Patient Preferences Comparing Use of Two Home Sleep Testing Devices

Michael S. Simmons, DMD

Introduction: With the 2008 CMS Sleep Testing decision there is increased acceptance in use of home sleep testing (HST) devices. This pilot study compared subject preferences and measurements from two well validated HST devices self-applied and worn simultaneously.

Methods: Twenty subjects (17 male, range 34-80 years), recruited from two dental offices in Southern California, were trained to apply device (A}ARES Model-600, {ARES Medical, Carlsbad, CA} first and device (W)Watch-Pat Model-100 {Itamar Medical, Caesarea, Israel} second at home just prior to sleep. Upon return of the devices, subjects provided written responses to questions on their preferences and completed another questionnaire after study reports were reviewed with the clinician some days later. Responses required subjects to rate each device on a scale from 0 to 10 with 10 as best outcome. Only responses which elicited a preference in over 1/3rd of participants are reported. Two questions required subjects to preferentially select only one device to reuse on them-self or to recommend to another.

Results: Responses are reported based on two statistics, the percentage of subjects with a preference and the ratio of preference between device (A) and (W). For 'Easiest to Apply' the 60% of patients with a preference chose (A) 3:1. For 'Easiest to Remove', the 40% preferred (A) 7:1. For 'Comfortable During Sleep' the 50% preferred (A) 3:2. For 'Preference of Report' the 55% preferred (W) 5:1. For "Immediate After Effects' the 35% preferred (A) 5:2. When given a choice as to which device they would 'Prefer to Reuse', subjects selected (A) 13:7. Of the 65% of patients who had a preference as to which device they would 'Recommend to a Friend', (A) was preferred 9:4. 'Overall satisfaction with use of device' was (A)77.5% and (W)76.5%

Device(A) failed in one case (5%) and device(W) failed in three cases (15%). In 16 valid comparable studies, there were no significant differences in total recording time, sleep time, and valid sleep time. Correlation between device (A) (AHI-4%) and device (W) (pAHI) measures validated against the Medicare AHI criteria was 0.78, however significant differences were observed (AHI-4% 16$\pm$3.4 vs. pAHI 27$\pm$5.4, $p < 0.01$). The respective measures validated again the Chicago RDI criteria were similar r=0.82 (AHI-1% 26$\pm$4.3 vs pRDI 30$\pm$5.2), however clinically important differences were observed in three cases (A=36 vs. W=10, 13 vs. 28 and 35 vs. 68). Comparisons in the percent-time with SpO2<90% approached significance (1.5$\pm$0.8 vs. 7.6$\pm$4.0, p=0.057) with substantial differences observed in two cases (A=13% vs. W=42%, 1% vs. 54%). No significant differences were observed in the lowest SpO2.

Conclusions: Approximately 50% of subjects had a preference between the systems but overall satisfaction was almost the same. While subjects preferred the report format of device (W) 5:1, the remaining six categories showed subjects preferred device (A) on average 2:1. The author recommends clinicians utilize more than one type of ambulatory device to accommodate individual patient preferences.

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