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| **Nocturnal desaturation and resaturation parameters are significantly influenced by lung function independent of lung diseases** |
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| **Introduction/Aim:** Diminished lung function is known to overlap with sleep disorders, particularly between COPD and OSA. Furthermore, reduced lung function has been linked to lower baseline oxygen saturation values, and oxygen saturation nadirs, yet no research has looked to how lung function may influence recovery from nocturnal oxygen desaturations.  **Methods:** Event-wise extraction of desaturation and resaturation durations, depths, rates and areas from polysomnographies ofSleep Heart Health Study was conducted using the ABOSA software. Only participants with available lung function data (FEV1, FVC & FEV1/FVC) were included. A multivariate regression analysis was adjusted for age, sex, BMI, smoking status, pre-event baseline (for desaturation parameters) and desaturation nadir (for resaturation parameters).  **Results:** 658 patients with no recorded comorbidities and 637 patients with lung disease (LD) (defined as COPD, asthma or usage of inhalers) were included for further analyses (median age 58 & 63yrs, BMI 27.2 & 27.9 kg/m2, 58 & 45% female, 52 & 62% with a smoking history respectively). Among healthy participants higher FEV1 & FVC were associated with; higher pre- and post-event baselines, longer desaturations and slower desaturation rates. In addition, a higher FEV1 was also associated with a faster rate of resaturation, while a higher FEV1/FVC was associated with reduced desaturation durations. Among LD participants higher FEV1, FVC & FEV1/FVC were associated with; higher pre- and post-event baselines, smaller desaturation areas and deeper resaturations and steeper resaturation rates. Higher FEV1 & FVC were additionally associated with reduced resaturation durations, while a higher FEV1 was associated with reduced desaturation durations.  **Conclusion:** Morphology of nocturnal desaturations is significantly influenced by lung function in both a healthy cohort and one with evident lung disease. Patients with poor lung function display faster desaturations, and slower resaturations increasing the hypoxic burden, and thus potentially the risk for negative sequalae related to OSA.  **Grant Support: Nil** |