

Cast Selection and Non-union Rates for Acute Scaphoid fractures Treated Conservatively A Systematic Review and Meta-Analysis

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Introduction

Cast selection for conservatively treated acute scaphoid fractures remains controversial. Cast options include short arm versus long arm, and those that include the thumb or leave it free. We sought to investigate the role of how cast choice affects nonunion rates after conservative management of scaphoid fractures.

Methods

We searched PubMed, Embase, and Google Scholar from inception through July 14, 2020, according to the Preferred Reporting Items for Systematic Review and Meta-Analyses guidelines. We extracted information of interest, including cast type, and non-union rates at the end of the treatment period. We then performed a meta-analysis using the random-effects model.

Results

We identified seven relevant studies. Non-union was observed in 15 out of 156 (9.6%) with short-arm cast and 13 out of the 124 (10.5%) with long-arm cast (OR=0.79, 95% CI [0.19, 3.26], p=0.74, Figure 1). Non-union was observed in 18 out of 174 (10.3%) with thumb immobilization cast and 18 out of the 179 (10.1%) without thumb immobilization (OR=0.97, 95% CI [0.49, 1.94], p=0.69, Figure 2).

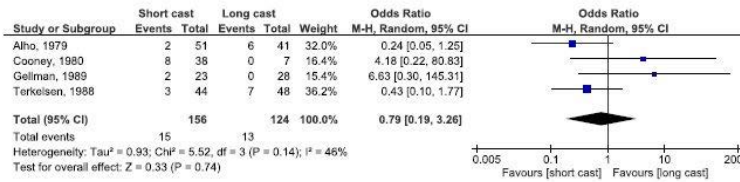


Figure 1

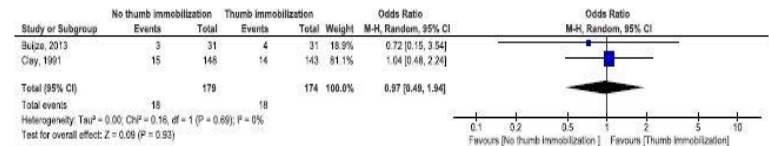


Figure 2

Conclusion

In our study, short arm casting was proven non-inferior to long arm casting. Similarly, casts without thumb immobilization were equally as effective as casts with thumb immobilization in terms of non-union rates for acute scaphoid fractures treated non-operatively.