Ibuprofen Does Not Increase Bleeding in Plastic Surgery Patients

Brian P. Kelley, MD; Katelyn G. Bennett, MD; Kevin C. Chung, MD, MS; Jeffrey H. Kozlow, MD, MS

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PURPOSE: Non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen are common medications with multiple useful effects including pain relief and reduction of inflammation. Surgeons commonly hold all NSAIDs peri-operatively because of bleeding concerns. However, not all NSAIDs irreversibly block platelet function. We hypothesized that the use of ibuprofen would have no effect on postoperative bleeding in soft tissue surgery patients, like plastic surgery.

METHODS: A literature review was performed using Medline (PubMed), EMBASE, and the Cochrane Collaboration Library for primary research articles on ibuprofen and bleeding. Inclusion criteria were primary journal articles examining treatment of acute postoperative based on any modality. Data related to pain assessment, postoperative recovery, and complications were extracted. Bias assessment and meta-analysis were performed.

RESULTS: A total of 881 publications were reviewed. Four primary randomized controlled trials were selected for full analysis.[1-4] Articles were of high quality by bias assessment. No significant difference was noted regarding bleeding events ($p = 0.32$) and pain control was noted to be equivalent (Figure 1).

CONCLUSIONS: Ibuprofen is a useful medication in the setting of surgery with multiple beneficial effects. This meta-analysis represents a small set of high quality studies that suggests ibuprofen provides equivalent pain control to narcotics. Importantly, ibuprofen was not associated with an increased risk of bleeding. Further large studies will be necessary to elucidate this issue further, but ibuprofen is likely a safe postoperative analgesic in patients undergoing common plastic surgery soft tissue procedures.

REFERENCES:

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FIGURE LEGEND:

Figure 1. Forest plot representing pooled effect of ibuprofen versus control on incidence of bleeding events. Each square represents the effect size for a particular study, with the size of the square proportional to the study size. Horizontal lines represent 95 percent confidence intervals. A random effects model was used for all analyses. Diamonds represent pooled data for each subgroup, and the overall effect size. M-H, Mantel-Haenszel; SD, standard deviation.

Incidence of Bleeding: Ibuprofen versus All Controls

Study or Subgroup	Ibuprofen Events	Ibuprofen Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
Chen et al., 2009	0	18	0	17		Not estimable
Mitchell et al., 2012	2	71	3	70	72.9%	0.66 [0.11, 3.81]
Mixter et al., 1998	0	29	0	30		Not estimable
Sniezek et al., 2011	0	68	5	140	27.1%	0.19 [0.01, 3.31]
Total (95% CI)		**186**		**257**	**100.0%**	**0.47 [0.10, 2.09]**
Total events	2		8			

Heterogeneity: Tau² = 0.00; Chi² = 0.58, df = 1 (P = 0.45); I² = 0%
Test for overall effect: Z = 1.00 (P = 0.32)