Treatment of frozen shoulder – evidence based

Postgraduate Teaching Programme 2010

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Areas to look at:

- Pain relieving modalities
  - NSAIDS
  - Intra-articular steroids
  - Supraclavicular nerve blocks

- Restoring range of motion/ function
  - Physio
  - MUA
  - Surgery
NSAIDS

- Must have regular analgesia
- Theoretical early role only; for synovitic pain
- N.b. Multi-factorial causes of pain; abnormal movement etc

- No studies regarding NSAIDS in literature

- Try if not contra-indicated with regular analgesics
Intra-articular steroids

- **Van der Windt 1998**
  - RCT
  - n=109, follow up 1 year
  - Steroid significantly better vs physio at 6 weeks for pain relief and disability (no ROM assessed)

- **Carette 2003**
  - RCT with Placebo
  - n=93
  - Compared injection, physio and combination
  - Combo is best: physio alone no benefit
Intra-articular steroids

- Shah and Lewis 2007
  - Systematic review
  - 3 high quality RCT showed benefit of 3 injections up to 16 weeks after 1st injection
  - Reduction in pain, improved function and ROM

- Intra-articular steroids give pain relief and therefore can improve function (Level 1)
Oral steroids

- Buchbinder 2004
  - Double blind RCT (n=50) with 3 weeks pred or placebo
  - Short effect <6 weeks for pain

- Cochrane review also by Buchbinder 2006
  - 5 small RCTs; variable quality
  - Short term benefit for pain only (Level 1); no evidence vs injection
Supraclavicular nerve block

- Dahan TH 2000
  - Double blind RCT with placebo
  - \(n=34\); mean 1 year symptoms
  - Bupivicaine; series of 3 injections
  - 64% reduction in pain vs 13% in placebo at 1 month
  - No effect on ROM
Supraclavicular nerve block

- **Jones DS 1999**
  - RCT by GP
  - N=30
  - 3 month f/u
  - Single injection (including steroid) vs intra-articular steroids
  - Faster resolution of pain in block group

- **Effectively reduces pain (Level 1)**
- ?role in diabetics/ avoid repeated steroids
Physiotherapy

- Bulgen 1984
  - Prospective, n=42, 8 month f/u
  - 4 groups: Intra-articular steroid injection/ physio/ ice/ pendular exercises for all
  - No difference in outcomes LONG TERM
  - Early pain relief for injection group
Physiotherapy

- **Diercks 2004**
  - supervised neglect vs intensive physio
  - n=77, prospective (non-randomised)
  - 2 year f/u
  - Exercise within the limits of pain had better results
  - 89% vs 63% ‘normal’ painless ROM at 24 months (Constant score >80)

- **No good evidence exists for use of physiotherapy alone (Level 2)**
MUA

- **Dodenhoff 2000**
  - N=37, prospective
  - MUA as EARLY treatment
  - 94% satisfaction (C. score 69 at 3 months)
  - At 3 months 60% no/mild disability

- **Hamdan 2003**
  - n=98 (22 DM). Follow up 8 months
  - Prospective; 3 groups: RESISTANT cases
  - MUA vs MUA + SALINE 100ML vs MUA + steroid
  - Improved function/ ROM at 3 months for all (saline best). High failure rate in DM
MUA

- **Kivimaki et al 2008**
  - Single blind RCT; 1 year follow up
  - N=125, mean 7 months frozen shoulder
  - 10% diabetic; **no previous treatments**
  - MUA VS home exercise programme
  - No difference at 3 months (better flexion MUA)

- **MUA alone has limited role in the management of freezing shoulder** (Level 1)

- **MUA may have a role in resistant cases** (Level 2)
Joint distension

- Arthrographic saline and/or steroid distension (under LA)
- Cochrane review 2008
  - Buchbinder et al
  - No meta-analysis possible; poor quality
  - Short term benefit for pain and ROM

- No evidence of benefit vs other treatments
Operative treatment

- Controversial
- No RCT; no comparisons to ‘supervised neglect’

- Ozaki 1989 (n=365)
  - 5% open release after 10.5 months

- Bunker 1995 (n=50)
  - 82% MUA, 12% open release

- Warner 1996 (n=81)
  - 41% MUA, 28% arthroscopic release
Arthroscopic release

- **Pollock 1994**
  - n=30, retrospective
  - Resistant cases (mixed primary and secondary)
  - 25 (83%) satisfactory results; DM 64% satisfactory
  - Pre-scope MUA

- **Ogilvie-Harris 1995**
  - Prospective cohort
  - n= 40; 1 year symptoms; 2-5 year follow up
  - MUA vs arth. release (extensive)
  - ROM equal; release had better pain and function scores (significant): diabetics no different
Arthroscopic release

- Berghs 2004
  - Arthroscopic capsular release (N=25)
  - 80% improved at 2 weeks: Pain (esp at night) and stiffness
  - C. score 25 pre vs 76 post op at mean 1 yr

- Role in pain relief and restoring ROM faster (Level 2/3)
Open release

- Osaki 1989
  - n=17
  - retrospective
  - Good results for pain relief and ROM
- Omari 2001
  - n=25 failed MUA proceeded to release
  - 80% good/excellent results for pain, function and ROM
Conclusions

- Lots of unanswered questions/controversy
- Poor quality studies
- Variable outcome measures used
- Constant scores of non-op vs op no appear no different long term
- No surgical treatment has clear advantage
Conclusions

- Need for good quality RCTs
  - to compare treatments in freezing vs frozen stages vs ‘supervised neglect’
  - Refractory cases/ Diabetics
  - ?effect of/on natural history
How to manage the patient

- Confirm frozen and rule out ‘stiff’ ones
- Freezing or frozen stage?
- Education reduces frustration
  - Incomplete but improved ROM by 2-3 years
  - Surgery may not affect long term outcome
How to manage the patient

- **Freezing stage**
  - steroid injections and home exercise programme

- **Frozen stage**
  - no good evidence but role for MUA or release to shorten natural history

- **Bottom line:**
  - ARE THEY WILLING TO PUT UP WITH IT?

- If not: Offer Release/ MUA
The End
References