PET-NECK: a multicentre randomised Phase III non-inferiority trial comparing a positron emission tomography–computerised tomography-guided watch-and-wait policy with planned neck dissection in the management of locally advanced (N2/N3) nodal metastases in patients with squamous cell head and neck cancer

Hisham Mehanna,1* Chris C McConkey,2 Joy K Rahman,2 Wai-Lup Wong,3 Alison F Smith,4 Chris Nutting,5 Andrew GJ Hartley,6 Peter Hall,4 Claire Hulme,4 Dharmesh K Patel,2 Sandra Ventorin von Zeidler,7 Max Robinson,8 Bal Sanghera,3 Lydia Fresco9 and Janet A Dunn2

1Institute of Head & Neck Studies and Education, University of Birmingham, Birmingham, UK
2Warwick Clinical Trials Unit, University of Warwick, Coventry, UK
3Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, UK
4Academic Unit of Health Economics, University of Leeds, Leeds, UK
5Royal Marsden Hospital, London, UK
6University Hospital Birmingham, Birmingham, UK
7Department of Pathology, Federal University of Espírito Santo, Vitória, Brazil
8Centre for Oral Health Research, Newcastle University, Newcastle upon Tyne, UK
9University Hospitals Coventry and Warwickshire, Coventry, UK

*Corresponding author H.Mehanna@bham.ac.uk

Declared competing interests of authors: Hisham Mehanna reports that he is a member of the Health Technology Assessment Clinical Trials Board and Claire Hulme reports that she is a member of the Health Technology Assessment Commissioning Board. Andrew GJ Hartley and Max Robinson report grants during the conduct of the study.

Published April 2017
DOI: 10.3310/hta21170
Plain English summary

PET-CT-guided watch-and-wait versus planned neck dissection
Health Technology Assessment 2017; Vol. 21: No. 17
DOI: 10.3310/hta21170

NIHR Journals Library www.journalslibrary.nihr.ac.uk
Plain English summary

What was the problem?

Head and neck cancer has devastating effects on patients’ self-image, speech and swallowing. Chemoradiotherapy (CRT) has become an important way to treat this cancer. In patients whose cancer has spread to the neck lymph glands, current treatment includes removal of the neck lymph glands using an operation called neck dissection (ND). This can have significant complications and after-effects, such as shoulder disability, disfigurement of the mouth and neck, and long-term pain.

With the improvement in CRT, some now believe that ND may no longer be required if the neck disease is treated adequately by CRT. Furthermore, owing to an improved scanning technology called positron emission tomography (PET)-computerised tomography (CT), there is now better ability to identify patients whose neck disease has responded completely to CRT and who do not require a ND.

What did we do?

We compared routine ND with a PET–CT-guided watch-and-wait policy in patients with advanced neck disease to ascertain if PET–CT would result in a survival rate similar to ND, while reducing the number of NDs being performed. We also looked at the costs of both treatment strategies and their impacts on patients’ quality of life.

What did we find?

Patients who received PET–CT-guided surveillance showed similar survival outcomes to those who received planned ND. PET–CT surveillance also resulted in fewer complications and lower costs, supporting its use in routine practice.
Criteria for inclusion in the Health Technology Assessment journal
Reports are published in Health Technology Assessment (HTA) if (1) they have resulted from work for the HTA programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in Health Technology Assessment are termed ‘systematic’ when the account of the search appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

HTA programme
The HTA programme, part of the National Institute for Health Research (NIHR), was set up in 1993. It produces high-quality research information on the effectiveness, costs and broader impact of health technologies for those who use, manage and provide care in the NHS. ‘Health technologies’ are broadly defined as all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care.

The journal is indexed in NHS Evidence via its abstracts included in MEDLINE and its Technology Assessment Reports inform National Institute for Health and Care Excellence (NICE) guidance. HTA research is also an important source of evidence for National Screening Committee (NSC) policy decisions.

For more information about the HTA programme please visit the website: http://www.nets.nihr.ac.uk/programmes/hta

This report
The research reported in this issue of the journal was funded by the HTA programme as project number 06/302/129. The contractual start date was in April 2007. The draft report began editorial review in July 2015 and was accepted for publication in June 2016. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors’ report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health.

© Queen’s Printer and Controller of HMSO 2017. This work was produced by Mehanna et al. under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).
Health Technology Assessment Editor-in-Chief

Professor Hywel Williams  Director, HTA Programme, UK and Foundation Professor and Co-Director of the Centre of Evidence-Based Dermatology, University of Nottingham, UK

NIHR Journals Library Editor-in-Chief

Professor Tom Walley  Director, NIHR Evaluation, Trials and Studies and Director of the EME Programme, UK

NIHR Journals Library Editors

Professor Ken Stein  Chair of HTA Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

Professor Andree Le May  Chair of NIHR Journals Library Editorial Group (EME, HS&DR, PGfAR, PHR journals)

Dr Martin Ashton-Key  Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

Professor Matthias Beck  Chair in Public Sector Management and Subject Leader (Management Group), Queen's University Management School, Queen's University Belfast, UK

Dr Tessa Crilly  Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin  Senior Scientific Advisor, Wessex Institute, UK

Ms Tara Lamont  Scientific Advisor, NETSCC, UK

Dr Catriona McDaid  Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

Professor William McGuire  Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads  Professor of Health Sciences Research, Health and Wellbeing Research Group, University of Winchester, UK

Professor John Norrie  Chair in Medical Statistics, University of Edinburgh, UK

Professor John Powell  Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

Professor James Raftery  Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma  Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts  Professor of Child Health Research, UCL Institute of Child Health, UK

Professor Jonathan Ross  Professor of Sexual Health and HIV, University Hospital Birmingham, UK

Professor Helen Snooks  Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Jim Thornton  Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Professor Martin Underwood  Director, Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of members of the NIHR Journals Library Board: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: journals.library@nihr.ac.uk