Faecal immunochemical tests versus colonoscopy for post-polypectomy surveillance: an accuracy, acceptability and economic study

Wendy Atkin,1*† Amanda J Cross,1* Ines Kralj-Hans,1 Eilidh MacRae,1 Carolyn Piggott,2 Sheena Pearson,2 Kate Wooldrage,1 Jeremy Brown,1 Fiona Lucas,1 Aaron Prendergast,1 Natalie Marchevsky,1 Bhavita Patel,1 Kevin Pack,1 Rosemary Howe,1 Hanna Skrobanski,3 Robert Kerrison,3 Nicholas Swart,4 Julia Snowball,2 Stephen W Duffy,5 Stephen Morris,4 Christian von Wagner3 and Stephen Halloran2

1Cancer Screening and Prevention Research Group, Department of Surgery and Cancer, Imperial College London, London, UK
2Bowel Cancer Screening Programme Southern Hub, Guildford, UK
3Research Department of Behavioural Science and Health, University College London, London, UK
4Department of Applied Health Research, University College London, London, UK
5Centre for Cancer Prevention, Wolfson Institute of Preventative Medicine, Queen Mary University, London, UK

*Corresponding authors amanda.cross@imperial.ac.uk
†In memoriam

Declared competing interests of authors: Wendy Atkin and Amanda J Cross report grants from the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) programme, grants from Cancer Research UK (Population Research Committee – Programme Award C8171/A16894) and non-financial support from Eiken Chemical Co. Ltd (Tokyo, Japan) (MAST is UK distributor) during the conduct of the study. Stephen Morris is a member of the NIHR Health Services and Delivery Research funding board. Sheena Pearson, Carolyn Piggott and Julia Snowball all report grants from the NIHR HTA programme during the conduct of the study.

Disclaimer: This is a summary of independent research funded by the NIHR HTA programme and the Bobby Moore Fund for Cancer Research UK. The views expressed are those of the authors and not necessarily those of the NHS, NIHR, the Department of Health and Social Care or Cancer Research UK. Infrastructure support for this work was provided by the NIHR Imperial Biomedical Research Centre.

Published January 2019
DOI: 10.3310/hta23010
Plain English summary

Post-polypectomy surveillance: FIT vs. colonoscopy
Health Technology Assessment 2019; Vol. 23: No. 1
DOI: 10.3310/hta23010

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

Bowel cancer typically develops from lesions called adenomas. Although common, most adenomas do not develop into cancer. Adenomas detected during a bowel examination, called a colonoscopy, are usually removed during this procedure. However, even after adenoma removal, some patients are still at greater risk of bowel cancer.

Depending on the number and size of adenomas found, patients are invited for a colonoscopy after 1, 3 or 5 years. Most of these additional colonoscopies will not detect cancer and they are expensive, often uncomfortable and can harm the bowel.

Both bowel cancer and adenomas can cause bleeding in the bowel. This study examined whether or not a test for blood in stool, completed at home (known as the faecal immunochemical test (FIT)), could be used instead of colonoscopy to monitor patients following adenoma removal. Colonoscopy would then be offered only to those who had a positive FIT result, indicating blood in the stool.

This study invited individuals for annual FITs for 3 years who, as part of the Bowel Cancer Screening Programme, had one or two large adenomas or three or four small adenomas removed. If a FIT detected blood in the stool at any of the tests, these individuals were immediately offered a colonoscopy. If a FIT did not detect blood in the stool at any test, these individuals were offered a colonoscopy 3 years after their adenomas were removed, as were participants who did not return their second or third FIT.

The study demonstrated that an annual FIT could identify 85 of every 100 cancers and 57 of every 100 patients with adenomas if repeated over 3 years. Annual FITs were considerably cheaper than colonoscopy after 3 years. Participants reported that the FIT was easy to use and provided reassurance. However, some were concerned that the FIT would not be as effective as colonoscopy.
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 09/22/192. The contractual start date was in January 2011. The draft report began editorial review in August 2017 and was accepted for publication in March 2018. 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 and Social Care. 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 and Social Care.

© Queen’s Printer and Controller of HMSO 2019. This work was produced by Atkin et al. under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. 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).
NIHR Journals Library Editor-in-Chief

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

NIHR Journals Library Editors

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

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

Professor Matthias Beck  Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

Dr Tessa Crilly  Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin  Senior Scientific Advisor, Wessex Institute, UK

Dr Peter Davidson  Consultant Advisor, Wessex Institute, University of Southampton, 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 Wellbeing Research, 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 Great Ormond Street 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  Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of editors: www.journalslibrary.nihr.ac.uk/about/editors

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