Nasal/Oral Cannula

Diagnostic utility of a nasal/oral cannula with linearized pressure flow in comparison to AASM recommended combination of thermal and nasal pressure sensor
Sleep disorders, Sleep studies, Public health

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Objective: The AHI is the key measure used for identification of OSAS and for quantifying disease severity. AASM guidelines recommend a thermistor to cover the oral part of the flow (apnea) and a nasal cannula to detect the nasal part of the flow (hypopnea). This study aimed to determine the diagnostic utility of a nasal/oral cannula with a linearized pressure flow (NOC) in comparison to AASM recommended combination of thermistor and nasal cannula (TNC) during routine, clinical PSG.

Design and method: The SOMNOscreen™ plus system was applied as an online wireless PSG device during diagnostic nights in 71 patients with suspected sleep-disordered breathing (mean age 58.2 ± 14.4 years, mean BMI 30.6 ± 5.8 kg/m2). PSG was configured according to AASM criteria with simultaneous recording of flow using a nasal/oral cannula and a thermistor simultaneously. Respiratory events were scored by the dedicated DOMINO software (version 2.8.0) using NOC or TNC for detecting apneas/hypopneas.

Results: Statistical analysis revealed a significant correlation between NOC and TNC based AHI (r = 0.97). Diagnostic sensitivity, specificity, positive predictive value and negative predictive value of 95, 98, 95 and 98% respectively, were obtained for mild OSAS (AHI 5-14); 93, 100, 100 and 95% respectively for moderate OSAS (AHI 15-30) and 100, 98, 92 and 100% respectively for severe OSAS (AHI > 31).

Conclusion: Preliminary results of the first 71 of 300 planned subjects revealed that NOC provides reliable information and is highly sensitive and specific in detecting respiratory events in comparison to TNC. NOC may represent a simple, more comfortable and cost-efficient tool to identify OSAS.