Do magnetic resonance imaging findings identify patients with low back pain who respond better to particular interventions?

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Results: For LEP, there were significant differences among the three groups (p < 0.05). LEP was the only factor examined here that affected the ability to stand up from a 30 cm (p = 0.02) and 40 cm (p = 0.02) chair. In the standing 30 group, the cut-off was 40.28% and the AUC was 0.89 (p < 0.01). In the standing 40 group, the cut-off was 30.14% and the AUC was 0.93 (p < 0.01).

Conclusion(s): Our method of evaluating the LEP can predict the ability of cardiopulmonary patients in bed to stand up. Furthermore, like other studies, leg power differed between people who could stand up from different height chairs.

Implications: This method may assist the clinician to predict whether cardiopulmonary patients will be able to stand from particular heights when getting out of bed.

Keywords: Cardiopulmonary; Stand up; Leg extension power

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Ethics approval: The protocol of this study was approved by the Ethics Committee of the Miyakonojo Medical Association Hospital.

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DO MAGNETIC RESONANCE IMAGING FINDINGS IDENTIFY PATIENTS WITH LOW BACK PAIN WHO RESPOND BETTER TO PARTICULAR INTERVENTIONS? A SYSTEMATIC REVIEW

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Background: Magnetic resonance imaging (MRI) can reveal a range of degenerative findings and anatomical abnormalities; however, the clinical importance of these remains uncertain and controversial.

Purpose: To investigate if the presence of MRI findings identifies patients with low back pain (LBP) who respond better to particular interventions.

Methods: MEDLINE, EMBASE and CENTRAL databases were searched. We included randomised controlled trials (RCTs) investigating MRI findings as treatment effect modifiers for patients with LBP or sciatica. We excluded studies with specific diseases as the cause of LBP. Risk of bias was assessed using the criteria of the Cochrane Back Review Group. Each MRI finding was examined for its individual capacity for effect modification.

Results: Eight published trials met the inclusion criteria. None of the included trials evaluated physiotherapy treatments. The methodological quality of trials was inconsistent. Substantial variability in MRI findings, treatments and outcomes across the eight trials prevented pooling of data. Patients with Modic Changes type 1 when compared with patients with Modic Changes type 2 had greater improvements in function when treated by Diprosa (steroid) injection, compared with saline. Patients with central disc herniation when compared with patients without disc herniation had greater improvements in pain when treated by surgery, compared with rehabilitation.

Conclusion(s): Although individual trials suggested some MRI findings might be effect modifiers for specific interventions, none of these interactions were investigated in more than a single trial. High quality, adequately powered trials investigating MRI findings as effect modifiers are essential to determine the clinical importance of MRI findings in LBP and sciatica (PROSPERO: CRD42013006571).

Implications: From 38 subgroup interactions investigated, one presented a significant effect modifier for LBP and one for sciatica patients. However, the lack of statistically significant interactions may be partly due to most studies being underpowered for this type of analysis. Consequently it remains unclear whether MRI findings are important effect modifiers for interventions for LBP and sciatica patients, reinforcing the need for more and larger trials in this potentially important and evolving area.

Keywords: Low back pain; Magnetic resonance imaging; Subgroup

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