

Title:

Adjuvant radiotherapy following neo-adjuvant chemotherapy and surgery in oesophageal cancer: a retrospective cohort study of survival

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Objectives:

Following surgery for oesophageal cancer, positive circumferential resection margin (CRM) (R1), defined as margin <1mm, is an associated predictor of poor survival. The role of selective adjuvant radiotherapy in patients with R1 margin following neo-adjuvant chemotherapy (NACT) is unclear. We investigated survival outcomes following adjuvant radiotherapy in patients undergoing NACT with R1 margin from oesophageal surgery.

Methods:

We conducted a retrospective analysis from two high-volume centres. All patients who underwent NACT and surgery were included in the analysis. NACT consisted of 2 cycles of Cisplatin and 5-FU, or 3 cycles of Epirubicin, Cisplatin, and Capecitabine for T2+ or node

positive disease. Following surgical resection, adjuvant radiotherapy was offered to fit patients with R1 resection. Hazard ratios (HR) were derived using Cox proportional hazards analysis, with stratification by centre. A 5% significance level was used.

Results:

299 patients were included in the study. Seventy-three (24%) had R1; the remaining had a complete resection margin. Post-surgery, CRM \geq 1mm was associated with better overall survival (OS) (HR=0.54; 95% CI: 0.37–0.76) and relapse-free survival (RFS) (HR=0.49; 95% CI: 0.35–0.68) among all patients. In the R1 subgroup, adjuvant radiotherapy to NACT and surgery improved OS (median 22.4 vs 15.9 months; HR=0.63; 95% CI=0.32–1.26) and RFS (16.4 vs 13.0 months; HR=0.73; 95% CI=0.38–1.38).

Conclusion:

R0 resection rates and survival outcomes were comparable to studies of pre-operative CRT and superior to studies of NACT alone. NACT and selective adjuvant CRT for R1 resection is an acceptable alternative to pre-operative CRT for patients with resectable oesophageal cancer.

Acknowledgements:

SM is part funded by Biomedical Research Centre, Oxford, UK