Reviewer's report

**Title:** Plasma 24S-hydroxycholesterol is increased in late onset Alzheimer's disease but not in vascular dementia

**Version:** 2  **Date:** 5 July 2011

**Reviewer:** ANNA RITA ATTI

**Reviewer's report:**

I red with interest the article by Zuliani and colleagues on plasma 24S-Hydrocholesterol concentration in dementia patients referring to a DH service for cognitive decline. The research question is clear, introduction is exhaustive, methods are accurate and results are sound. Nevertheless some concerns should be considered before possible publication.

Major revisions are:

- The authors use ANOVA (abstract, results, fourth line: “....in the whole sample, independent of possible confounders (ANOVA....)) to compare mean difference between groups taking into account possible confounders. ANCOVA could be an option.

- The possible impact of the findings, both in clinical practice and in research, deserves a comment.

- The definition of CIND cases and of controls needs to be further clarified.

Minor concerns include the followings:

- When did the study took place?
- How many patients were included? 160 (as reported in the abstract) or 115 (as reported in the Methods section)?
- Abstract forth/fifth line the word “in” is possibly missing
- Page 7 last paragraph “IS” is possibly a mistake.
- The paragraph on Plasma 24S-OH_Chol concentration measurement although informative is too long.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

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