

Neoadjuvant Chemotherapy vs. Neoadjuvant Chemoradiotherapy for Cancer of the Oesophagus or Gastro-Oesophageal Junction: A Randomized Clinical Trial

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Background

Neoadjuvant therapy improves long-term survival after oesophagectomy treating oesophageal cancer. We aimed to compare the effects of neoadjuvant chemotherapy (nCT) with those of neoadjuvant chemoradiation (nCRT).

Methods

Our sample comprised 181 patients with carcinoma of the oesophagus or gastro-oesophageal junction who had access to curative-intended treatment; they enrolled in this multicentre trial, which was conducted in Sweden and Norway. The primary outcome was histological complete response after neoadjuvant treatment. Study participants were randomized to nCT or nCRT, followed by surgery with two-field lymphadenectomy. Three cycles of platin/5-fluorouracil were administered in both arms, while 40 Gy of concomitant radiotherapy was added in the nCRT arm.

Findings

Tumour regression was considerably more pronounced after nCRT than after nCT. Histological complete response was achieved in 28% after nCRT, versus 9% after nCT ($P = 0.002$), a difference of 19% (95% CI 7.4–31.1%). Lymph-node metastasis was observed in 62% in the nCT group, versus 35% in the nCRT group ($P = 0.001$). The R0 resection rate was 87% after nCRT and 74% after nCT ($P = 0.04$).

There was no difference in overall three-year survival between treatment arms, although there was a statistically non-significant trend towards a differential effect of irradiation, with a survival benefit after nCRT in patients with squamous-cell carcinoma and impaired survival in patients with adenocarcinoma.

Interpretation

The addition of irradiation to neoadjuvant chemotherapy results in better regional tumour control without a corresponding gain in overall three-year survival.