Reviewer's report

Title: Variation in postoperative analgesic use after colorectal surgery: a prospective database study

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Reviewer: Girish Joshi

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In this retrospective analysis of database, the investigators assessed the use of NSAIDs, specifically ibuprofen and diclofenac, in patients undergoing colorectal surgery. Not surprisingly, they found a significant variation in NSAID use between different departments. Also, the authors state that there was lack of compliance with local guidelines.

The information provided by this study is interesting, but not novel. Overall, this study has limited clinical relevance. There is enough evidence that physicians do not follow published guidelines as well as the use of non-opioids including NSAIDs is inadequate despite good evidence of their efficacy. Please see the detailed comments below.

It would be of greater interest if the authors were able to survey the physicians and assess the reasons for noncompliance with guidelines. Is it lack of knowledge or concerns of potential side effects, even if they are unfounded? Just providing the information regarding variation is not useful clinically.

Specific Comments

TITLE: Please modify the title to “Variation in postoperative non-steroidal anti-inflammatory use after colorectal surgery: a database analysis”. Please note that this is not a prospective study and including the word prospective in the title is misleading. Also, instead of using analgesic, it is better to use specific term – that is NSAIDs.

ABSTRACT: In the results section, please provide the number of patients included in the analysis as well as the values for the variables. In its present state, the results section provides no results, but only conclusions. In the conclusions section, please briefly include other potential reasons for the variation that are mentioned in the discussion section of the paper – lack of compliance to guidelines, concerns of potential side effects etc.

INTRODUCTION SECTION: What was the hypothesis of this study?

METHODS SECTION: Please provide us with the guidelines from the 6 departments. It is necessary for us to know if there was any similarity in guidelines from these places. The amount of space used up in the discussion section on lack of compliance with guidelines requires this information.
What were the “other NASIDs” that were not included in the analysis?

The doses of ibuprofen and diclofenac appear to be inappropriate. Recommended ibuprofen dose is 800 mg three times a day NOT 800 mg/day and diclofenac should be 50 mg twice a day not 50 mg/day.

Please change p.n. to p.r.n. throughout the document.

RESULTS SECTION:
Tables 2 and 3 should include the number of patients from each department. We must know the spread of patients for completion. Figures 3 and 4 should be deleted and the information should be included in the tables 2 and 3. There is no point separating this information.

DISCUSSION SECTION: This section needs to be focused and address the findings from this study rather than discuss irrelevant issues. As you will see from the statements below, the discussion section is confusing and contradictory at times. Some major inappropriate statements are made in this section such as stating that diclofenac is a COX-2 selective drug. Obviously, the discussion that follows this statement is completely flawed, as diclofenac is a non-specific traditional NSAID not a COX-2 selective drug.

Also, the authors are confusing the data on efficacy of NSAIDs with concerns of potential side effects. There is no question that NSAIDs have excellent analgesic efficacy and reduce opioid requirements. However, some people choose not to use these drugs due to their concerns of potential side effects such as cardiovascular and renal effects or the effects on anastomotic leaks. Obviously, the procedure specific guidelines recommend the use of these drugs due to their efficacy and clearly state that potential adverse effects should be considered. Thus, several statements made by the authors are misleading. Unfortunately, the authors are using this study with limited clinical relevance to criticize the published guidelines.

Obviously, the only finding from this study is that there is significant variation in the use of NSAIDs between different departments in Eastern Denmark. It is good to discuss the possible reasons for these variations, which could include inadequate guidelines, lack of compliance with guidelines (then provide possible reasons for lack of compliance such as concerns of potential side effects). However, the authors have speculated too much and over interpreted the minimal information we have from this study.

The fact that the authors have spent significant amount of space on conflicting guidelines, it is necessary that they provide us with the information on these guidelines from the various departments.

We need to know if all the departments propose use of NSAIDs? What were doses of NSAIDs and their duration of use recommended in these guidelines? This is critical given that the authors have criticized recently published guidelines.
I am concerned that the authors have used specific references to make their point regarding the adverse effects of NSAIDs, although several Cochrane reviews and other reviews have been unable to find significant side effects with NSAIDs when used for a few days in the postoperative period. The authors have confused concerns with long-term use of these drugs with short-term use. Unfortunately, a biased discussion, and I do not understand how this extensive discussion is relevant to this study.

The authors have made some contradictory statements, which cast some doubts on their discussion. For example, “Even though each department in the study had local guidelines…” is contradictory to the statement “In Denmark, pre-specified analgesic regimens may be available…” Thus, my question is are they available or are they “may be” available.

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

My conflict of interest is that I am a member of the PROSPECT Group that has been quoted by the authors at several points.