Author's response to reviews

Title: Overuse of Non-Prescription Analgesics by Dental Clinic Patients

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Author's response to reviews:

We thank the reviewers for their comments. Our responses are bolded below. Also- during our analysis to address the reviewer’s comments, we realized that one acetaminophen overuse case was miscoded and was not actually overuse. This has been corrected in the manuscript.

Response to reviewers

Title: Overuse of Non-Prescription Analgesics by Dental Clinic Patients

Version: 2 Date: 8 August 2008

Reviewer: Elliot V Hersh

Reviewer's report:

This is an important topic but some additional information needs to be provided prior to publication.

1) Introduction, page 4, first line: Insert the word "emergency" prior to care.
   (minor essential).
   We have made the suggested change.

2) Introduction, page 4, second paragraph: It’s not just NSAID dose that increases relative risk but it is also duration of use as far as GI bleeding risk and certainly probably other toxicities (renal). You need to say something about this. See for example Lewis JD et al: Risk of Serious Upper Gastrointestinal Toxicity with Over-The-Counter Nonaspirin Nonsteroidal Anti-inflammatory Drugs.
We have added the following sentence:

“The risk is higher with prolonged use, but one study has reported patients starting naproxen are at higher risk than those starting ibuprofen and that that difference is detectable within 14 days. This suggests that even a few days of use results in increased potential for injury.”

3) You need to say something about exactly what OTC dosing guidelines of analgesic means (compared to prescription dosing). Its bad enough that many patients don't understand this concept but unfortunately most clinicians in various specialties don't either. Put together a table of what constitutes OTC dosing for the various agents you describe. For example see Hersh E.V., Moore P.A. and Ross GA. Over-the-counter analgesics and antipyretics: a critical assessment. Clin. Ther.22:500-548, 2000. (major compulsory)

We have added the information on non-prescription and prescription dosing in Table 1.

4) You really need a table in this paper illustrating the dosing patterns of the 14 subjects that were using supratherapeutic doses of the various agents. In other words the table should include which drugs they were taking, how much of each agent they were taking a day, and were they unwittingly taking two product with the same components.

We have added the information on dosing patterns for overdose patients in Table 2.

In the results we have already noted that 3 subjects taking acetaminophen/opioid combination products are also taking non prescription acetaminophen.

Also did any of these individuals that you surveyed show signs of overt toxicity. You need to state this in your results (whether there were any or none) because if there were none it's still an indication of the relative safety of these agents at least.(Major compulsory revision)

Our survey did not assess for signs of toxicity, overt or otherwise. We have added this as a limitation and noted it in the methods.
5) Discussion section, page 10, 2nd paragraph: Again it's important to indicate by how much these subjects were exceeding recommended OTC doses. (minor essential revision).

We have added the information on dosing patterns for overdose patients in Table 2.

6) And in the 3rd paragraph of the discussion, remember the incidence and severity of adverse effects is related to both dose AND DURATION of therapy. (minor essential).

We have added the following sentence to our limitations

“Our study did not measure the duration of use, which can also alter the risk for toxicity.”

7) Discussion - I think you need to comment that patients with moderate to severe dental pain of nonsurgical origin typically from dental caries that has invaded the pulp chamber of the tooth not only self medicate with OTC analgesics but also get their hands on (by whatever means - either have left overs from a previous prescription, get it from an emergency room or get it from a friend) prescription analgesics more often than not acetaminophen/narcotic combination drugs. In fact generic acetaminophen plus hydrocodone is the most frequently prescribed medication (not just pain reliever but compared to everything) in the United States. And when these patients have unremitting pain they often over-medicate with these also (sometimes not being aware that the drug doesn't just contain a narcotic) and as you stated sometimes combine it with OTC acetaminophen. You can go to the top 300 prescribed drug web site to get the 2007 numbers and/or look at Hersh E.V., Pinto A, Moore P.A. Adverse drug interactions involving common prescription and over-the-counter analgesics. Clin. Ther 29[Theme Issue]:2477-2497, 2007 which refers to the 2006 rankings (4 products containing acetaminophen were in the top 200 prescribed drugs at this
time). (essential minor revision).

