PTU-174 SYSTEMATIC REVIEW AND META-ANALYSIS OF THE INFLUENCE OF HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2 (HER2) EXPRESSION AND AMPLIFICATION ON SURVIVAL IN PATIENTS WITH OESOPHAGEAL CANCER

doi:10.1136/gutjnl-2012-302514c.174

[1]D Chan,* [2]C Twine, [1]W Lewis. [1]*General Surgery, University Hospital of Wales, Cardiff, UK;* [2]*General Surgery, Royal Gwent Hospital, Newport, UK*

Introduction Survival and recurrence rates following oesophagectomy remain poor despite the use of neoadjuvant therapy. Human epidermal growth factor receptor-2 (HER2) overexpression is associated with poorer survival in patients with gastric cancer and trastuzumab, a monoclonal antibody against HER2 has been shown to be effective in patients with advanced gastric cancer. However, the influence of HER2 overexpression in patients with oesophageal cancer has been equivocal. We performed a systematic review and meta-analysis to determine the influence of HER2 overexpression and amplification on outcomes in patients with oesophageal cancer.
Methods A computerised search of MEDLINE was performed via PubMed and Embase from January 1990 to November 2011 using the MeSH subject headings: oesophageal neoplasm and human epidermal growth factor receptor 2 or HER2 or Neu or HER-2 or c-erbB-2 or c-erbB2 or erbB2 or CD340 or p185 to identify studies investigating the influence of HER2 protein overexpression or gene amplification on survival in patients with oesophageal cancer. The meta-analysis was performed in line with the recommendations from the Cochrane Collaboration and PRISMA guidelines using Review Manager 5.1. Statistical analysis of dichotomous variables were carried out using OR as the summary statistic. Random-effects models were used and were reported with 95% CIs ORs represent the odds of death during the study interval in a patient who was HER2 positive compared with a patient who was HER2 negative.
Results This review included 16 studies totalling 1549 patients with oesophageal cancer [1486 (96%) curative esophagectomy, 350 (22.6%) HER2 positive]. Immunohistochemistry was most commonly used to assess HER2 expression. 5-Year survival was significantly poorer in HER2 positive patients [OR 1.38, 95% CI (1.01 to 1.88), p=0.04]. Analysis according to histological type showed a significantly poorer survival in HER2 positive patients at 5 years for squamous cell carcinoma [OR 2.63, 95% CI (1.25 to 5.52), p=0.01] but not adenocarcinoma [OR 1.33, 95% CI (0.89 to 2.00), p=0.17]. However, sensitivity analysis for adenocarcinoma revealed the same trend [OR 1.91, 95% CI (1.15 to 3.17), p=0.01].
Conclusion HER2 overexpression and gene amplification was a poor prognostic indicator in patients with curable oesophageal cancer. This may provide the opportunity for wider application of therapeutic targeting of this receptor to improve the prognosis of patients with oesophageal cancer. A randomised trial is therefore needed to determine whether HER2 monoclonal antibody therapy improves survival in patients with curable oesophageal cancer.

Competing interests None declared.

PTU-175 VALUE OF PET-CT FOLLOWING NEO-ADJUVANT CHEMOTHERAPY TO PREDICT HISTOLOGICAL OUTCOME IN OESOPHAGEAL ADENOCARCINOMA

doi:10.1136/gutjnl-2012-302514c.175

[1]D Nasralla,* [1]S Dwerryhouse, [2]D Hall, [3]J Searle, [1]H Barr, [3]I Lyburn. [1]*Upper GI Surgery, Gloucester Royal Hospital, Gloucester, UK;* [2]*Cobalt Health, Gloucester, UK;* [3]*Radiology, Gloucester Royal Hospital, Gloucester, UK*

Introduction Repeat FDG-PET-CT imaging after neo-adjuvant chemotherapy (NAC) for oesophageal adenocarcinoma is controversial. Some authors claim repeat PET-CT enables clear management decisions to be made in carcinoma of the oesophagus[1 2] but this has been contradicted in a recent systematic review.[3] We reviewed patients with oesophageal adenocarcinoma who underwent pre and post NAC PET-CT to assess if metabolic response of the tumour correlated with operative histology findings.

