Service Priorities and Programmes

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Using overnight pulse oximetry in screening of obstructive sleep apnea for at risk adult patients in primary care setting

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Introduction

Obstructive sleep apnea (OSA) is a significant medical problem that affects at least 2-26% of the general population. Untreated OSA is associated with increased risks of cardiovascular and neuropsychological morbidities. It is well known that polysomnography (PSG) remains the “gold standard” for diagnosis of OSA; however, the occurrence of OSA is far more prevalent that can be handled by available sleep centers. Thus, there is a need for screening tools that can stratify patients in order to ascertain patients at risk and prioritize those who need urgent PSG and/or further treatment and those who may not need PSG. Overnight pulse oximetry is commonly implemented as screening test.

Objectives

1. To investigate the prevalence of OSA among at risk patients in the primary care setting. 2. To test the usefulness of using overnight pulse oximetry for OSA screening in primary care setting.

Methodology

This is case series report involving adult patients at risk for OSA in the primary care. After screening assessment, overnight pulse oximetry was done for all patients while at home polysomnography were offered for selected patients. The prevalence and severity of OSA were established based on overnight pulse oximetry derived oxygen desaturation index (ODI). The correlation and agreement between oximetry and PSG were assessed by correlation coefficient, r-value and Bland Altman plot.

Result

Started from April 2010 to January 2013, 180 male and 119 female patients with mean (SD) age of 52 (11) and 48 (12) years old respectively were involved in OSA screening. 193 patients (65%) were screened positive to have OSA. The mild, moderate and severe OSA were 54%, 29% and 17% respectively. PSG were done for 86 patients. PSG derived apnea hypopnea index (AHI) has mean 29 events/h and SD 23.4 events/h. Overnight pulse oximetry derived oxygen desaturation index (ODI) and AHI had good correlation, $r = 0.82$ ($P < 0.001$). The mean and 2 SD of the difference

between ODI and AHI was 5.83/h and 21.08/h respectively. Bland and Altman plot showed that overnight pulse oximetry and PSG had good agreement. Conclusion: There is high prevalence of OSA (65%) among at risk patients in the primary care. Overnight pulse oximetry is a useful screening test for obstructive sleep apnea.