The value of ultrasound scanning in predicting outcome of rotator cuff tendonopathy

post-randomisation. Participants who completed 6-month follow-up were re-contacted via a postal questionnaire 18-months post-randomisation. Data collected: shoulder disability score (0-23: 0 = no disability), self-reported pain (0-10: 0 = no pain), and for follow-up only, self-reported global improvement (5 point scale: "recovered" - "much worse"). A "good outcome" was defined as "recovered" or "improved " at both 6- and 18-months follow-up on the global improvement scale.

Results: 18-month response was achieved in 86 (87%) physiotherapy and 77 (79%) injection participants. Six-month disability scores were similar in those who were (mean=5.7; standard deviation (SD)=5.7) and were not (5.4; 5.2) re-contacted. Mean (SD) change, from baseline, in disability scores at 18-months were 7.61 (5.0) for physiotherapy and 7.08 (5.7) for injection (mean difference=0.53, 95% confidence interval (95% CI): -1.1,2.1). A "good outcome", defined from global improvement, was achieved in 82% (n=64) of the physiotherapy group and 78% (n=59) of the injection group (% difference = 4.4%; 95% CI: 0%, 17.1%). Similar self-reported pain levels, both for during the day and during the night, were recorded for the two treatment groups.

Conclusions: Long-term follow-up showed similar clinical outcomes between the two treatment groups at 18-months. Disability in the two treatment groups continued to reduce similarly between the 6-month and 18-month follow-up assessments.

References

[1] van der Windt et al, BMJ 1998
[2] Hay et al, Ann Rheum Dis [In press]

42. STRUCTURAL CERVICAL SPINE ABNORMALITIES AND SHOULDER REGION PAIN: IS THERE AN ASSOCIATION?

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Background: The prognosis of new episodes of shoulder region pain is poor: only 50-60% have resolved in 12-18 months. Neck and shoulder symptoms and signs often coexist, leading to possible mis-diagnosis and inappropriately targeted treatment. Furthermore, neck abnormalities might contribute to shoulder problems through mechanisms such as altered posture and muscle imbalance. We therefore investigated associations between structural neck abnormalities and shoulder region pain using magnetic resonance imaging (MRI).

Methods: This was a matched case-control study of 48 pairs of patients. Cases were patients presenting with a new episode of shoulder pain in primary care. Each case was individually matched by age and gender with a control, sampled from the age-sex register of the same general practice and having no current or past history of shoulder region pain. All cases and controls underwent a structured clinical assessment and cervical spine MRI. Scans were scored independently according to a standard protocol by two musculoskeletal radiologists (JS, IM), who were blind to case-control status. Differences between these two were resolved by consensus.

Results: Median age of participants was 51 years (range 19-79), 21 (44%) were female. Self-reported neck pain in the "last week" was recorded in 25 cases (52%) and 7 controls (15%) ($p<0.001$); and at "any other time" in 35 cases (73%) and 22 controls (46%) ($p=0.011$). Across levels C3/4 to C6/7 of the cervical spine, 38% of both cases and controls had disc height loss>50%; 21% of cases and 17% of controls had disc protrusion/bulge with root and/or cord compromise; 23% of cases and 33% of controls had foraminal stenosis; and 19% of both cases and controls had canal narrowing. One or more of the above abnormalities were present in 50% of cases and 48% of controls (percent difference 2%; 95% CI -15% to 20%).

Conclusions: Cervical spine MRI abnormalities were common in both cases and controls. Despite significantly more self-reported neck pain in patients who presented with shoulder region pain compared with controls, cervical spine MRI abnormalities were of similar prevalence in both groups. This study found no association between shoulder region pain and disc disease or nerve compromise as assessed by cervical spine MRI.

43. THE VALUE OF ULTRASOUND SCANNING IN PREDICTING OUTCOME OF ROTATOR CUFF TENDONOPATHY

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Background: The use of ultrasound scanning (US) is expanding in musculoskeletal disorders and has been found to be reliable in the assessment of rotator cuff tendons. The technique has undergone little other clinical evaluation, especially with regard to prognosis of shoulder disorders. We aim to assess the predictors of outcome including US in rotator cuff tendonopathy treated by corticosteroid injection and physiotherapy.

