

PET-CT in esophageal cancer management: a cost effectiveness analysis study

ABSTRACT

The present investigation dealt with the assessment of clinicians perceived views on the impact of PET-CT in esophageal cancer management from practicality, clinical efficacy and cost –effectiveness point of views. Reviews on publication and retrospective data to develop and carry out a decision-making model-based economic evaluation to investigate the relative cost-effectiveness of PET/CT in esophageal cancer management staging compared with conventional pathway. Clinicians identified from patient medical records were included in the survey. Retrospective analysis of patient data from 2001-2008 was taken from esophageal cancer patient medical records and North West Cancer Intelligence Services (NWCIS) database. A decision tree was developed using TREEAGE software. The results of the cost-effectiveness analysis were presented in terms of the incremental cost-effectiveness ratios (ICERs). PET compared with conventional work-up results for ICER for the strategy estimated at £28,460 per QALY; PET/CT compared with PET for ICER was £ 32,590 per QALY; and the ICER for PET/CT combined with conventional work-up versus PET/CT was £ 44,118. The package became more expensive with each additional diagnostic test added to PET and more effective in terms of QALYs gained. The conventional work-up was the preferred options as probabilistic sensitivity analysis showed at a willingness-to-pay threshold of £ 20,000 per QALY. Result of the current analysis suggested that the use of PET/CT in the diagnosis of esophageal cancer was unlikely to be cost-effective given the current willingness-to-pay thresholds that were accepted in the United Kingdom by decision-making bodies such as the National Institute for Health and Clinical Excellence.

Keyword: PET-CT; Esophageal cancer; Cost effectiveness analysis; Tree age modelling; Economic analysis