

Search strategy

Medline 1966 to 12/98 using the OVID interface. [{exp magnetic resonance imaging OR magnetic resonance image\$.mp OR magnetic resonance imaging.mp OR MRI.mp OR exp nuclear magnetic resonance OR NMR.mp} AND (exp knee OR exp knee injuries OR exp knee joint OR knee\$.mp) AND {exp hemarthrosis OR hemarthrosis.mp OR haemarthrosis.mp}]] LIMIT to human and english language.

Search outcome

Twenty six papers found of which 24 were irrelevant to the study question or of insufficient quality for inclusion; the remaining papers are shown in table 3.

Table 3

Author, date, and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Lundberg <i>et al</i> , 1996, Sweden ¹	69 patients with unilateral knee haemarthrosis MRI within days <i>v</i> arthroscopy at a mean of 6 days	Prospective single blind diagnostic	ACL tears Medial meniscal tears Lateral meniscal tears Medial collateral ligament tears	Sensitivity 86%, specificity 92% Sensitivity 74%, specificity 66% Sensitivity 50%, specificity 84% Sensitivity 56%, specificity 93%	Small sample size
Adalberth <i>et al</i> , 1997, Sweden ²	40 patients with acute traumatic intra-articular haemorrhage MRI within 1 week <i>v</i> arthroscopy within 1 week	Prospective diagnostic	Lateral meniscal tears Medial meniscal tears	Sensitivity 94%, specificity 29% Sensitivity 83%, specificity 27%	Small sample size

ACL=anterior cruciate ligament.

Mobilisation of lateral ligament ankle sprains

Report by Gordon Higgins, *Medical Student*
Search checked by Bruce Martin, *Clinical Fellow*

Clinical scenario

A 28 year old man presents to the emergency department with a swollen, bruised, and painful ankle after an inversion injury. After examination and appropriate investigations a grade 2 inversion ankle sprain is diagnosed. You wonder whether early mobilisation or immobilisation in a short leg cast is more suitable for this patient.

Three part question

In [adults with lateral ligament ankle sprains] is [immediate mobilisation better than immobilisation in a cast] at [decreasing pain and reducing time to full recovery].

Search strategy

Medline 1966 to 12/98 using the OVID interface. [{exp ankle OR ankle\$.mp OR exp ankle injuries OR exp ankle joint OR exp lateral ligament, ankle} AND {exp sprains and strains OR sprain\$.mp} AND {mobilis\$.mp OR mobilisation\$.mp}]] LIMIT to human and english language.

Comment

Arthroscopy was used as a gold standard in both selected studies. MRI lacks both the sensitivity required for a SnOut and specificity required for a SpIn on this evidence. The evidence only applies to the conditions stated (haemarthrosis and investigation within one week) and different results might be found at different times.

Clinical bottom line

The evidence does not support early use of MRI scanning in acute knee haemarthrosis.

- 1 Lundberg M, Odensten M, Thuomas KA, *et al*. The diagnostic validity of magnetic resonance imaging in acute knee injuries with hemarthrosis. A single-blinded evaluation in 69 patients using high-field MRI before arthroscopy. *Int J Sports Medicine* 1996;17:218-22.
- 2 Adalberth T, Roos H, Lauren M, *et al*. Magnetic resonance imaging, scintigraphy, and arthroscopic evaluation of traumatic hemarthrosis of the knee. *Am J Sports Med* 1997;25:231-7.

Search outcome

Twenty papers found of which 15 were irrelevant to the study question or of insufficient quality for inclusion; the remaining papers are shown in table 4.

Comment

While many papers have addressed the question there are few relevant RCTs. The two relevant reviews do not address the question directly and do not attempt formal meta-analysis.

Clinical bottom line

Early mobilisation of ankle sprains leads to quicker short term recovery without affecting long term outcome. It is the treatment of choice.

- 1 Hedges JR, Anwar RA. Management of ankle sprains. *Ann Emerg Med* 1980;9:298-302.
- 2 Dettori JR, Basmania CJ, Pearson BD, *et al*. Early ankle mobilisation. Part 1: The immediate effect on acute, lateral ankle sprains. *Mil Med* 1994;159:15-20.
- 3 Dettori JR, Basmania CJ. Early ankle mobilisation. Part 2: A one year follow-up of acute, lateral ankle sprains. *Mil Med* 1994;159:20-4.
- 4 Eiff MP, Smith AT, Smith GE. Early mobilisation versus immobilisation in the treatment of lateral ankle sprains. *Am J Sports Med* 1994;22:83-8.
- 5 Ogilvie-Harris DJ, Gilbert M. Treatment modalities for soft tissue injuries of the ankle: a critical review. *Clin J Sports Med* 1995;5:175-86.
- 6 Shrier I. Treatment of lateral collateral ligament sprains of the ankle: a critical appraisal of the literature. *Clin J Sports Med* 1995;5:187-95.

The BMA Library supplied the papers.

Table 4

Author, date, and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Hedges and Anwar, 1980, UK ¹	93 patients aged 15–65 with ankle sprains Elastic bandage and early weight bearing <i>v</i> non-weight bearing plaster splint Followed up at 1 week and 8 months	PRCT	Functional disability Pain Swelling Recurrent injury	No significant difference No significant difference No significant difference No significant difference	Many patients had previous injuries. 8 month follow up in only 33%
Dettoni <i>et al</i> , 1994, USA ^{2,3}	64 military personnel with ankle sprains Plaster cast <i>v</i> air stirrup <i>v</i> elastic wrap for 2 weeks Followed up during early course ² and at 1 year ³	PRCT	Return to work and running Range of motion Swelling and pain Difficulty running at 1 year	Quicker with early mobilisation (p=0.029) Significantly more with early mobilisation Significantly less with early mobilisation No significant difference	Moderate and severe sprains only. Long term follow up by postal questionnaire
Eiff <i>et al</i> , 1994, USA ⁴	82 military personnel with ankle sprains Elastic wrap for 2 days followed by air stirrup for 8 days <i>v</i> non-weight-bearing splint for 10 days Followed up at 3 and 6 weeks and 6 and 12 months	PRCT	Return to work Pain Residual symptoms	Significantly more likely in elastic wrap group Less pain (p=0.02) at 3 weeks in elastic wrap group No significant difference	
Ogilvie-Harris and Gilbert, 1995, Canada ⁵	84 articles on soft tissue ankle injuries	Critical review	Functional outcome	Early mobilisation appears to be better	No formal meta-analysis. Not all studies directly relevant to the study question
Shrier, 1995, Canada ⁶	13 RCTs on ankle sprains	Critical appraisal	Pain Swelling Instability	Less with early mobilisation Less with early mobilisation Less with early mobilisation	No formal meta-analysis. Not all studies directly relevant to the study question

PRCT=prospective randomised controlled trial.