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Comparison and Analysis of Sleepstrip and polysomnography In patients with Obstructive Sleep Apnea Syndrome

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PURPOSE : Sleepstrip is a measuring instrument for domestic use that helps to easily identify sleep apnea by attaching thermistors, which play a similar role as sleep lab sensor in polysomnography, at the tip of the nose, to measure the current of air in nasal and oral cavity during sleeping. The author attempted to find out the correlation between sleepstrip and polysomnography by comparing dyspnea and apnea index measures from polysomnography with those measured from sleepstrip.

METHOD : In 20 snoring cases, sleepstrips were used to measure apnea (defined by a decrease in air current to less than 10 percent of the usual amount) and hypopnea (defined by a decrease in air current to less than 20 percent of the usual amount) in a 5-hour sleep, and AHI index (Apnea Hypopnea index, got by adding apnea value and hypopnea value) of sleepstrip was compared with dyspnea and apnea index of polysomnography.

RESULTS : It was found that the correlation was the biggest when RDI (polysomnography) value stood at 20 and AHI (Sleepstrip) at 10 and when AI value of polysomnography was at 5 and AHI of sleepstrip at 10. Among the total 20 patients, RDI value was measured to be over 20 in polysomnography in eight patients, six of them with over 10 AHI value in sleepstrip. Twelve patients were found to have less than 20 RDI value in polysomnography, eleven of them with less than 10 AHI value in sleepstrip, leaving sensitivity and specificity at 0.75 and 0.91, respectively. Comparing with AI in polysomnography, the sensitivity and specificity of AHI in sleepstrip stood at 0.6 and 0.9, respectively.

CONCLUSION : Sleepstrip is an easy and useful way of screening test to identify sleep apnea and is expected to contribute to decreasing the use of unnecessary tests and play an important role in early detection and treatment of sleep apnea syndrome in future.