Methods: Sixty-nine subjects were recruited (30 male (43.5%), 39 female (56.5%), mean age 54.3 years (range 27 – 78 years)). Subjects were included with shoulder pain on active abduction for at least 2 weeks. Subjects were excluded with restriction in range of both passive external rotation and abduction, clinical evidence of complete rotator cuff tear or significant cervical spine disease. All subjects had base line assessment including range of movement and pain with resisted movement. Short form 36 was administered at baseline and 10 weeks. Shoulder disability questionnaire(SDQ), active and passive range of abduction and visual analogue scales (VAS) of pain at rest and with movement were measured at baseline, 1, 3 and 10 weeks. An experienced radiologist performed US of shoulders.

The investigator and physiotherapist were blinded to the results of US. All subjects were injected with Triamcinolone 20mg and Lignocaine 2% 5mls via lateral approach to the subacromial space and referred for usual physiotherapy.

Results: Linear regression analysis was used to assess relationship between outcome variables and baseline clinical and US findings.

Independent variables used were SDQ at baseline, age, full range of passive movement, neck pain, previous injection, trauma, range of active and passive abduction, duration of symptoms, VAS for pain at rest and US findings of calcification, degenerative change, tendon tears and presence of fluid.

Using SDQ at week 10 as dependant variable a significant relationship was found with SDQ at baseline ($p<0.001$) and with active abduction at baseline ($p<0.05$).

Using VAS for pain with activity at week 10 as dependant variable a significant relationship was found with SDQ at baseline ($p<0.001$), active abduction at baseline ($p<0.05$), VAS for pain with activity at baseline ($p<0.05$) and with presence of degenerative change on US ($p<0.05$).

Using VAS for pain at rest as dependant variable a significant relationship was found with SDQ at baseline ($p<0.05$).

Using Short Form 36 bodily pain score as dependant variable a significant relationship was found with the SDQ score at baseline ($p<0.001$).

Conclusions: No evidence was found to support the use of US to predict outcome in rotator cuff tendonopathy treated by corticosteroid injection and physiotherapy.

The most consistent predictor of outcome was score on SDQ at base line.

44. COST MINIMISATION ANALYSIS OF LOCAL CORTICOSTEROID INJECTION VERSUS PHYSIOTHERAPY FOR THE TREATMENT OF NEW EPISODES OF UNILATERAL SHOULDER PAIN IN PRIMARY CARE

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Background: Local steroid injections and community physiotherapy are of similar benefit for treating new episodes of shoulder pain presenting to primary care, (Hay et al, 2002) in terms of both shoulder disability and health status (EQ5D) measured at 6-months. Given this, cost of the two options is an important variable and this work reports the cost minimisation analysis.

Methods: The study was a pragmatic, multi-centre randomised clinical trial in 9 GP practices in North Staffordshire. Participants were randomised to community-based physiotherapy (n=103) or local steroid injection administered by a GP (n=104). The interventions consisted of up to eight 20-minute physiotherapy sessions or up to two injections. Both groups were assessed by a blinded study nurse at 6-weeks, after which they could receive additional care determined by the GP. The direct costs for the physiotherapy arm were obtained from specially designed audit sheets, and for the injection intervention arm from the GP records. All patients' general practice records were reviewed to determine treatments (trial treatments and co-interventions) received for shoulder pain during the 6-month post-randomisation period. Resource units and associated costs were collected from a primary and secondary care. These included the direct cost of physiotherapy sessions, and the direct cost of injection (GP visit and drug cost). Additional GP visits, orthopaedic and rheumatology outpatients and associated procedures were included.

Results: Review of GP notes was completed at 6-months for 101 (98%) in the physiotherapy group and 98 (94%) in the injection group. The mean total cost was #101.72 (range #0, #449) those receiving physiotherapy and #57.19 (#0, #961) injection, difference #44.53 (95% CI #17, #68). The mean intervention cost was #75.80 (#0, #192) physiotherapy and #15.13 (#0, #16) injection. Mean non intervention cost was #25.91 (#0, #437) physiotherapy and #42.06 (#0, #945) injection. Although additional costs were greater for injection than physiotherapy, they do not outweigh the large intervention cost for trial physiotherapy.