

Treatment of frozen shoulder – evidence based

Postgraduate Teaching Programme
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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
 - Bupivacaine; 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

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