Reviewer’s report

Title: suPAR as a prognostic biomarker in sepsis

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Reviewer: Jesper Eugen-Olsen

Reviewer’s report:

The mini-review, suPAR as a prognostic marker in sepsis, by Donadello et al is well written and the first to review data on suPAR in sepsis.

In the abstract I would make it clearer that the paper address the diagnostic and prognostic value. After the sentence of low value of suPAR compared to CRP and PCT, the next sentence could start with: On the other hand, suPAR levels have been …..or In contrast or something like that.

I miss a section or discussion on advantages and disadvantages of suPAR compared to the more commonly used biomarkers in sepsis, CRP and PCT. A good diagnostic marker is likely to have low value as a prognostic marker and visa versa. E.g. CRP and PCT (which I consider good diagnostic markers for bacterial infections). The fact that they are good markers for bacterial infection make them less suited for prognostic use. E.g. a viral meningitis patient with high risk of mortality may have low CRP and PCT despite high risk of mortality. On the other hand, suPAR (which I consider a good prognostic marker), seems to be a very poor diagnostic marker. I would therefore use less review time on suPAR as a diagnostic marker in sepsis and use the freed space to discuss suPAR in contrast to CRP and PCT with regard to stability (both in vivo and in vitro), kinetics (acute vs non-acute e.g. injection with LPS into healthy volunteers hardly affect suPAR (Ostrowski et al), source of production, and last, but not least, the combined knowledge of knowing the values of all 3 markers.

I suggest to remove the Comment in table 1 to the paper of Kofoed et al in which suPAR had a diagnostic AUC of 0.50 (!), and the comment states the “Possible use in combination with other biomarkers in the diagnosis of sepsis. It is true that combination of biomarkers may aid in diagnosing, but suPAR with an AUC of 0.50 adds no value.

In the middle of the section termed suPAR as a diagnostic marker of sepsis (table 1) it is stated that However, because of the relatively low prognostic sensitivity and specificity, the routine…..Do the authors not mean: However, because of the relatively low diagnostic sensitivity and specificity

I find it a bit premature to state that currently available data do not support the use of sequential suPAR measurements. There are simply not enough studies that have addressed the issue to justify this statement.
Quality of written English: Acceptable

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

Declaration of competing interests:

I would like to disclose that I am the inventor of the suPARnostic assay. Also, I am a shareholder and boardmember of the company, ViroGates, that produce the suPARnostic assay