Reviewer's report

Title: Long-term effects of cranial irradiation compared with intrathecal chemotherapy in treatment of childhood leukemia: A MEG study of power spectrum and correlated cognitive dysfunction

Version: 2 Date: 20 June 2012

Reviewer: Markus Butz

Reviewer's report:

The manuscript has significantly improved and overcome some major shortcomings. However, there are still some issues needing clarification.

Major Compulsory Revisions:

1.) I would not fully agree with the statement that “it is widely accepted that the different # subbands reflect different cognitive processes.” I would see this more as a matter of debate. However, it is perfectly fine that the authors subdivide the alpha band as long as they clearly reason this approach in the manuscript including citations as they did in their responses, and provided they do not take it for granted.

2.) The authors do not correct for multiple comparison using the Bonferroni method. Clearly, I would see the Bonferroni method as the common or even gold standard for this kind of analysis. Again, it is ok if the authors choose a different approach. However, they need to explicitly reason and justify this approach, as they did in the responses including citations. By doing this, it is left to the reader to decide whether or not this approach is adequate in this case, and to assess the validity of the current results, given that several frequency bands and scalp regions are examined in parallel.

3.) I still struggle with the abstract. As CRT is no longer used as a treatment, the authors might want to make this clear in the first sentence of the abstract. Currently, it appears as if both treatment options are still in place. For the results section of the abstract, I think it would help the comprehension of the readers if the authors provide the actual statistical values instead of using terms like “slightly increased, significantly decreased, clearly associated.”

Minor Essential Revisions

1.) The statement “Magnetic field frequencies ranging from 0.5 to 80 Hz were recorded.” is incorrect. The authors recorded between 0.25 and 125 Hz. This sentence should either be left out or corrected. (Sorry for missing this in my first review.)

Level of interest: An article of limited interest
Quality of written English: Acceptable

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