Reviewer’s report

**Title:** Indole 3-acetic acid, indoxyl sulfate and paracresyl-sulfate do not influence anemia parameters in hemodialysis patients.

**Version:** 0 **Date:** 11 Jun 2017

**Reviewer:** Andrea Angioi

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Bataille et al proposed for publication a cohort study in order to assess if plasmatic concentrations of indole 3-acetic acid, indoxyl sulfate and paracresyl-sulfate are clinically implicated in end-stage renal disease anemia, in particular serum hemoglobin and ESA. The selected cohort was based on hemodialysis patients. The aim of the study is of sure interest for the nephrologist. Methods appear mostly correct, although I feel the major issue of the paper are the selection criteria of the cohort itself (see below). Results are coherent with the selected cohort and the selection criteria applied by the investigators; data are soundly. Discussion and conclusions are well balanced. I have only few major issues to report:

1) As we extensively know, data shows that anemia and ESA weekly dose are highly influenced by TSAT (%), Ferritin (ng/mL), Albumin (g/L), and CRP (p<0.05). Thus, it is pretty obvious that these parameters act as confounders. I would suggest the authors to separate these patients from analysis in order to obtain clearly answer to the key question "Are indole 3-acetic acid, indoxyl sulfate and paracresyl-sulfate levels realated with low levels of hemoglobin, in absence of iron deficiency and inflammation?". Not casually, anemic patients have higher levels of CRP (thus may be defined "inflammed" or "infected"), patients with ESA and anemia have lower levels of TSAT, although higher doses of ESA were used, etc. This bias, if corrected, may result in very interesting results, such a statistical significance of one of the considered target variables.

2) For the same reasons above, the ongoing intake of iron may completely affect the results.

3) There are some patients that do not respect the inclusion criteria: in fact, in table 3, patients with hb <10 g/dl that are not taking ESAs have hemoglobin levels of 9.6 ±0.6, thus there are patients with hb >10 g/dl! Please verify.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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