Reviewer's report

Title: Failure of available scoring systems to predict ongoing infection in patients with abdominal sepsis: a prospective outcome study

Version: 2  Date: 18 August 2011

Reviewer: Magnus Kaffarnik

Reviewer's report:

Dear Dr. Kiewiet,

Statistically brilliant analyzed data.

Major Compulsory Revisions

It is not a prospective study, but a retrospective trial: The RELAP-trial included the APACHE II score, MPI and MODS. SAPS II and SOFA scores were not mentioned in this trial. These data seems to be collected retrospectively. Also the replacement of missing values (page 7) with statistical methods speaks for a retrospective collection of data. One of the reasons of a prospective Trial is to avoid missing values.

The group "patients with no relaparotomy but dead <14 days" is unclear. Did they all have an ongoing infection needing relaparotomy? They may die because of other reasons than abdominal infection. It would be interesting to know about the reasons for death.

The group "no relaparotomy but percutaneous drainage with drains left in situ" seems to be matched in the group "ongoing infection". Why should they get a drainage without infection?

As the authors mentioned, all scores, except the MPI, have been developed to predict death for ICU (page 10 ff). Therefore the failure of these scores in predicting the need for relaparotomy is not unexpected.

The sequential scores (SOFA, SAPS II and MODS) are measured only on day 1+2 after initial operation and missed the period between day 3-7. 61 patients of the RELAP trial had 2 and more relaparotomies. It is likely that for many of these patients the period of operations was >7 days. It is reasonable to extend the time frame for measuring the sequential score (e. g. day 4 + 6). It is also interesting to analyze these scores on later days in patients without relaparotomy, but died <14 days (page 11; For the non-operated....).

It would be expected that later sequential scores are lower in patients without relaparotomy and surviving 14 days than in patients with relaparotomy between days 3-7. The statistically difference might be significant and the score might predict need for relaparotomy.

Discretionary Revisions
The overall timeframe is short. The experience shows that critically ill abdominal surgery patients die after weeks because of ongoing tertiary peritonitis. It would be interesting to know about the 90-day-mortality rate and the relationship between dead on day 15-90 and ongoing peritonitis.

There are some interesting recent papers that could be discussed (e.g.):
Chromik et al. (2009) Identification of patients at risk for development of tertiary peritonitis on a surgical intensive care unit.
Zügel et al. (2011) Predictive relevance of clinical scores and inflammatory parameters in secondary peritonitis.
Egberts et al. (2011) Preoperative risk evaluation of postoperative morbidity in IBD patients--impact of the POSSUM score.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests'