Reviewer's report

Title: The usefulness of C-reactive protein and neutrophil-to-lymphocyte ratio for predicting the outcome in hospitalized patients with liver cirrhosis

Version: 1 Date: 31 July 2015

Reviewer: David G Watt

Reviewer's report:

The authors report the use of CRP and NLR to diagnose infections and predict outcomes in cirrhotic patients admitted to hospital. They include 184 patients and conclude that CRP was a significant indicator of infection and elevated NLR a poor predictor of 1 month survival.

Major Revision:

The question is defined well although it is well known that CRP is useful in helping predict those who will develop infection, methods appropriate, data sound, figures genuine there are a few major revisions that need to be addressed:

1. in the results section of abstract and manuscript the authors state the odds ratio for CRP and the presence of SIRS to be 1.017 yet a highly significant p value. I cant quite understand this, can they check the statistical methods?

2. The conclusions of the abstract state NLR is a poor predictor of 1 month survival in one sentence then in the next one state CRP and NLR are good predictors of outcomes? These 2 statements contradict each other.

3. They mention in the methods that cirrhosis was diagnosed on biopsy or on "obvious clinical, biochemical and imaging features". They should specifically mention what these were.

4. The study states that all the hospitalized patients were treated with empiric broad spectrum antibiotics at admission. Surely this is a confounder to the study? Could patients with mild SIRS have been treated and therefore their results did not trigger a rise in CRP? I dont understand how the study can be aiming to look at whether CRP and NLR can improve diagnostic accuracy of infection when everyone gets antibiotics anyway, does it matter what the CRP levels were then? They are being treated at any rate, I really struggled with this concept

5. In discussion the authors mention cirrhosis causes low WBC counts but alcoholic cirrhosis patients can have high WBC even without infection. Therefore how can NLR have a role? The neutrophil count can be high or low without infection on board and therefore in my opinion in cannot be used to diagnose infection as other parameters will alter its result. This would appear to be a major flaw in this study
6. Did the authors look at the role of neutrophils on their own? Recent reports have suggested that the majority of the prognostic component of the NLR come from the neutrophil count itself.

7. Again I am confused as to the statements in the conclusion. The authors state patients with elevated CRP and NLR should be monitored carefully for presence of infection and considered for prompt antibiotic therapy - but are they not already on antibiotics and therefore being treated regardless?

**Level of interest:** An article of limited interest

**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