

Could snoring sound analysis parameters be used to predict the severity of obstructive sleep apnea syndrome before polysomnography?

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Abstract

Aim of the study: Snoring is one of the main symptoms of obstructive sleep apnea syndrome (OSAS) patients. In this study, it was aimed to investigate whether snoring sound parameters can be used in pre- polysomnography (PSG) screening in patients with OSAS. **Methods:** All patients underwent full-night PSG test. Sound parameters were measured using the PRAAT acoustic analysis program. The relationship between these parameters and degree of OSAS, and also the relationship between snoring sound and types of OSAS were analyzed prospectively. **Results:** Seventy seven patients diagnosed OSAS were included the study. It was found that the shimmer scores decreased significantly from mild OSAS to severe OSAS ($p=0.045$). Although mean pitch scores increased from mild to severe OSAS, it was not found to be statistically significant ($p=0.16$). Mean pitch score was found to be significantly higher in the severe group ($p=0.022$). Shimmer scores were found significantly higher in REM-predominant OSAS patients than without REM-predominant OSAS patients ($p=0.006$). Shimmer scores were significantly higher in obese patients than in non-obese patients and in patients over 40 years of age years than under 40 years of age ($p=0.032$; $p<0.01$; respectively). The ROC analysis was performed to determine the cutoff value of mean Pitch ([?]74.65) in predicting severe OSAS classification (AUC=0.69; $p=0.017$). **Conclusion:** Our results are important to show that, analysis of snoring sound with a noninvasive method of acoustic voice analysis, can be applied quickly and easily in the pre-PSG screening in especially clinically important advanced-stage OSAS cases that should be diagnosed urgently.

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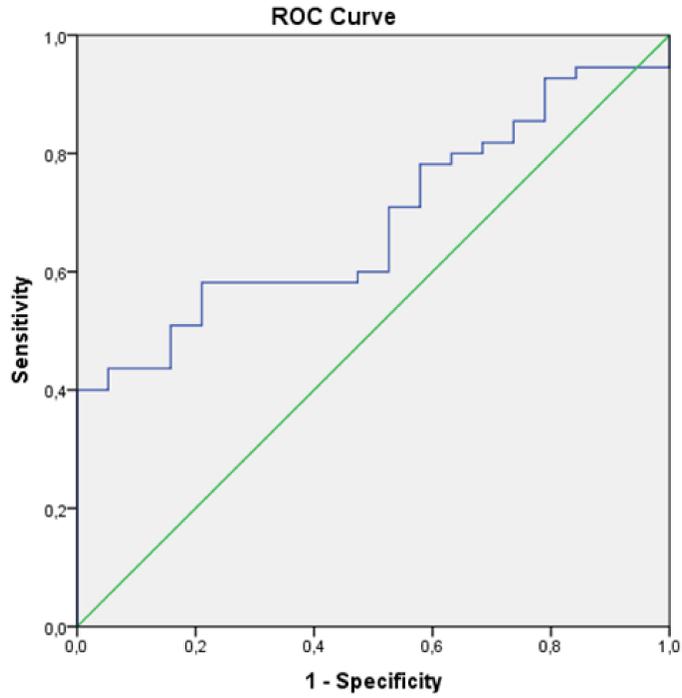


Figure 1: In receiver operating characteristic (ROC) analysis, the Mean pitch cutoff value that predicts moderate-severe OSA was 74.65 (% 58 sensitivity and % 78.9 specificity, AUC = 0.69, 95% CI: 0.56–0.81, P =0.017).

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