Reviewer’s report

Title: Preoperative risk stratification models fail to predict hospital cost of cardiac surgery patients

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Reviewer: Nizar N Yonan

Reviewer’s report:

Major compulsory revision:
The study by Akmal et al on use of risk stratification as a predictor of cost after cardiac surgery is well written and very interesting and informative, most studies contadict that view and tend to suggest there is a positive correlation between risk scores and ICU stay, hospital stay and cost. The group have published similar work previuosly (Z Kardiol 2005)

Although the manuscript is very well written and argued, I have few comments that need to be addressed before the study is publishable.

1. Data from this unit in Germany have showed very prolonged ICU and hospital stay when compared with other studies and with data from our unit. Mean ICU and hospital stay form CABG was 2.5 and 15.5 days respectively and the figures are even higher when valves are included. This suggests that the practice at that unit is at odds with current practice and as the study is looking at cost, this will make correlation with risk scores almost invalid. The desire to discharge patients may be influenced by other factors for example the financial package for the particular operation in that country.

2. I think the authors made a good point in in suggesting that most published studies that have showed positive relation between risk score and cost have used unicariate linear regression with significant p value. in most of these studies the Spearman’s correlation is between 0.4 to 0.5 is considered significant, the latest study in 2011 from John Hopkins suggested the Thoracic surgeon risk score does predict hospital charges with p=0.01 and Spearman correlation of 0.51. The point the authors make with regards to correlation need to be around 0.8 to be significant is valid and I would like to ask for a statistical review of the manuscript regarding this point.

Regards

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

No financial interests at all