

A Systematic Review and Network Meta-Analysis of Manual Reduction Methods for Anterior Shoulder Dislocation

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Abstract

Background: There has been no network meta-analysis (NMA) of reduction methods for anterior shoulder dislocation. We decided to find the best reduction method in terms of success rate, pain, and reduction time by NMA.

Methods: We searched Medline, PubMed, Embase, Cochrane, and ClinicalTrials.gov for RCTs registered until August 31, 2020, without language restrictions. Two independent authors performed screening and risk of bias assessment. We performed a traditional meta-analysis (TMA) and a NMA of Bayesian random effects model.

Results: For TMA, no significant differences were found in the only comparable pair of Kocher and Hippocratic methods (success rate: odds ratio (OR), 1.21; 95% confidence interval (CI), [0.53 - 2.75], pain during reduction: standard mean difference (SMD), -0.33; 95% CI: [-0.69- 0.02], duration of reduction: mean difference (MD), 0.19; 95% CI: [-1.77- 2.15]). For the NMA, only pain during reduction showed that the FARES method was significantly less painful than the Kocher (MD, -4.0; 95% credible interval, [-7.6, -0.36]). In the SUCRA plot of success rate, FARES method showed stably high values, and Boss–Halzach–Matter method also showed high values in the overall analysis. In the surface under the cumulative rating area (SUCRA) plot of pain during reduction, FARES (FAst, RELiable, and Safe) had the highest value in the overall analysis. In the SUCRA plot of duration of

reduction, both the modified external rotation and FARES method had high values. As for complications, one fracture was found in the Kocher method groups.

Authors' Conclusions: At present, the FARES method is the most recommended in terms of success rate, pain, and reduction time.