(18)F-FDG PET-guided salvage neoadjuvant radiochemotherapy of adenocarcinoma of the esophagogastric junction: the MUNICON II trial.

Abstract:

Previous studies demonstrated that chemotherapy-induced changes in tumor glucose metabolism measured with (18)F-FDG PET identify patients who benefit from preoperative chemotherapy and those who do not. The prognosis for chemotherapy metabolic nonresponders is poorer than for metabolic responders. Therefore, we initiated this prospective trial to improve the clinical outcome of metabolic nonresponders using a salvage neoadjuvant radiochemotherapy. Fifty-six patients with locally advanced adenocarcinomas of the esophagogastric junction were included. Tumor glucose uptake was assessed by (18)F-FDG PET before chemotherapy and 14 d after initiation of chemotherapy. PET nonresponders received salvage neoadjuvant radiochemotherapy, whereas metabolic responders received neoadjuvant chemotherapy for 3 mo before surgery. Thirty-three patients were metabolic responders, and 23 were nonresponders. Resection was performed on 54 patients. R0 resection rate was 82% (95% confidence interval [CI], 66%-91%) in metabolic responders and 70% (95% CI, 49%-84%) in metabolic nonresponders (P = 0.51). Major histologic remissions were observed in 12 metabolic responders (36%; 95%
CI, 22%-53%) and 6 nonresponders (26%; 95% CI, 13%-46%). One-year progression-free rate was 74% ± 8% in PET responders and 57% ± 10% in metabolic nonresponders (log rank test, P = 0.035). One-year overall survival was comparable between the groups (~80%), and 2-y overall survival was estimated to be 71% ± 8% in metabolic responders and 42% ± 11% in PET nonresponders (hazard ratio, 1.9; 95% CI, 0.87-4.24; P = 0.10). This prospective study showed the feasibility of a PET-guided treatment algorithm. However, by comparing the groups of nonresponding patients in the current trial and the previous published MUNICON (Metabolic response evalUatioN for Individualisation of neoadjuvant Chemotherapy in Esophageal and esophagogastric adeNocarcinoma) I trial, increased histopathologic response was observed after salvage radiochemotherapy, but the primary endpoint of the study to increase the R0 resection rate was not met. The prognosis of the subgroup of PET nonresponders remains poor, indicating their different tumor biology.