We have added the following paragraph to the discussion:

“The reason for overuse cannot be determined from the present study design. We suspect it is multi-factorial. One issue is the inadequate use of preventative dental care that allows caries to progress to the point where they invade the pulp and cause pain. This may be due to cost, lack of available provider or patient apathy. Regardless, these issues are beyond the scope of our research. Once pain occurs, patients may become desperate and will resort to extreme measures to obtain relief. One way patients seek relief is by taking prescription medications (obtained from old prescriptions, friends or purchased on the black market). This may have several health implications. We did not attempt to quantify acetaminophen use in prescription products, but accidental acetaminophen overdose due to overuse of acetaminophen/opioid combination products is well described. Simultaneous ingestion of prescription and nonprescription acetaminophen products is another cause of inadvertent overdose. We identified several cases of simultaneous prescription and non-prescription use, suggesting that this is a fairly common event. Further work is required to better characterize this issue.”

8) Discussion, Top of page 11, first sentence: Again it’s not just the patient that needs further education but a number of clinicians in various specialties. (essential minor).

While we agree that it is likely that many clinicians do not know how to use non-prescription analgesics appropriately, we did not assess the knowledge, recommendations or use patterns of clinicians about appropriate dosing. Therefore it seems inappropriate to comment on the need for educating clinicians.

9) Discussion, you need to elaborate more as far as improved patient education being needed. I actually think the current labeling of OTC's in the United States is pretty good and if anything the warnings of exceeding recommended doses or combining the drugs with alcohol are currently on the severe side. Again the problem is that we have a whole group of patients - not just in dental medicine but in need of all sorts of health interventions - because of their socioeconomic status make a habit of only showing up at emergency clinics or emergency rooms. Unfortunately with regards to preventative dental care in the United
States, it's unfortunately a luxury for a segment of the population and they wait until they are "at the end of their rope" typically with unremitting pain to finally get treatment - and they've typically been self medicating for at least several days with variable and temporary success. I know this because I'm currently performing a double-blind, randomized placebo-controlled clinical trial on this population of OTC topical toothache medications and we do record any concommitant meds they've been taking for the previous 72 hours. (essential minor)

We agree that analgesic overuse is likely a symptom of access to health care and that improving the system would decrease the drive for patients to misuse non-prescription products. However, without assessing the patient's access to health care, commenting on the limited access to preventative care would be better addressed in an editorial article rather than a research report.

Reviewer: Peter L Jacobsen
Reviewer's report:
i have reviewed the article, biomedcentral.com/imedia/9916148842074731_article.pdf and i would suggest acceptance, with three suggested edits/concerns.
the authors talk about supratherapeutic dose, but never provide a definition of the maximum therapeutic dose. i think all the drugs listed should have the authors definition of the max therapeutic dose included. this paper will be read all over the world and the dose may vary in different locations. besides they note that patients don't know the max dose, i am willing to bet most dentists don't know the max daily dose for ibuprofen, acetaminophen or aspirin. tables would be useful to summarize the data, list the max doses, and, as an educational benefit to the readers they may also elect to make a table of the common toxicities associated with overdose of the different drugs.

We have added the information on non-prescription and prescription dosing in Table 1. Listing the toxicities in detail seems beyond the scope of this paper but we would add them if the editors recommend it.

lastly, they suggest at end of page 11 beginning of page 12 that the dentist
should ascertain the OTC pain drugs taken by the patient and if it is supratherapeutic, to council them on overdose and evaluate for problems. That seems like good advice, but it also suggests/sets a standard of care that is beyond what is usually done in most offices. Based on such a recommendation in a paper such as this, the risk of liability increases for dentists, since a lawyer could use such published articles to claim a new standard of care. The authors may want to rephrase their suggests to be more consistent with what is now standard, at the same time suggesting that improvements in evaluating patient risks should be considered.

We have modified this to make it a suggestion rather than suggesting it is a standard of care.