Reviewer's report

Title: transcriptomic analysis reveals new aspects of the chronic kidney disease-related immune dysfunction

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Reviewer: Wenjun Ju

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Major Compulsory Revisions:

1. Dr. Zaza and colleagues identified a set of differentially expressed genes between CKD patients in conservative (CKD) from those in HD treatment and suggested that these may be the biological basis of the CKD-related immune dysfunction. However, the manuscript did not describe clearly what is the difference of the CKD related immune dysfunction between these two groups of patients. In another word, what clinical readout does this molecular signature relate to? Based on the clinical characteristics and the lymphocyte subset count distribution, there seem to be no significant difference. If a molecular signature does not correlate with clinical readout, it is difficult to convince people that this signature is important. Therefore it would be helpful if the authors can link the gene expression with a readout of “immune dysfunction”, not just with “conservative CKD” or “HD”, in order for readers to better understand the significance of this manuscript.

In case there is none to link to, the title may need to be modified to accurately convey the finding.

2. Please state the limitations of the study.

Minor Essential Revisions

1. Figure 1A and B show that in the training dataset, expression of 275 gene probe sets can separate patients into 2 distinct groups. However, this is nothing more than expected since these genes were identified in this exact cohort. What would be useful is to use the expression value of these 275 gene probe sets from testing cohort to perform the clustering or PCA analysis.

2. Please describe microarray data deposit plan.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

No conflict of interest.