Reviewer's report

Title: Integrative model of leukocyte genomics and organ dysfunction in heart failure patients requiring mechanical circulatory support: A prospective observational study

Version: 0 Date: 10 Feb 2017

Reviewer: Manuela Cabiati

Reviewer's report:

Dr Wisniewski et co-authors in the paper submitted to BMC - Medical Genomics (titled: Integrative model of leukocyte genomics and organ dysfunction in heart failure patients requiring mechanical circulatory support: A prospective observational study) have worked to apply whole-genome mRNA gene expression profiling in circulating peripheral blood mononuclear cells of MCS patients and to reconstruct the temporal dynamics in response to surgery during the critical early hazard period, they have collected samples from the same patients at baseline and during the early and most critical period of the MCS therapy.

Dr. Deng, in which group Dr. Wisniewski works, is involved since many years in heart transplant, mechanical circulatory support and the management of advanced heart failure providing several important discoveries and improvement of life-quality of his patients.

In this particular context the study has been well conducted, a lot of results are reported in a quite clear manner, graphs and images are presented and all experiments are of great value.

Minor concerns:

Methods session "Sample processing - Sample collection and RNA isolation"

I am somewhat unclear on how they processed their samples. The authors should better explain the extraction method used.

Were leukocytes isolated from the plasma/serum samples prior to extracting RNA? How is the degree of RNA purity and integrity?

The authors should better explain the principles of the kit used (Rneasy QIAamp RNA Blood Mini Kit, specific for purification of cellular RNA from fresh whole blood, I suppose) for RNA extraction and if they have quantified the percentage of leukocytes extracted What specific cells do the authors think are the most involved in the process studied?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

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?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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