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York Trials Unit Briefing Note

A pragmatic randomised trial finds that General Practitioners' (GPs) access to Magnetic Resonance Imaging (MRI) of the knee is cost-effective

Background

GPs commonly see patients with knee problems. In younger patients, injured ligaments and torn menisci (cartilage) is a common cause. MRI of the knee is an accurate way of diagnosing these injuries; it provides a detailed picture of the knee and does not involve X-rays (see MRI of a knee below). There is uncertainty, however, concerning these types of knee injury, as to whether GPs should have open access to MRI in primary care or whether access should be restricted to secondary care at the request of hospital specialists. The York Trials Unit in collaboration with the University of Wales College of Medicine and the University of Aberdeen were funded by the Medical Research Council to evaluate whether the early use of GP access to MRI affects their diagnosis and management plans; whether it improves patient outcomes; and whether it reduces costs.

What we did

Of 647 general practices that were invited to take part across Yorkshire, North Wales and East Scotland, 285 (44%) agreed to do so. There were 553 eligible patients who consented to take part from 163 general practices who were individually randomised into two groups: those patients who were referred early by their GP for an MRI scan at their local hospital; or those directly referred for a hospital out-patient clinic appointment when a hospital specialist could request an MRI scan if clinically indicated. GPs recorded their diagnosis and management plans for patients at the start of the study and again when they received the results of the MRI scan or feedback from the hospital specialist. To collect data on patient outcomes and the costs associated with the two approaches, patients completed postal questionnaires at the start of the study and after 6, 12 and 24 months.

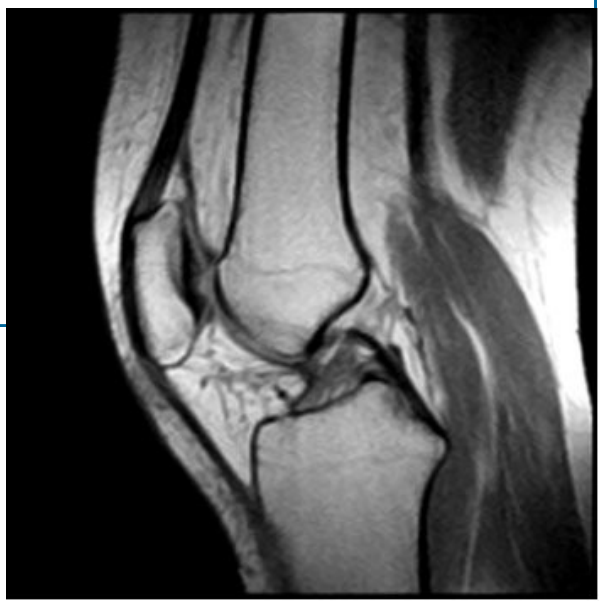
What we found

Direct access to MRI did statistically significantly increase GPs' confidence in their diagnosis and management plans compared with feedback from a hospital specialist. There was, however, no significant difference in the decisions that GPs made whether they had access to MRI or not. For patients' general physical functioning, GP access to MRI of the knee improved their average scores by 2.8 points which was not statistically significant but for their knee-related physical functioning it improved their average scores by 3.7 points which was statistically significant. On a scale of 0 to 100, however, these improvements only represent small benefits to patients. GP access to MRI increased the cost to the NHS by £294 per patient, although this additional cost is considered to be modest for the extra benefit to patients.

Implications for clinical practice

The results of the study show that GP early access to MRI for patients with knee injuries is recommended as being good value for money in terms of health sector resources. The implementation of such a policy is unlikely to result in savings for the NHS, but the additional cost is modest.

References for DAMASK trial overleaf



About the researchers:

This research was conducted by the DAMASK Trial team. The Chief Investigator was Prof Ian Russell with trial management and analysis provided by the YTU. The Trial Coordinator was Dr Stephen Brealey, Research Fellow, York Trials Unit, Stephen.brealey@york.ac.uk or 01904 321357.

For further details on the DAMASK Trial see:

DAMASK Trial Team. Influence of magnetic resonance of the knee on GPs' decisions: a randomised trial. *BJGP* 2007;57:622-629.

DAMASK Trial Team. Effectiveness of GP access to magnetic resonance imaging of the knee: a randomised controlled trial. *BJGP* 2008;58:767-774.

DAMASK Trial Team. Cost-effectiveness of magnetic resonance imaging of the knee for patients presenting in primary care. *BJGP* 2008;58:775-778.

Recent Unit Publications

Ashby R, **Turner G, Cross B, Mitchell N, Torgerson D**. A randomised trial of electronic reminders showed a reduction in the time to respond to postal questionnaires. *Journal of Clinical Epidemiology* 2010.

Ashby R, Bland JM, Cullum N, **Dumville J,** Hall J, **Kang'ombe A,** Madden M, O'Meara S, Soares M, **Torgerson D, Watson J.** Reflections on the recommendations of the EWMA Patient Outcome Group document. *Journal of Wound Care* 2010; 19(7): 282-285

Hunt K, **Adamson J**, Ebrahim S, Mutrie N. Exercise and the onset of disability in later life. *Journal of Aging and Health* 2010

Mitchell N, Hewitt CE, Torgerson DJ, on behalf of the SCOOP Trial Group. A controlled trial of envelope colour for increasing response rates in older women. *Aging Clinical & Experimental Research* 2010.

Rookmoneea M, **Dennis L, Brealey S**, Rangan A, White B, McDaid C, Harden M. The effectiveness of interventions in the management of patients with primary frozen shoulder. *Journal of Bone & Joint Surgery* 2010; 92B(9): 1267-1271

Book Chapters

Probst H, **Brealey S** (2010): Health Technology Assessment. In: Ramlaul A : Medical Imaging and Radiotherapy Research - Skills and Strategies. London: Elsevier

Scally A, **Brealey S** (2010). Literature Evaluated and Critique. In: Ramlaul A: Medical Imaging and Radiotherapy Research - Skills and Strategies. London: Elsevier

Recent Unit Activity

In collaboration with the University of Leeds, the University of Birmingham, the University of Edinburgh, NHS Leeds, NHS Wakefield District and the Department of Health, the YTU recently received funding from the National Institute for Health Research Public Health Research programme to undertake a cluster RCT, to determine the effectiveness of a school-based intervention known as 'Smoke Free Homes' to protect children from second-hand smoke. This study will be known as the CLASS trial (Children Learning About Second-hand Smoke).

The York Trials Unit

The York Trials Unit (YTU) is based in the **Department of Health Sciences, University of York,** and is dedicated to undertaking and supporting high quality randomised controlled trials (RCTs).

The RCT is the best study design for assessing the effectiveness and efficiency of health care interventions, and rigorous trials are needed to inform best clinical practice and policy.

Methodological reviews of RCTs have indicated that many trials have been designed and conducted with insufficient rigour to make their results entirely reliable. It is imperative, therefore, that clinical practice be informed by the results of high quality trials.

Our aims are:

- to conduct rigorous trials
- to provide support for trials external to the Unit
- To provide academic leadership for rigorous trial design.

We design and manage RCTs in a range of settings; including clinical trials, health services research and the social sciences (education, criminal justice etc). The TYU also conducts epidemiological surveys and Unit members also conduct systematic reviews.

YTU trials are funded from a range of sources including the Medical Research Council, NIHR HTA, charities and pharmaceutical companies.

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