PhD student:
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Research project:
OSAS and Cognitive Impairment: Insights from the IPNOS Study Toward Precision Health

Abstract:
Obstructive Sleep Apnea Syndrome (OSAS) is the most common sleep-related breathing disorder and represents a major public health issue due to its significant clinical, social, and economic burden. European literature highlights a high and increasing prevalence of the condition, with a progressive worsening of clinical outcomes in the absence of treatment and an increased risk of developing cardiovascular, metabolic, and neurocognitive diseases. Numerous observational studies and meta-analyses have also demonstrated a significant association between OSAS and cognitive decline, particularly in the domain of attention, memory, and executive functions, with an increased risk of Mild Cognitive Impairment and dementia.
The multicenter Italian PheNotypes Obstructive Sleep Apnea Study (IPNOS), promoted in collaboration with Sleep Centers recognized by the Italian Academy of Sleep Medicine, aims to characterize the clinical and physiological phenotypes of OSAS in Italy, investigate associations with comorbidities according to international classifications (e.g., ESADA, Icelandic Sleep Cohort, BAVENO), and develop a national database for future research. The study has a cross-sectional observational design and involves the enrollment of at least 200 adult patients (aged 20-80 years), with collection of clinical, instrumental, and laboratory data.
My PhD project will initially focus on the subgroup of patients recruited at the Interdepartmental Sleep Center of the University Hospital of Cagliari, with the objective of investigating the association between OSAS severity (as measured by the Apnea-Hypopnea Index) and cognitive performance (assessed through the Montreal Cognitive Assessment), hypothesizing an inverse correlation between these two parameters — i.e. that greater OSA severity is associated with poorer cognitive performance.
In a later phase, the protocol may be extended to the entire IPNOS cohort. Furthermore, a prospective study is planned to longitudinally evaluate the impact of continuous positive airway pressure (CPAP) therapy on cognitive function in OSAS patients, as well as to assess the incidence of frailty in this population and the effect of CPAP treatment on frailty status during follow-up, within the framework of precision medicine.