Ablative therapy for people with localised prostate cancer: a systematic review and economic evaluation

Craig R Ramsay, 1* Temitope E Adewuyi, 1
Joanne Gray, 2 Jenni Hislop, 3 Mark DF Shirley, 4
Shalmini Jayakody, 1 Graeme MacLennan, 1
Cynthia Fraser, 1 Sara MacLennan, 5 Miriam Brazzelli, 1
James N'Dow, 5 Robert Pickard, 6 Clare Robertson, 1
Kieran Rothnie, 1 Stephen P Rushton, 4 Luke Vale 3
and Thomas B Lam 5

Declared competing interests of authors: none

Published July 2015 DOI: 10.3310/hta19490

Plain English summary

Ablative therapy for people with localised prostate

Health Technology Assessment 2015; Vol. 19: No. 49

DOI: 10.3310/hta19490

NIHR Journals Library www.journalslibrary.nihr.ac.uk

¹Health Services Research Unit, University of Aberdeen, Aberdeen, UK

²Faculty of Health & Life Sciences, Northumbria University, Newcastle upon Tyne, UK

³Health Economics Group, Institute of Health and Society, Newcastle University, Newcastle upon Tyne, UK

⁴School of Biology, Newcastle University, Newcastle upon Tyne, UK

⁵Academic Urology Unit, University of Aberdeen, Aberdeen, UK

⁶Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK

^{*}Corresponding author

Plain English summary

A blative therapies are relatively new procedures for the treatment of localised prostate cancer. These therapies are promising because they may be as effective as either surgery or radiotherapy (i.e. standard treatments), while causing fewer side effects (e.g. incontinence or erection difficulties). They may also be better than active surveillance (whereby patients are monitored and only treated if there is cancer progression) because they actively treat cancer at diagnosis. They involve the application of different types of energy to either the entire prostate or specific areas with cancer, to achieve tissue destruction. Examples include cryotherapy (using rapid freezing and thawing), high-intensity focused ultrasound (HIFU, using heat generated from sound waves) and brachytherapy (using radioactive seeds implanted into the prostate). These procedures are generally carried out on a day-patient basis with patients allowed home the following day. The results from our study suggested that cryotherapy, HIFU and brachytherapy may have potential clinical benefits for many patients in terms of reduced incontinence and erection difficulties, while possessing similar benefits in terms of cancer control compared with either surgery or radiotherapy. However, the overall quality of the available evidence was very poor owing to the low quality of identified studies, and it remained impossible to determine if the benefits were real. In terms of balancing the cost of the ablative treatments against the benefits and harms produced, no technology appears better.

HTA/HTA TAR

Health Technology Assessment

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 5.116

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, The Cochrane Library and the ISI Science Citation Index.

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: nihredit@southampton.ac.uk

The full HTA archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hta. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

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 10/136/01. The contractual start date was in April 2012. The draft report began editorial review in October 2013 and was accepted for publication in April 2014. 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 2015. This work was produced by Ramsay 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).

Editor-in-Chief of *Health Technology Assessment* and NIHR Journals Library

Professor Tom Walley Director, NIHR Evaluation, Trials and Studies and Director of the HTA 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

Professor Aileen Clarke Professor of Public Health and Health Services Research, Warwick Medical School, University of Warwick, UK

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Peter Davidson Director of NETSCC, HTA, UK

Ms Tara Lamont Scientific Advisor, NETSCC, UK

Professor Elaine McColl Director, Newcastle Clinical Trials Unit, Institute of Health and Society, Newcastle University, UK

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

Professor Geoffrey Meads Professor of Health Sciences Research, Faculty of Education, University of Winchester, 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 Helen Snooks Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, 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: nihredit@southampton.ac.uk