PET-PANC: Multi-centre prospective diagnostic accuracy and clinical value trial of FDG PET/CT in the diagnosis and management of suspected pancreatic cancer.

Paula Ghaneh, Wai Lup Wong, Andrew Titman, Catrin Plumpton, Sobhan Vinjamuri, Colin Johnson, Mohammed Abu Hilal, Antony Higginson, Andrew M Smith, Andrew Scarsbrook, Colin McKay, Robert Sutcliffe, Hemant Kocher, David Cunningham, Stephen P. Pereira, Brian Davidson, David Chang, Saboor Khan, Christopher Halloran and John P. Neoptolemos

University of Liverpool, Liverpool, United Kingdom; Paul Strickland Scanner Centre, Mount Vernon Hospital, Middlesex, United Kingdom; Lancaster University, Lancaster, United Kingdom; Bangor University, Bangor, United Kingdom; Royal Liverpool and Broadgreen University Hospital NHS Trust, Liverpool, United Kingdom; Southampton University Hospitals NHS Trust, Southampton, United Kingdom; Southampton University Hospitals NHS Trust, Southampton, United Kingdom; Portsmouth Hospitals NHS Trust, Portsmouth, United Kingdom; Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom; Glasgow Royal Infirmary, Glasgow, United Kingdom; University Hospitals Birmingham NHS Foundation Trust, Birmingham, United Kingdom; Barts Health NHS Trust, London, United Kingdom; Royal Marsden Hospital, Surrey, United Kingdom; University College London, London, United Kingdom; Royal Free London NHS Foundation Trust, London, United Kingdom; East Lancashire Hospitals NHS Trust, Blackburn, United Kingdom; University Hospitals Coventry and Warwickshire NHS Trust, Coventry, United Kingdom

Abstract Disclosures

Abstract

4008

Background: Pancreatic cancer diagnosis and staging is challenging. FDG PET/CT adds anatomic localization to functional data. The aim of this study was to determine the impact of FDG PET/CT in addition to standard diagnostic workup in patients with suspected pancreatic cancer. Methods: Patients with suspected pancreatic cancer underwent FDG PET/CT following multi-detector CT (MDCT). FDG PET/CT scans were reviewed and quality assured centrally. Diagnosis, staging and planned management were recorded before and after FDG PET/CT. Reference standard was histology or clinical outcome. Primary outcome measure was incremental diagnostic value of FDG PET/CT in addition to MDCT. Sample size was 500 patients, following interim analysis; 80% power to detect increase in sensitivity from 81% to 90% and specificity from 66% to 80%. Secondary outcome measures were changes in diagnosis, staging, and management; cost effectiveness was estimated. Results: Between January 2011 and April 2013 589 patients with suspected pancreatic cancer underwent MDCT and FDG PET/CT in 18 UK centres. 550 patients had complete data and in range FDG PET/CT. 261 patients (47%) had pancreatic ductal adenocarcinoma (PDAC). For the diagnosis of PDAC, both sensitivity (92.7% [95% CI 89.6%, 95.9%] compared to 88.5% [95% CI 84.6%, 92.4%], p=0.010) and specificity (75.8% [95% CI 70.8%, 80.7%] compared to 70.6% [95% CI 65.3%, 75.8%] p=0.023) were significantly higher for FDG PET/CT than MDCT. FDG PET/CT correctly changed the staging of PDAC in 56 patients (14%) (p=0.001). FDG PET/CT influenced management in 250 (45%) of patients. FDG PET/CT stopped futile resection in 58 patients (20%) due to have surgery. FDG PET/CT was associated with a QALY gain of 0.0157 (95% CI 0.0101, 0.0430) and cost saving of £645 (95% CI £1314, £2743). In the base case model FDG PET/CT dominated MDCT alone and is likely to be cost effective for the UK NHS. Conclusions: FDG PET/CT provided significant incremental diagnostic benefit in the diagnosis of pancreatic cancer and had a significant influence on the staging and management of patients. FDG PET/CT was cost effective at current reimbursement rates for FDG PET/CT to the UK NHS. Clinical trial information: 73852054.