Reviewer's report

Title: Obstructive sleep apnea and multimorbidity

Version: 2 Date: 12 June 2012

Reviewer: Ariel Tarasiuk

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The study by Robichaud-Halle explored the association between OSA and multimorbidity. Their results are interesting; however, there are several major problems with the text presentation and methodology that must be addressed.

Introduction

First paragraph Introduction – The investigators should discuss the findings of a study by Reuveni et al. (Sleep 2004;27(8):1518-25) demonstrating that primary care physicians cannot identify a common disorder associated with cardiovascular and neurobehavioral disease. They concluded that education programs need to be developed to increase the level of suspicion of obstructive sleep apnea syndrome among practicing primary care physicians.

The text of the first paragraph can be extensively shortened:

For example: a) “L6-9 in paragraph 1 of the Introduction – “...There are three...”, “… respiratory arrest...” – can be deleted from the text.

b) L11–14 can be deleted – “... use an alternate 3% ... which records sleep cycles and quantifies apnea and snoring ...”.

P5 1st line – this sentence should be revised; the investigators should acknowledge that clinicians (especially primary care physicians) and decision-makers are following the results of the Sleep Heart Health Study that provides data on OSA patients starting from forty years of age. However, Reuveni et al. (Eur Respir J 2008;31:273-9) explored morbidity and health care utilization among young adult males with OSA over the five-year period preceding diagnosis. Compared to middle-aged males with OSA in whom increased expenditure was related to CVD and BMI, in younger (<40 years) patients utilization was not related to any specific disease.

Methodology

1) 1st paragraph – it is not clear how cluster sampling was done, e.g., random.

2) How many patients underwent PSG in 2008? How did you calculate your sample size?

3) What was the rationale to ensure proportional representation (25% each) of the four OSA categories? Was it performed according to the distribution of OSA severity in 2008?

3) The investigators should carefully describe their PSG referral population in
their area. In your area how are patients referred to PSG (e.g., ENT, pulmonary, sleep medicine), do your subjects have typical symptoms for OSA?

4) You must calculate statistical power to convince readers that you have the minimal sample size required.

Discussion

In the discussion section the investigators should acknowledge several important studies from Manitoba, Canada, that explored what obstructive sleep apnea patients are being treated for years prior to diagnosis (Chest 2002;121:164-72; Thorax 2002;57:417-22). Their results and others from the same group provided important clues to the thought that multimorbidity exists in OSA. Other studies from Israel using the health care utilization approach have also provided important clues to this thought, in relation to gender, age, and OSA severity.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests