FDG PET and CT in locally advanced adenocarcinomas of the distal oesophagus. Clinical relevance of a discordant PET finding.

AIM: The incidence of adenocarcinomas of the distal oesophagus (ADE) has dramatically increased in Western countries. The clinical importance of a FDG PET finding discordant with CT was determined in patients with locally advanced ADE. In addition, tumour standardized uptake values (SUV) were correlated with patient survival.

PATIENTS, METHODS: 40 consecutive patients were analyzed retrospectively. All patients underwent an attenuation corrected FDG PET scan (neck, chest, abdomen) and contrast enhanced helical CT of the chest and abdomen. PET and CT scans were reviewed independently and concomitantly with respect to metastases in predefined lymph node sites and organs. Any discordance between PET and CT was assessed for clinical relevance. Clinical relevance was defined as a change in the overall therapeutic concept (curative vs. palliative). Follow-up imaging and histological evaluation served as the gold standard. Mean tumour SUVs were determined by 1.5 cm regions of interest placed over the tumour's maximum.

RESULTS: When read independently from the CT scan FDG PET indicated a clinically relevant change in tumour stage in 9/40 patients (23%) and a non-relevant change in 11/40 patients (28%). PET was correct in 5/9 patients (56%) with clinically relevant discordances. In 4/9 patients PET was incorrect (3 false positive due to
With concomitant reading, PET indicated a clinically relevant change in tumour stage in 6/40 patients (15%) and a non-relevant change in 5/40 patients (13%). PET was correct in 5/6 patients (83%) with clinically relevant discordances. The patient with disseminated liver disease remained the single false negative. Overall, the benefit from PET was based on its higher diagnostic accuracy at organ sites. Tumour SUV did not correlate with patient survival. CONCLUSION: About half of discordances between FDG PET and CT are clinically relevant. Concomitant reading of PET and CT is advisable as it reduces the overall rate of discordances and enhances the accuracy of PET in clinical relevant discordances (from 56% to 83%).