

Diagnostic utility of a nasal/oral cannula with linearized pressure flow in comparison to AASM recommended combination of thermal and nasal pressure sensor

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Introduction

The AHI is the key measure used for identification of OSAS and for quantifying disease severity. Because of the non-linear flow curve with high sensitivity of the thermistor in the low flow range and high sensitivity of the nasal pressure in the high flow range AASM guidelines recommend a nasal oral thermistor to determine apneas and a nasal cannula to determine hypopneas. This study aimed to determine the diagnostic utility of a new 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.

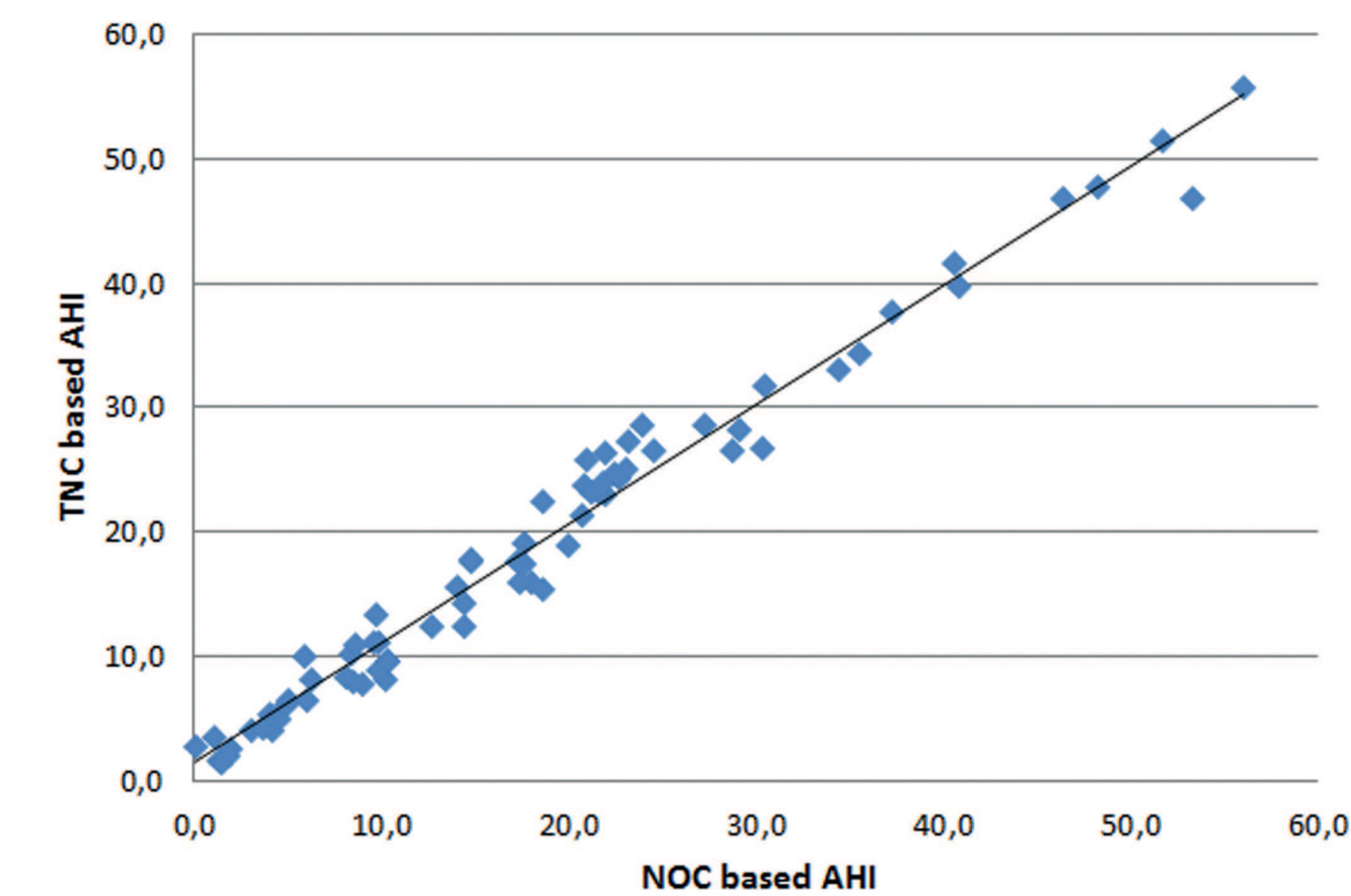


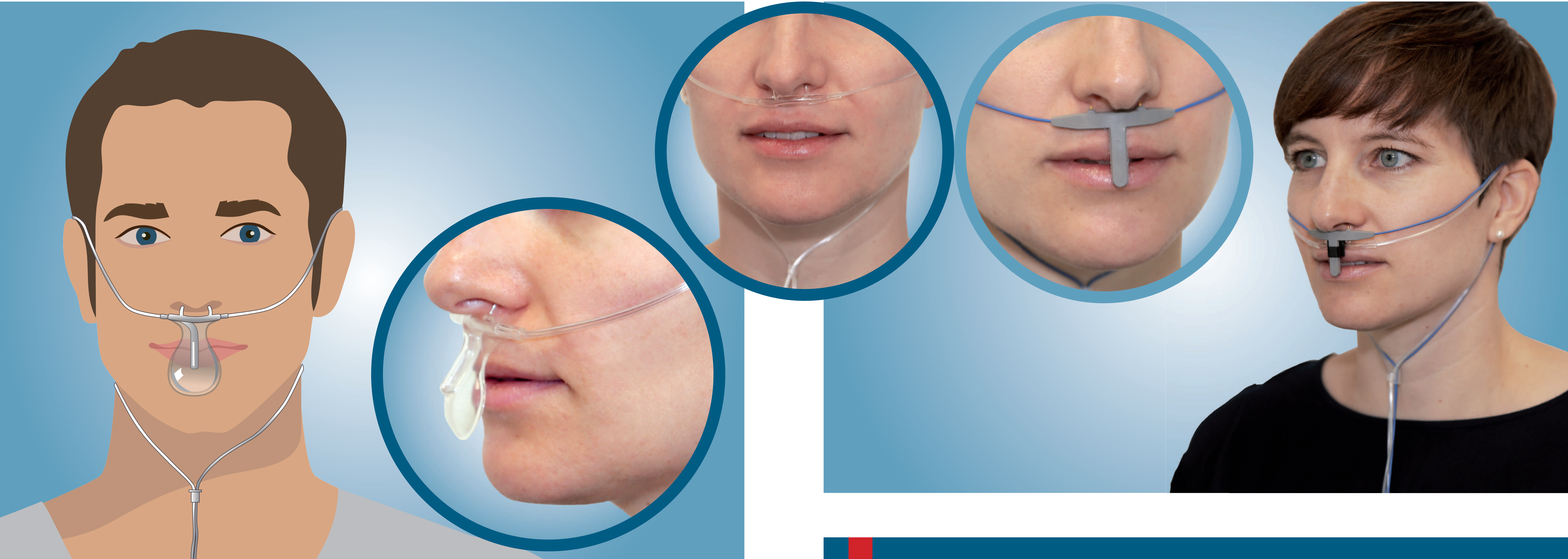
Fig.: Correlation between the two analyses. Linear repression with R2 = 0.97 (Study subjects n = 71)

Methods

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.

Summary advantages:

- No thermistor requested
- Easy application
- No disinfection
- Higher comfort for patients
- Lower cost and maintenance

	Normal AHI 0-4.9	Mild AHI 5-14.9	Moderate AHI 15-29.9	Severe AHI > 30
Sensitivity	100%	95%	93%	100%
Specificity	98%	98%	100%	98%

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* Declaration of interest: GK is CEO of SOMNOmedics GmbH