

## INTRODUCTION

Obstructive sleep apnea (OSA) is defined by the apnea-hypopnea index and it is characterized by excessive daytime sleepiness, non-restorative sleep, fatigue, and/or impairment of quality of life related to sleep not explained by other causes. There are modifiable risk factors (obesity, alcohol, tobacco, sedentary life) and non modifiable risk factors (gender, age, genetics). It is suspected that the early occurrence of apneas/hypopneas during sleep could be related to a greater severity of OSA. The aim is to analyze the association between the latency of the first respiratory event (LFRE) and OSA severity.

## METHODS

An observational study was conducted based on clinical and polysomnographic data from 53 subjects with suspected OSA. The time-event variable was LFRE, defined as the time from sleep onset until to the first apnea or hypopnea, and the outcome was the OSA severity (quantified according to the apnea-hypopnea index value). Survival analysis was performed using Kaplan-Meier curves and the log-rank test. In addition, Cox regression and ordinal logistic regression (cumulative logit) models were constructed, adjusted for body mass index (BMI), cardiovascular risk factors, and type of sleep and position in which the respiratory event occurred. The statistical significance level considered was a p-value < 0.05, and all analyses were performed using the R statistical software 3.5.2 (R Core Team, 2023).

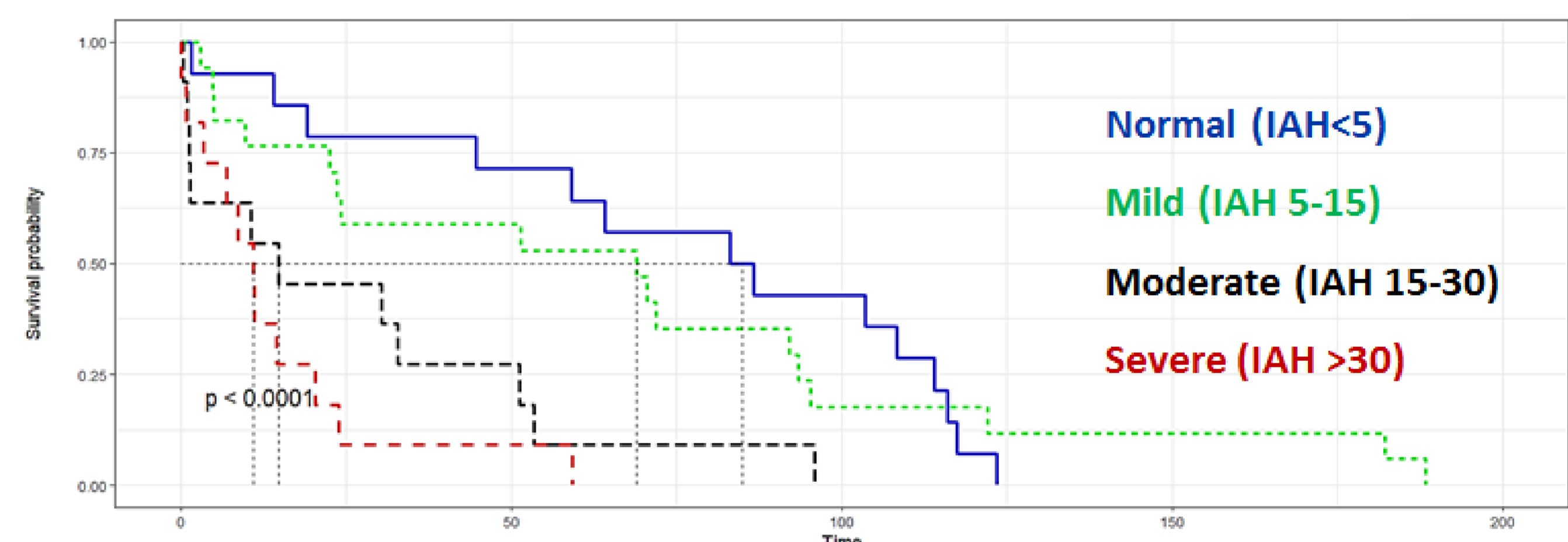
## RESULTS

Median survival of the LFRE decreased as the severity of OSA increased (normal=84.9 min, mild OSA=69 min, moderate OSA=14.9 min, and severe OSA=10.9 min). Significant differences were observed between the OSA severity and the LFRE (log-rank=21.5; p-value < 0.001). In regression models, an increase in respiratory events was observed in subjects with greater severity of OSA (HR\_moderate OSA=3.2; p-value=0.01; 95% CI: 1.3-7.9; HR\_severe OSA=5.9; p-value < 0.001; 95% CI: 2.3-15.1), and a decrease in the value of the LFRE when the severity of OSA increased (OLR\_latency: -0.021293; p-value < 0.001; 95% CI: -0.0345, -0.01).

### MEDIAN STATISTICAL SURVIVAL

	n	events	median
Normal	14	14	84.9
OSA-mild	17	17	69.0
OSA-moderate	11	11	14.9
OSA-severe	11	11	10.9

### KAPLAN MEIER CURVES



Log-rank=21,5; p-value<0,001

## CONCLUSIONS

In our sample, we observed that the LFRE during sleep decreases significantly when the OSA severity increases. This statistical analyse showed a convergent validity. Although these results may indicate that the LFRE is a predictor of OSA severity, it is essential to carry out multicenter studies, preferably longitudinal studies, that include a larger sample size (including pediatric population, independently analyzed) to confirm this relationship.

## REFERENCES

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