Reviewer’s report

Title: Functional capacity of Natural Killer cells in HTLV-1 associated myelopathy/tropical spastic paraparesis (HAM/TSP) patients

Version: 0 Date: 09 Aug 2018

Reviewer: Rahul Vijay

Reviewer's report:

In the manuscript entitled "Functional capacity of Natural Killer cells in HTLV-1 associated myelopathy/tropical spastic paraparesis (HAM/TSP) patients" the authors in an attempt to identify any potential reason for the higher proviral load in symptomatic patients, show that NK cells from HAM/TSP patients express lower levels of NKp30 compared to AS or control subjects. They go on to show that NK cells from HAM/TSP although having higher basal levels of cytotoxic markers fail to upregulate these molecules upon stimulation. Although correlative they speculate that such differences in the response following stimulation might be the result of these cells expressing low levels of the activating receptor NKp30.

It is quite obvious that a lot more work has to be done to conclusively show that this is causal than just correlative. While the reviewer do appreciate the how difficult it would be to do such studies with human samples, it would add to the story if the authors could further alter the level of NKp30 using siRNA mediated depletion or lentiviral overexpression strategies to further ask if it changes the cytotoxic capability of NK cells.

Also in the discussion the authors have touched upon the various isoforms of NKp30 including one with immunosuppressive functions. Given the fact that qRT-PCR remains an easy technique, it would be an additional piece of data if the authors could manage to quantify the relative expression of various isoforms expressed by NK in the groups they are studying. This might shed light into why in spite of higher basal expression of cytotoxic markers they fail to upregulate them upon stimulation.

Nevertheless, the study although incremental do shed some insights about NK cell functionality and the marker(s) that might influence it.

Minor comments:

1. Line 60: Please correct grammar "It has been reported a lower frequency of circulating NK cells in 61 patients with HAM/TSP compared with asymptomatic carriers(16-18)."
2. Line 71: Please correct grammar and sentence structure "to diagnose HAM/TSP(19). Were included twenty-two individuals with HAM/TSP. Twenty"

3. It will be ideal to include either isotype controls or FMO (fluorescence minus one) for the markers that are being used for phenotypic characterization of NK cells from subjects to be able to more accurately quantify their relative expression (Fig 1 and 2).

4. Representative flow plots for cytokine staining as well as cytotoxic molecule staining might come handy to appreciate the strength of the signal (Fig 3).

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.

No

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

Unable to assess

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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:

Needs some language corrections before being published

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