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**A186**

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Room Room 356

## Home High Resolution Pulse Oximetry as a Screening Tool for Patients with Obstructive Sleep Apnea

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**Introduction:**

Identifying preoperative patients with undiagnosed obstructive sleep apnea (OSA) is important as they are at increased risk of respiratory complications <sup>1</sup>. We have previously shown that OSA patients demonstrate high resolution pulse oximetry (HRPO) patterns temporally associated with partial airway obstruction during polysomnography (PSG) <sup>2</sup>. [figure1]We hereby investigate the prevalence of those patterns during home sleep in a preoperative population at high risk for OSA, as well as a control group. An overnight, home HRPO study may offer a convenient, cost effective, and objective screening alternative to PSG for identifying patients with OSA.

**Methods:**

Adult ASA I-III patients admitted for gynecologic, bariatric, lumbar spine, or airway surgery who met criteria to be study or control patients provided written, informed consent.[table1]Patients with PSG confirmed diagnosis of OSA or treated with continuous positive airway pressure were excluded. Patients wore the Konica-Minolta HRPO device for one night at home.[figure2]The presence and severity of HRPO patterns consistent with reduction in airflow (rapid, cyclical oxygen de- and resaturations) were quantified using two commercially developed software packages ("SPD <sup>TM</sup>", Nellcor-Covidien, Bolder, CO; "DAPR <sup>TM</sup>", Lyntek Medical, Westerville, OH) in beta test versions. We used the Pearson coefficient to calculate the correlation of OSA patterns between the two packages.

**Results**

Twenty five patients (15 study, 10 controls) provided informed consent and a complete preoperative HRPO dataset. Ten patients (66%) meeting study criteria and two patients (20%) meeting control criteria demonstrated HRPO patterns consistent with mild to severe OSA. The agreement in identifying OSA patterns between the software packages was high ( $r = 0.97$ ). Using this abbreviated screening tool as the gold standard, the sensitivity, specificity, and positive and negative predictive values of home HRPO were 66%, 80%, 84%, 62% respectively.

**Conclusion:**

A home HRPO screening study was reasonably sensitive and specific in identifying patients at risk of OSA by a modified Berlin score. We suspect home HRPO may provide even better predictive value in our follow-up study using PSG or the STOP-BANG questionnaire <sup>3</sup> as gold standards for OSA.

**Ref :**

- 1.Gupta R. et. al. Mayo Clin Proc. 2001;76:897-905.
- 2.Overdyk F, et. al. Anesth. 2008 A1245.
- 3.Chung F, Anesth 2008; 108:812-21.

From Proceedings of the 2009 Annual Meeting of the American Society Anesthesiologists.

### Selection criteria (derived from Berlin score) for study/control patients

Criteria A	Criteria B
Loud, frequent snoring	Hypertension
Daytime fatigue	BMI>30

Study patients: Both symptoms from A or one from A and one from B: Control patients: None from A or B

**Figure 1**

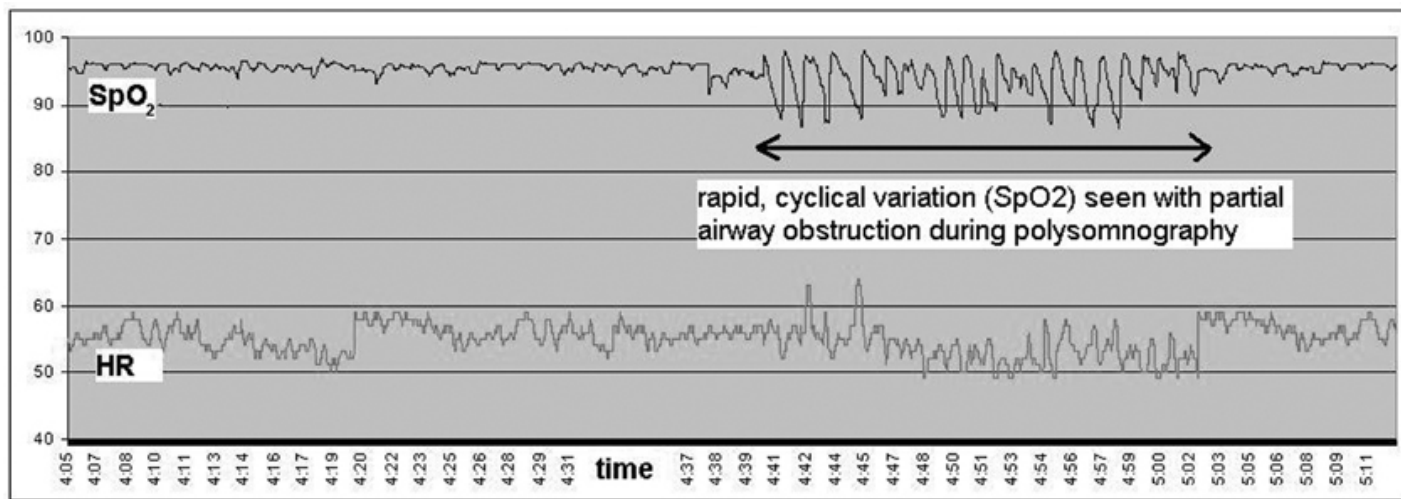


Figure 2

