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Selective vs Nonselective Nonsteroidal Anti-inflammatory Drugs and Anastomotic Leakage After Colorectal Surgery-Reply

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In Reply

We are pleased that our study¹ has generated debate and discussion regarding the perioperative use of nonsteroidal anti-inflammatory drugs (NSAIDs) among patients undergoing gastrointestinal surgery, and we sincerely thank the several teams of physicians and surgeons who have taken the time to respond. First, we would like to reiterate that we do not suggest that our data firmly establish causality between perioperative use of NSAIDs and increased rates of anastomotic leak. We believe that our data are strong enough to warrant increased caution when deciding whether or not to use NSAIDs for patients undergoing emergency colorectal procedures. Nor do we dispute the possible benefits of NSAID use in enhanced recovery protocols for their opioid-sparing potential. It is important to note that our data and conclusions are focused on patients undergoing nonelective colorectal procedures, and thus the authors who defend the use of NSAIDs in recovery protocols may be reading too much into our conclusions and taking them out of context. We agree with all the authors who responded that further studies are warranted and needed to address this question and to analyze the type of drug used, the dosage, and the duration of therapy. In our study,¹ we simply urge caution.

Regarding the selectivity of various NSAIDs, we agree with those authors who commented that all NSAIDs are selective for either cyclooxygenase 1 (COX1) or COX2 to varying degrees at different doses. Both ketorolac tromethamine and ibuprofen are relatively nonselective at the doses typically given, with only a mildly increased inhibition of COX1 vs COX2, and we consider them nonselective. Despite the lack of specific drug information in the Surgical Care and Outcomes Assessment Program (SCOAP) registry, we are quite confident that ketorolac and/or ibuprofen represent the large majority of NSAIDs used. We can be this confident because of the collaborative nature of the SCOAP sites and because of our ability to directly query surgeons at participating sites about formularies and practice patterns.

As to our initial inclusion of patients undergoing bariatric or elective colorectal procedures, this is a function of our initial interest in the potential effects of NSAIDs on gastrointestinal anastomotic healing. Not including data from these 2 patient populations in our study¹ could

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be construed as disingenuous because it would be different from the original research question that we set out to answer, and, obviously, the data from these 2 patient populations yield different results from analysis of the patients undergoing nonelective colorectal surgery.

Finally, an error regarding the sample size referenced in the title of our Table 3 occurred during the proofing process. The sample size of the cohort of patients undergoing nonelective colorectal procedures was 1621 patients, not 9624. This error will be corrected online.

References

1. Hakkarainen TW, Steele SR, Bastaworous A, et al. Nonsteroidal anti-inflammatory drugs and the risk for anastomotic failure: a report from Washington State's Surgical Care and Outcomes Assessment Program (SCOAP). *JAMA Surg.* 2015; 150(3):223–228. [PubMed: 25607250]