Reviewer's report

Title: Should C-reactive protein concentration at ICU discharge be used as a prognostic marker?

Version: 1 Date: 13 August 2010

Reviewer: KIERZEK Gérald

Reviewer's report:

Summary
- The study aims to evaluate the ability of CRP concentrations at ICU discharge as a predictor for in-hospital mortality; this is within the scope of the Journal (critical care). The design is monocentric and is a prospective study: the comparison of clinical and biological predictors among survivors (127 patients)/non-survivors (29 patients). The main conclusion of the authors is that CRP is not a good predictor of in-hospital mortality (no association exists between CRP levels and prognosis).

- The article is short and the question posed by the authors well defined; the bibliography could be more up-to-date (14 references: 4/14 references < 5 years) and longer (14 references).

- The methods are appropriate but not enough described. Discussion and conclusions have to be better balanced and the authors should clearly acknowledge their previous published work.

1/ Major Compulsory Revisions
a. General criticisms (descending order of importance)
- From a clinical point of view, the topic is important but remains controversial. The authors come to conclusion that is NOT consistent with the literature previously published. The method of evaluation is not strong enough to conclude so peremptorily: 8-bed ICU, 29 non-survivors,.... However, the paper offers some originality because the study took place in an ICU with a higher post-ICU mortality rate and the subgroup analysis with previous documented infection patients is interesting.

- The authors have already published a brief report (Intensive Care Med. 2009) about a very similar study during a 14-month period as well (CRP and ICU mortality –and not post-ICU mortality). Is this paper related to the same study period? (this is not mentioned in the article).

b. Detailed criticisms
Patients and methods:
- Add references to the previously published study (ICM 2009); time period to be mentioned (year; months). Is this study about the same cohort (survivors) or a different period and a different cohort?
- No information are mentioned about the post-ICU settings (ward ? post ICU dedicated unit ? length of follow-up ?)
- We don’t exactly know how the follow-up of patients is organized ? All deaths after ICU discharge were identified during the same hospitalization ? how were they identified and recorded ? What about patients with a plan to limit life support (were they included ? excluded ?)

Results :
- The results have to be described with more detail (comprehensive): delay of death after discharge, length of stay (ICU, hospital,…); in addition, unit of measurement (and values…) have to be confirmed (given in mg/dL in the paper).
- L5 : « clinical and demographic characteristics….the two groups » : there are no differences between the 2 groups regarding to the demographic characteristics. However, scores are different !! The text contradicts line 19 : « higher levels… »
- ROC curves would be welcome (figure)
- Subgroup Medical/Surgical :51 patients have a surgical main admission diagnosis … ? not consistent with table 1 (surgical=51). Typo or does it mean that surgical= surgical + obst + trauma (Table 1) : Needs clarification.

Discussion
- The 2 key points of the study which could explain differences with previous studies are : 1/ high post-ICU mortality (>20% ; Ho et al e.g. 4%) and 2/ subgroup analysis for documented infection. The discussion part should be focused on these two points and reorganized for clearer understanding. Suggestions : Offer a rationale for considering CRP as a prognosis marker ; dexplain differences with Ho ’s study and subgroup analysis and then discuss the limitations.

2/ Minor Essential Revisions

Patients and methods :
- Add information about the study setting (specialties ? post-ICU settings (ward ? special unit ?)) and data collection (are CRP concentrations made routinely or made in addition ?)
- We have no information about discharge criteria ; these data are critical to be able to compare results with other studies.

Results :
- A flow chart would be a welcome addition to clarify.
- Please confirm that measurements are in mg/dL ???? What is the international unit of measurement for CRP : mg/L or mg/dL.
- Subgroup analysis documented infection : table 2 Total column to delete (confusing for the p value column : comparison is between Survivors/Non survivors)
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

No conflict of interests