Reviewer’s report

Title: Short-term mortality after perforated or bleeding peptic ulcer among elderly patients. A population-based cohort study

Version: Date: 29 November 2006

Reviewer: Monique Leerdam van

Reviewer’s report:

General
The authors present a retrospective population based cohort study evaluating age, morbidity and mortality among patients with a perforated or bleeding peptic ulcer. The study includes a very large cohort of complicated peptic ulcer patients during an 14-year period in three counties. Mortality is still very high in this patient group, stressing the importance of prevention of peptic ulcer complications
The article is well written.

My main concern is the accuracy of the registration of the actual co-morbidity. Discharge diagnosis ICD codes for post-hospitalizations were used. We are not informed whether patients were already admitted into the hospital because of co-morbidity. What was the actual reason for admission? Were patients discharge with several ICD codes? Were most death ulcer complication related? Could death have been prevented? (see also Sandel et al). Most epidemiological studies show that mortality is associated with age, co-morbidity/ in-hospital bleeding and with rebleeding/ surgery. What is the explanation for the different findings in this study?

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Introduction:
1. Page 3. The authors state that there are virtually no data on influence of co-morbidity and age-related mortality. It is good to mention that there are several epidemiological reports evaluating co-morbidity/ age and mortality in PUB using multivariate analyses. Furthermore Sandel et al (Am J GE 2000: 95: 2357) showed that the majority of deaths in patients with PUB could not have been prevented, but were due to already existing co-morbidity. This article should be mentioned.

Material and Methods:
1. Page 4/5. Discharge registries were used to identify patients with perforated or bleeding peptic ulcer. Are you also informed about the diagnosis of admission. Were patients admitted for other health problems and was in-hospital bleeding included? How many patients had in-hospital peptic ulcer complication?
2. Page 5 Are you also informed about the actual co-morbidity during admission and discharge? Was this co-morbidity also taken into account, or only co-morbidity from previous hospitalizations?
3. Can you give an example for the 3 levels of co-morbidity of the Charlson index score?

Results
1. Page 7. A large number of patients with a peptic ulcer perforation have been included. How large is the total population served by the hospitals? Did you see a time-trend in the number of perforations?
2. Page 7/8. How many patients were in-hospital patients at the time of peptic ulcer bleeding or perforation?
2. Page 7. How many patients used a PPI together with the NSAID/ aspirin?
3. Page 8. The authors state that the MMR is higher among elderly patients compared with younger patients regardless of level of co-morbidity (table 3). Was the actual co-morbidity during the admission also taken into account or only previous discharge diagnosis? If so, how were you informed of the severity of the co-morbidity before and after the peptic ulcer complications? What was the OR for mortality and co-morbidity in the multivariate analyses corrected for age?
4. The authors showed that mortality was related with higher age, but not with co-morbidity. Does this mean that mortality was caused directly by the peptic ulcer complication? Can you say something about the mortality that could not have been prevented because of the co-morbidity?
5. From the data available from epidemiological data for peptic ulcer bleeding it is obvious that mortality is far higher in patients with rebleeding and with surgery. Do you have data regarding risk factors for mortality despite age/ co-morbidity? How were patients treated?


Discussion:
1. Page 9/10. How do you explain the different result found in your study compared to several epidemiological data showing that both increased age and co-morbidity / in-hospital bleeding are major risk factors for mortality? If only age is explaining the mortality and not co-morbidity, can you speculate about the reason for the high mortality rate? Could mortality have been prevented?

2. Can you say something about prevention/ PPI use/ NSAID use?

Conclusions:
1. It is not clear at the moment how the actual co-morbidity is defined. Depending on the answers on the question mentioned above the conclusion should be altered.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Reference list;
1. There are several reference mentioned twice. This should be checked.

Table 2
1. Can you give the OR for co-morbidity/ gender/ ulcer related drugs and mortality? (for example in the result section)

Table 3
1. Please add the legend of the * used in the 6th column.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests