Reviewer's report

Title: MHC2TA mRNA levels and human herpesvirus 6 in multiple sclerosis patients treated with interferon beta along two-year follow-up

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Reviewer: Bianca Weinstock-Guttman

Reviewer's report:

In this manuscript Dominguez-Mozo and colleagues evaluated the MHC2TA gene expression in a group of MS patients initiated on interferon therapy. The gene expression levels at baseline and changes during IFN therapy was correlated to clinical responsiveness to therapy as well as to the presence of HHV6 infection and MHC2TA genotype.

Comments:

1. The MHC2TA increase expression was significant only in the HHV6 negative patients or the significance for responders included the decrease in the HHV6 positive ones? Not clear how the analysis was performed: was the absolute level of expression used in analysis? (Correct also the abstract that provide wrong data (suggested that HHV6 positive have higher baseline levels))

2. Was the responsiveness to IFN therapy controlled based on clinical or also MRI findings?

3. From the fig C it appears that although a lower MHC2TA expression at baseline in the HHV6 positive patients, the trend for increase continued during the therapy. The decrease in the responsive group is difficult to explain.

4. Were the HHV6 patients responsive to therapy positive at baseline or become positive later? Were their levels higher than the non-responders?

5. Were the patients with C allele also the ones negative at baseline for HHV6 infection?

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.