A PILOT EVALUATION OF A NOVEL SCREENING TOOL FOR SLEEP RELATED BREATHING DISORDERS

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Introduction: Polysomnography (PSG) is the standard procedure for the diagnosis of sleep related breathing disorders (SRBD) and patients are typically referred for overnight studies when they are identified as being at risk by a clinician. Various tools are in use today to identify patients at risk for SRBD and refer them subsequently for studies. The ASA (American Society of Anesthesiologists) and other professional bodies have published guidelines calling for the recognition of patients suffering from SRBD during perioperative care.

The Capnostream20p capnograph/pulse oximeter with SSDx algorithm is used in many hospital type environments whenever patient monitoring is required. The monitor provides an Apnea Index (AI), based on summation of the no-breath events per hour recognized by the capnograph, and an Oxygen Desaturation Index (ODI), using pulse oximetry. The information is presented in a simple summary report.

The purpose of our evaluation was to assess the level of agreement between the indices generated by the device and overnight polysomnograph studies.

Methods: During routine overnight sleep studies 39 adult patients were monitored with the device. The sleep study was interpreted by a trained clinician who was blinded to the device. The AI and ODI values generated by the device were compared to the sleep study outcomes.

Results: A statistically significant model using the maximal AI and ODI values to predict OSA was defined. At a cut-off point of 19 – (ODI max+AI max) >19., sensitivity equals 0.87 and specificity 0.82. The PPV with actual prevalence of 0.68 (per the clinical data gathered) equals 0.91 and NPV = 0.75.

Conclusion: The results indicated that the device showed high sensitivity and specificity, and hence can be used as a tool for screening and assisting in the diagnosis of adult patients with medium and severe Obstructive Sleep Apnea in the hospital environment.