Reviewer's report

**Title:** Co-morbidity and drug treatment in Alzheimer's disease. A cross sectional study of participants in the Dementia Study in Northern Norway.

**Version:** 1  **Date:** 17 June 2011

**Reviewer:** Graziano Onder

**Reviewer's report:**

The manuscript has relevant methodological limitations that should be addressed.

**Major revisions**

1. The recruitment of AD patients differs from the recruitment of non AD patients. It is possible that AD participants recruited by the GP do differ for characteristics (disease, treatment and comorbidity) from participants recruited by population based screening. This may have flawed study results.

2. Recruitment strategy and data collection procedure (who perform the assessment? Were they adequately trained and was training standardized?) is not adequately described. Also differences in data collection procedure may have influenced study results.

3. It seems that not only community dwelling, but also NH residents were recruited in the present study. NH residents have different characteristics and receive more careful clinical care compared with community dwelling older adults. For this reason a stratified analysis should be presented, or alternatively NH residents should be excluded.

4. Diagnosis of AD is not defined. Which criteria were used to define dementia?

5. Authors conclude that there is no difference in comorbidity between AD and non AD patients. This is not true. Prevalence of all diseases analyzed is higher in AD than non AD participants even if this difference reaches statistical significance only for COPD. In addition, I suggest to use a comorbidity index (i.e. number of diseases, Charlson index, etc.) to examine differences in comorbidity between study groups.

**Minor revisions**

6. Tables present age and gender adjusted data. This is not necessary for descriptive data (tables 1 and 2) and unadjusted data should be presented.

7. Table 3 presents 95% CI. It is not clear what these CI are referred to.

8. The study is not aimed at describing differences in BP between study groups and it is not clear why this datum is highlighted in the abstract and results section.

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

Statistical review: No, the manuscript does not need to be seen by a statistician.

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