Detection Of Sleep Apnoea Syndrome By Using The Watch-Pat Device

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Introduction: Sleep apnoea syndrome known as common sleep disorder for many years. It is a major public health problem, which affects between 2%-4% of the adult population. The Polysomnographic (PSG) studies are considered the gold standard for the diagnosis of sleep apnoea syndrome. The full PSG is a time consuming and an extensive practice. Due to a high prevalence of the syndrome there is an increasing need to simplify the diagnosing procedure. The watch-PAT is a portable device based on the Peripheral Arterial Tonometry (PAT). The objective of the present study was to evaluate the Watch-PAT device for the diagnosis of sleep apnoea syndrome.
Methods: 41 patients (mean age 49 yrs-old, mean BMI=26, mean ESS=10) were diagnosed with sleep apnoea syndrome by the Watch-PAT device in the sleep laboratory at our centre. 22 Patients underwent full PSG in the same night as the Watch-PAT measurement and 19 patients during another night. The Watch-PAT device includes pulse-oximetry, PAT probe and actigraphy sensors. Automated analysis of the Watch-PAT sensors calculated a PAT-respiratory disturbance index (RDI) and sleep/wake cycle. Oxygen desaturation index (ODI) was measured with the oxymeter inside the Watch-PAT. The PSGs were scored manually using the American Academy of Sleep Medicine (AASM) criteria. The scorer was blinded to the results of the Watch-PAT device. The RDI and ODI (>4%) determined by PSG were compared with the RDI and ODI determined from the Watch-PAT device.
Results: The PAT-RDI/ODI levels were highly correlated to the PSGRDI/ ODI. Mean RDI and ODI determined by PSG were 25.02 and 12.52 compared with mean RDI of 24.34 mean ODI of 11.67 determined by the Watch-PAT device. The overall correlation between RDI-PAT:PSG is 0.97 and ODI-PAT:PSG is 0.93.
Conclusion: The Watch-PAT device is a powerful tool for simple and fast diagnosing patients with suspected sleep apnoea syndrome.

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