Reviewer's report

Title: Central Nervous System Antiretroviral Efficacy in HIV infection: A Qualitative and Quantitative Review and implications for future research

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Reviewer: Supriya Mahajan

Reviewer's report:

REVIEW: BMC Neurology
This is a very significant study because inhibition of HIV replication in the CNS is critical in treating patients who have HIV-associated neurocognitive disorders and treatment with ARV drugs is inadequate due to poor penetration of these drugs into the CNS allowing continued HIV replication. CNS targeted therapy is important for reducing CSF viral load as viral suppression in CSF results in greater neurocognitive improvement in patients with various stages of HIV-associated neurocognitive disorders.

The authors have used novel review strategies and appropriate statistical methods to evaluate the efficacy of neuroHAART. This strategy is important given the limited amount of studies in post HAART era that systematically evaluate the spectrum of HIV associated neurological disorders than range from asymptomatic neurocognitive impairment to mild and moderate neurocognitive impairment and finally HIV-associated dementia.

Appropriate scoring methods are used by the authors, that enabled them to identify qualitatively similar studies and analyse them further to provide some quantitative conclusions inspite of the methodological limitations, common to clinical Neuro-AIDS research that include clinical heterogeneity of the samples studied, unclear inclusion/exclusion criteria, lack of stringent neuropsychological evaluation.

The blind review strategy used by the authors allowed applying the same stringency for evaluation of all studies thereby allowing only studies with a higher quality, hence greater comparability to be assessed in the quantitative phase.

This reviewer concurs with the conclusion of the authors that this study suggests that a large randomized longitudinal trial that includes the entire spectrum of HAND is needed to determine the efficacy of neuroHAART.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests