

Do NSAIDs' Decrease Union Rates Following Joint Arthrodesis? A Meta-Analysis

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Background: Nonsteroidal anti-inflammatory drugs (NSAIDs) are amongst the most widely used and prescribed medications because of their roles in markedly reducing inflammation and pain, in addition to their non-addictive properties and safety profiles. However, surgeons hesitate to prescribe NSAIDs for post operative pain due to the concern of non-union following fusion procedures given the potential inhibition of the bone's inflammatory healing response. The purpose of this study then is to review all relevant literature and elucidate whether NSAIDs increase the risk of non-union in the setting of fusion procedures.

Methods: Two researchers conducted a thorough systematic review of MEDLINE, EMBASE, and hand selected articles, identifying 20 studies for inclusion from the original 2,977 articles queried. The variables of interest encompassed demographic factors, procedural details, administration and type of NSAIDs, the number of patients exposed to NSAIDs with and without successful union (case group), as well as the number of patients who did not receive NSAIDs with and without successful union (control group). All data was analyzed using a maximum likelihood random-effects model. The number of non-union events and nonevents from each study were used to calculate the Odds Ratio (OR).

Results: After collecting available data, twelve articles met final inclusion criteria to be included in the final statistical analysis. NSAID exposure showed a nonsignificant influence on non-union following fusion or arthrodesis procedures (OR, 1.48; confidence interval (CI), 0.96 to 2.30).

Conclusion: Our updated meta-analysis provides reassuring evidence that NSAIDs do not significantly impact bony healing following fusion or arthrodesis procedures. These findings support the safe use of NSAIDs in managing postoperative pain without substantial concern for non-union risk.