Reviewer's report

**Title:** Does diagnosed comorbidity differ between elderly patients with and without dementia? Results from an analysis based on German insurance claims data.

**Version:** 1  
**Date:** 29 October 2013  
**Reviewer:** Giovanni Zuliani

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**MAJOR REVISION**

In this study Bauer et al. evaluated some relevant comorbid conditions in a large sample of elderly subjects with and without dementia, also taking into account gender and living environment conditions. To this aim they analyzed claims data from a large German Statutory Health Insurance (year 2006) including 9,139 individuals with a diagnosis of dementia, and 28,614 age- and gender-matched control subjects aged over 65 years of age. 30 comorbid conditions were defined based on ICD10-codes.

The major finding of the study was that individuals with dementia were more likely to be diagnosed with specific conditions including some dementia risk factors (e.g. Parkinson’s, stroke, diabetes, atherosclerosis) or some consequences (e.g. fluids/electrolyte disorders, insomnia, incontinence, pneumonia, fractures). On the contrary, they were less likely to be diagnosed with other conditions including vision/hearing problems, diseases of the musculoskeletal system, lipoprotein disorders, and hypertension. These results were confirmed (although with some differences) both in male and females separately considered, and in community-dwelling subjects.

The Authors concluded that in demented individuals particular conditions are likely to remain untreated or even undiagnosed. In addition, the data confirmed known evidence on well-known dementia risk factors and consequences.

**COMMENTS**

- Database analysis might have some intrinsic limitations, and this aspect has to be underlined by the Authors

- Analysis of the data is correct in my opinion

- The phenomenon of “under-diagnosis” in dementia patients has been already reported by some Authors; thus the conclusions are not really original

- I wonder whether the possible treatment of dyslipidemias in older patients with dementia would be useful; no evidences are available over 80 years of age
· Are the findings about severe vision or hearing loss in dementia an controls in line with current Literature? I would expect both these condition being associated with an increase in the prevalence of cognitive impairment.

· I suspect that the lower prevalence of hypertension in demented individuals might be related to another phenomenon other than under-diagnosis, that is the “normalization” of blood pressure with progression of dementia (see Skoog I et al. Lancet 1996).

· Muscular skeletal: the most important difference between the 2 groups is the lower prevalence of low back pain (59% vs 49%). How the Author read this data? Deficit of communication?

· No differences were found in cancer prevalence between demented and controls. This data do not agree with previous results from Roe CM et al. (Neurology 2010). Could the Authors make some comments on it?

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

Quality of written English: Acceptable

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

Declaration of competing interests: NO COMPETING INTEREST TO DECLARE