

Closed Reduction of Distal Radius Fractures: A Systematic Review and Meta-analysis

51.

Hjalte Würtz, Sükriye Corap, Julie Erichsen, Bjarke Viberg

Department of Clinical Research, University of Southern Denmark; Department of Orthopaedic Surgery and Traumatology, Hospital of South West Jutland; Department of Orthopaedic Surgery and Traumatology, Kolding Hospital; Department of Orthopaedic Surgery and Traumatology, Odense University Hospital

Background: To date, there has been insufficient evidence to determine the best possible method of closed reduction for distal radial fractures (DRF).

Purpose / Aim of Study: To compare reduction of DRF by finger-trap traction (FTT) with manual traction (MT) in terms of radiographic outcome and pain in RCTs.

Materials and Methods: Pubmed, Embase and Cochrane databases were searched on March 1st 2016. Two authors independently screened 4348 articles by title and abstract. 14 articles were reviewed full-text. Bias was assessed by the Cochrane Risk of Bias Tool. Meta-analysis was performed for radial shortening and dorsal tilt while it was not possible for pain assessment due to different outcome measures.

Findings / Results: 3 RCTs with a total of 483 patients were included, 240 FTT and 243 MT. Risk of bias was generally unclear. None of the studies reported any statistically or clinically significant differences in radiographic outcome. Forest plot of the dorsal tilt showed 0.43[0.25;0.61, $p < 0.00001$] in favor of MT. Radial shortening forest plot showed -0.19[-0.37;-0.01, $p = 0.04$] in favor of FTT. One study found FTT associated with less pain, even without anesthesia, and another found FTT to be associated with a better functional outcome.

Conclusions: FTT seems to be slightly superior in restoring radial length compared to MT whereas MT seems slightly superior in restoring dorsal tilt compared to FTT. FTT might be less painful. The studies were very heterogenic and further studies are warranted.

No conflicts of interest reported