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Submitted as a Scientific Abstract to: American Thoracic Society International Conference, San Francisco, Friday, May 18, 2007 - Wednesday, May 23, 2007.

A Home Screening Tool For Obstructive Sleep Apnea Using A Combined Holter-Oximeter

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RATIONALE

Limited diagnostic systems, suitable for home monitoring, are a desirable alternative to polysomnography (PSG) in the evaluation of patients with suspected obstructive sleep apnea syndrome (OSAS). Since SaO₂ and heart rate variability have been independently proposed as screening tools, we evaluated a combined electrocardiograph (EKG) and oximeter recorder (Holter-Oximeter) in patients simultaneously undergoing PSG.

METHODS

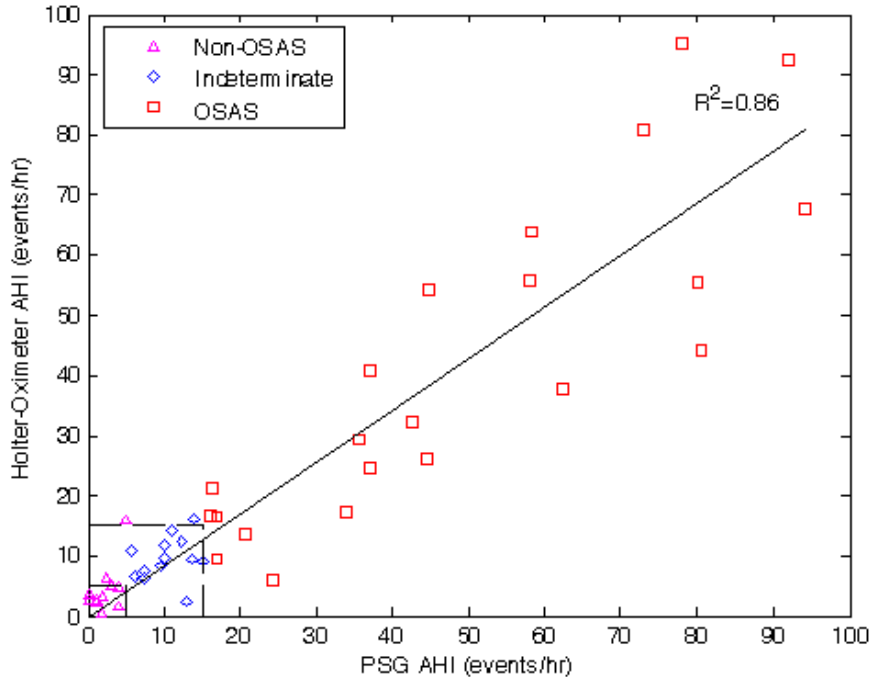
Seventeen (17) subjects (12♂:5♀) with suspected OSAS (aged 49±10), Apnea Hypopnea Index (AHI) 25±29, had PSG and simultaneous Holter-Oximeter (Nemon DR180+) studies overnight. Patients were classified by PSG as non-OSAS (AHI<5/hr), mild OSAS (5≤AHI<15), and moderate or severe OSAS (AHI>15). We used a previously developed algorithm for AHI estimation from the EKG and SaO₂ signals. We determined (a) the sensitivity and specificity of Holter-Oximeter derived AHI compared to the PSG-derived AHI, and (b) the correlation between AHI by the two techniques.

RESULTS

The Holter-Oximeter system classified all 17 subjects correctly (including one with central apneas), and correlation between AHI by the two techniques was 0.94 (p<0.001; Fig.).

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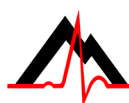


CONCLUSION

Combined Holter-oximeter monitoring may provide a suitable device for home screening of OSAS.

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