where a high proportion of patients received surgery and quintile five representing areas where a low proportion of patients received surgery. Each patient was assigned to a quintile dependent on their PCT of residence.

The survival of all GOJ cancer patients and GOJ cancer patients who had surgery were assessed in relation to PCT quintile of surgery, age, sex, socio-economic deprivation, and cancer network, using Cox regression analysis.

**Figure 1: The proportion of gastro-oesophageal junction cancer patients who received radical surgery by PCT in England, 1998-2003.**



**Figure 2: Geographical distribution of the proportion of gastro-oesophageal junction cancer patients who received radical surgery by PCT in England, 1998-2003.**



### Results

The proportion of patients receiving radical resection surgery by PCT ranged from 7.6% to 40.0% (Figure 1).

An average of 31% of patients received radical surgery in quintile one compared to 13% in quintile five (Table 1).

A greater proportion of patients received radical surgery in PCTs in Northern England. Lower proportions of patients had surgery in PCTs in South East England (Figure 2).

**Table 1: Number of patients, % having surgery, hazard ratios (HR) and 95% confidence intervals by PCT surgery quintile. Results unadjusted and adjusted for case-mix (age, sex, socio-economic deprivation) and cancer network (CN).**

All gastro-oesophageal patients				
Surgery Quintile	n	Surg %	Unadjusted HR (95% CI)	Case-mix & CN adj HR (95% CI)
1 (high)	6,368	31%	0.98 (0.95-1.02)	0.90 (0.85-0.96)
2	6,364	26%	0.96 (0.92-1.00)	0.90 (0.85-0.95)
3	6,500	24%	1.00 (0.97-1.04)	0.93 (0.88-0.98)
4	6,528	20%	1.04 (1.00-1.08)	0.98 (0.93-1.03)
5 (low)*	6,682	13%	1.00	1.00
			$\chi^2$ 7.58	20.34
			p-trend 0.0059	<0.0001
Operated gastro-oesophageal patients				
Surgery Quintile	n		Unadjusted HR (95% CI)	Case-mix & CN adj HR (95% CI)
1 (high)	1,972		1.20 (1.08-1.33)	1.09 (0.92-1.28)
2	1,664		1.03 (0.93-1.15)	0.97 (0.83-1.14)
3	1,565		1.08 (0.98-1.21)	1.03 (0.88-1.21)
4	1,282		1.10 (0.99-1.23)	1.08 (0.92-1.26)
5 (low)*	856		1.00	1.00
			$\chi^2$ 8.37	0.07
			p-trend 0.0038	0.7960 *baseline

Following adjustment for age, sex, socio-economic deprivation, and cancer network survival in the total GOJ cancer population increased with the rate of radical surgery (upper vs. lower PCT quintile of surgery HR=0.90 95% confidence interval [0.85-0.96]; p-trend<0.0001) (Table 1).

Among the subset of GOJ cancer patients who received radical surgery, there was no statistically significant association with the rate of surgery (p-trend=0.7960).

### Conclusions

The data suggest that an increase in the rate of radical surgery could plausibly lead to an overall increase in GOJ cancer survival. This analysis should be repeated for the next five year period as most cancer networks will have instituted action plans to comply with *Improving Outcomes Guidance* and radical surgery will have become centralised.