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P: In patients with acute anterior shoulder dislocations
I: Is the use of intra-articular lidocaine
C: Compared with IV analgesia/sedation
O: As effective in shoulder reductions?

Search Strategy: Pub med Ovid search- lidocaine and dislocations and intra-articular

Article:	Patients:	Study Type:	Outcomes:	Study Results:	Negatives:
Intraarticular Lidocaine versus Intravenous Procedural Sedation with Narcotics and Benzodiazepines for Reduction of the Dislocated Shoulder: A Systemic Review. Fitch et al. 2008 Society for Academic Emergency Medicine	6 level 1 randomized controlled trials	Review	Reduction success, pain, ease of reduction, time of reduction, and complications	Success- IAL 133/148 (89.9%), IV 129/135 (95.6%). Pain- no statistically significant diff in any study. Ease of reduction- reported in 3 of the 6 studies, with no statistical significance. Time- 4 of 6 studies looked at various time frames. Complications- sig fewer complications in the IAL group	-No studies compared IAL to etomidate, propofol, or ketamine. -Reduction technique was varied between studies and often was not standardized in a particular study. -Success may have required up to 3 reduction attempts.

<p>Intra-articular Lidocaine versus Intravenous Meperdine/ Diazepam in Anterior Shoulder Dislocation: A Randomized Controlled Trial. Moharari et al. Emergency Medicine Journal 2008</p>	<p>48 patients with non- habitual traumatic anterior shoulder dislocations.</p>	<p>Randomized, Prospective Study. 1% Lidocaine. Meperidine/ Diazepam</p>	<p>pain before injection, before reduction, and after reduction</p>	<p>Both groups demonstrated a similar significant decline in pain.</p>	<p>- did not common on success rates or ease of reduction - meperdine for reduction</p>
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<p>Comparison of Intra-articular Lidocaine and Intravenous Sedation for Reduction of Shoulder Dislocations. Miller et al. The Journal of Bone and Joint Surgery 2002</p>	<p>42 consecutive patients with acute anterior glenohumeral dislocation. 16 IAL, 14 IV sedation, 12 excluded</p>	<p>Randomized, Prospective Study. 20 ml 1% Lidocaine. 2 mg Versed and 100mcg Fentanyl. Modified Stimson technique</p>	<p>reduction success, pain, time to reduction, total LOS, cost</p>	<p>Success- 100% in both groups. Pain- avg pain score 7.0 IAL and 7.4 for IV (p=0.37) Time to reduction- 11.4 min IAL and 8.5 min IV (p=0.42) LOS- IAL 75 min and IV 185 min (p<0.01) Cost- IAL \$0.52 and IV \$97.64</p>	<p>-Small sample size -12/42 excluded</p>
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Intra-articular lidocaine for acute anterior shoulder dislocation reduction. Dhinakharan et al. Best Bets 2002

3 prospective randomized controlled trials

Review

reduction success and pain

No statistically significant difference in success rates or subjective pain scales in 3/3 studies

-All studies were small and therefore underpowered
-Varied reduction techniques

Anesthetic Methods for Reduction of Acute Shoulder Dislocations: a prospective randomized study comparing intraarticular lidocaine with intravenous analgesia and sedation. Kosnik et al. American Journal of Emergency Medicine 1999.

Patients who presented to the ED over a 30 month period with an acute anterior shoulder dislocation

Randomized, Prospective Study.
4mg/kg up to 200mg Lidocaine.
10mg Morphine up to 30mg and 5 mg Diazepam up to 20 mg.
Traction-Counter

reduction success, ease of reduction, pain

Success- no statistically sig dif, IV 20/20, IAF 25/29
Ease- no statistically sig dif, IV 3.32, IAL 4.45
Pain- no statistically sig dif, IV 3.95, IAL 4.9

- small sample size
- no clear alternative reduction technique
- varied physician experience

<p>Intraarticular Lidocaine versus Intravenous Analgesic for reduction of Acute Anterior Shoulder Dislocations. A Prospective Randomized Study. Matthews et al. American Journal of Sports Medicine 1995.</p>	<p>30 consecutive pts with acute ant shoulder dislocations. 15 IAL, 15 IV</p>	<p>Randomized, Prospective Study. 20 ml 1% Lidocaine. 10 mg Morphine and 2 mg Versed. Traction- Counter or scapular manipulation</p>	<p>difficulty, pain, complications, total LOS</p>	<p>Difficulty- no sig diff between groups Pain- 4.5 IAL and 5.2 IV, no sig diff Complications- increased in IV group LOS- 78 min IAL and 186 min IV (p=0.0004)</p>	<p>-small sample size -success? -Subjective diff scale -compared IAL to morphine/versed</p>
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Clinical Bottom Line: Reduction success rates and patient pain perception have not been shown to be significantly significant between intra-articular lidocaine and IV analgesia/sedation. IAL appears to be an effective alternative treatment strategy for acute anterior shoulder dislocations and is associated with decreased cost and complications. However, further studies comparing IAL to newer sedation medications should be further investigated.