Timing of surgical intervention for developmental dysplasia of the hip: a randomised controlled trial (Hip ‘Op)

Charlotte L Williams,1 Susie Weller,2 Lisa Roberts,2 Isabel Reading,3 Andrew Cook,4* Louisa Little,1 Wendy Wood,1 Louise Stanton,1 Andreas Roposch5 and Nicholas MP Clarke6

1Southampton Clinical Trials Unit, School of Medicine, University of Southampton, Southampton, UK
2Faculty of Health Sciences, University of Southampton, Southampton, UK
3Faculty of Medicine, University of Southampton, Southampton, UK
4Wessex Institute, University of Southampton, Southampton, UK
5Department of Orthopaedic Surgery, Great Ormond Street Hospital for Children, Institute of Child Health, University College London, London, UK
6Paediatric Orthopaedics, University Hospital Southampton NHS Foundation Trust, Southampton, UK

*Corresponding author andrewc@soton.ac.uk

Declared competing interests of authors: Andrew Cook is the vice chairperson of the National Institute for Health and Care Excellence’s Interventional Procedures Advisory committee. It is possible that the committee will issue guidance related to the management of hip dysplasia and, if so, it would use information in this report. Andrew Cook also reports that he is part of a secretariat for a number of National Institute for Health Research (NIHR) committees: in the NIHR Health Technology Assessment programme – The Intervention Procedures Topic Identification, Development and Evaluation (TIDE) panel and the Prioritisation Group; in the NIHR Public Health Research programme – the Research Funding Board and the Prioritisation Group. He is a voting member of the West Midlands Regional Advisory Committee for the NIHR Research for Patient Benefit programme.

Published October 2017
DOI: 10.3310/hta21630

Plain English summary

The Hip ‘Op RCT
Health Technology Assessment 2017; Vol. 21: No. 63
DOI: 10.3310/hta21630

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

Developmental dysplasia of the hip is a common birth problem caused by irregular hip development in babies. Babies born bottom first, and those with a family history of hip problems, are most at risk. When the diagnosis is made at > 3 months of age, surgery is almost always needed. The aim of surgery is to correct the hip position and restore normal movement.

Surgery can be complicated by avascular necrosis, in which the blood supply to the hip is interrupted. This can be devastating for the growing hip, leading to joint damage and, ultimately, hip replacement.

Some surgeons accept that babies treated early may need to be in plaster for longer, but may achieve better results, although there is a greater need for further surgery. Meanwhile, other surgeons believe that intentionally delaying treatment, until the development of a bony ossific nucleus in the hip, may necessitate a bigger operation initially, but will result in less additional surgery in later life.

There is no international agreement among paediatric surgeons regarding whether early or delayed treatment is best. This study was designed to address this question.

This was an ambitious randomised clinical trial that required 636 babies to be recruited and randomised to either early or intentionally delayed surgical treatment and then followed up over 5 years across 15 UK centres. As a precaution, it was decided to have an 18-month run-in period to see if it was likely that this recruitment could be achieved.

The trial closed early as a result of poor recruitment, and so the question could not be answered. Nevertheless, part of the research involved interviews with 14 families and highlighted rich data about getting access to expert orthopaedic care, the impact of the child’s surgery on family life and also what it was like to take part in this trial.
Impact 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 commissioned and funded by the HTA programme on behalf of NICE as project number 11/146/01. The protocol was agreed in April 2014. The assessment report began editorial review in November 2016 and was accepted for publication in June 2017. 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 Williams 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 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)

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

Dr Peter Davidson  Director of the NIHR Dissemination Centre, 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 Riemsmma  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 Snoooks  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