Abstract PTU-175 Table 1

Group	N	Initial SUV_{max} mean (SEM)	Final SUV_{max} mean (SEM)	SUV ratio (final/initial)
Poorly differentiated	17	11.5 (1.5)	5.0 (0.8)	0.5 (0.1)
Moderately differentiated	10	8.0 (1.2)	4.1 (0.8)	0.5 (0.1)
T0-2	11	8.3 (1.4)	4.5 (0.8)	0.5 (0.1)
T3-4	16	11.4 (1.6)	5.1 (0.8)	0.5 (0.1)

Methods 27 patients with oesophageal adenocarcinoma underwent pre-and post-NAC PET-CT scan prior to oesophagectomy. The SUV_{max} pre and post NAC and the ratio of the final to initial SUV_{max} were calculated and compared with histological T and N stage, tumour area and differentiation.
Results No new metastatic lesions were discovered on post-NAC PET-CT. There was no significant difference between any of the parameters related to N stage. Initial SUV_{max} was greater for tumour stage T3-4 than for T0-2 [11.4 (SEM 1.6) vs 8.3 (1.4), p=0.05] and for poorly differentiated than for moderately differentiated tumours [11.5 (1.5) vs 8.0 (1.2), p=0.05]. Final SUV_{max} and the ratio of final to initial SUV_{max} were not significantly different for either T-stage or tumour differentiation. A correlation was seen between SUV_{max} and tumour area (0.39 vs 0.7).
Conclusion Initial SUV_{max} from PET-CT carried out before NAC is greater for tumours which are poorly differentiated than moderately differentiated, and for stage T3 or T4. The SUV_{max} from PET-CT studies carried out after the completion of NAC did not give additional information in this respect. The only area where it did offer potentially valuable information was correlation between tumour area and SUV_{max}, although this is unlikely to influence patient management. Post-NAC PET-CT did not predict histological outcome in our patients nor influence their management.

Competing interests None declared.

REFERENCES

1. **Lordick F**, *et al.* PET to assess early metabolic response and to guide treatment of adenocarcinoma of the oesophagogastric junction: the MUNICON phase II trial. *Lancet Oncol* 2007;**8**:797–805.
2. **Bjorn LDM**, *et al.* Neoadjuvant therapy of esophageal squamous cell carcinoma: response evaluation by PET-CT. *Ann Surg* 233:300–9.
3. **Kwee R**. Prediction of tumor response to neoadjuvant therapy in patients with esophageal cancer with use of 18 F FDG PET: a systematic review. *Radiology* 2010;**254**.

PTU-176 CENTRAL OBESITY AND AGE PREDICT CARDIA MUCOSAL LENGTH IN HEALTHY VOLUNTEERS: EVIDENCE FOR AN ACQUIRED ENTITY

doi:10.1136/gutjnl-2012-302514c.176

[1]E V Robertson,* [1]M H Derakhshan, [1]A A Wirz, [1]Y Y Lee, [2]S A Hanvey, [2]S A Ballantyne, [3]J J Going, [1]K E L McColl. [1]*Medicine and Cardiovascular Sciences, University of Glasgow, Glasgow, UK;* [2]*Department of Radiology, Gartnavel General Hospital, Glasgow, UK;* [3]*Department of Pathology, Glasgow Royal Infirmary, Glasgow, UK*

Introduction Oesophageal adenocarcinoma is thought to arise from columnar metaplasia of distal oesophageal mucosa caused by gastro-oesophageal reflux. Obesity is a risk factor for this process. There is some evidence that "normal" cardia may be an acquired mucosa