Validation study of an innovative device to screen sleep respiratory disorders

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Introduction
A simple and reliable screening tool is a real need to couple the epidemiology of obstructive sleep apnea (OSA) with the resources available in sleep laboratories, particularly in patients with OSA and comorbidities who often do not have symptoms (i.e.: somnolence).

Methods
Airgo™ is an innovative device consisting of a comfortable elastic band and a microprocessor to be positioned in the lower chest, which continuously calculates tidal volume and respiratory rate. Three accelerometers accurately measure the body position.

The occurrence of respiratory events during sleep is based on the phasic reduction of minute ventilation compared to last minute mean, and the automatic analysis discriminates central and obstructive events offering a respiratory disturbance index (RDI) at every 10% of ventilation reduction. We tested the device in 130 consecutive patients (24 females) simultaneously undergoing a cardiorespiratory monitoring (Nox T3).

Aims and objectives
To test the reliability of a simple screening tool (Airgo™) in allocating patients to mild, moderate or severe OSA group vs standard cardiorespiratory monitoring.

Reference
Antonelli A et al. Comparison between the Airgo™ device and a metabolic cart during rest and exercise. Sansors 2020; 20:3943.