

The Prevalence of Obstructive Sleep Apnea in Hospitalized Psychiatric Patients Receiving Electroconvulsive Therapy



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Background and Objective

- Recent studies suggest the importance of recognizing obstructive sleep apnea (OSA) in patients requiring anesthesia for surgery [1-5].
- Major depressive disorder (MDD) is commonly associated with OSA. Approximately 55% of OSA patients have depressive symptoms, compared to about 8% in the general population [6].
- Electroconvulsive therapy (ECT) is a treatment for MDD and requires anesthesia. The use of anesthesia in this population with highly co-morbid OSA may lead to increased morbidity and mortality [7].
- Given the high association of OSA in MDD, we hypothesized that screening for OSA using a validated questionnaire for subjective symptoms and overnight oximetry for objective symptoms, would yield many patients at risk for undiagnosed OSA.

Methods

- Hospitalized patients receiving ECT were asked to complete the Berlin Questionnaire (BQ) and undergo one night of continuous oximetry [8]. An abnormal oxygen desaturation index (ODI) was ≥ 5 /hour.
- ECT anesthesia records were also reviewed for OSA diagnoses to add retrospective data from a large number of patients previously treated at the University of Utah.
- A High Risk (HR) score on the BQ along with an ODI ≥ 5 /hour were considered *High risk* for OSA [9].

Results

Prospective

- Data from 51 patients were collected. Most were female (75%). Median age was 51 (Table 1).
- 38% of male and 29% of female patients are *High risk* for OSA (HR Berlin score and ODI ≥ 5 /hr) (Table 2).
- Mean ODI for the *High risk* group is 32/hour (Table 3).

Retrospective

- The mean age was 49.8 years with a range of 15 to 96.
- Women comprised 66% of the population.
- The median BMI was 34.5 in patients with OSA and 25.8 for patients without.
- The prevalence of OSA was 18% for men and 9.7% for women (n=559) [10].

Table 1. Demographics of Prospective Study

	Male	Female	Total
N	13	38	51
Median age	47	53	51
Median BMI	28	28	28
Patients diagnosed with OSA prior to this study	8	3	11
History of pulmonary disease	0	1	1

Table 2. Prospective Study Characteristics

	Men (n=13)	Women (n=38)	Combined (n=51)
HR on Berlin and positive oximetry (ODI ≥ 5 /hr)	38% (5)	29% (11)	31% (16)*
HR on Berlin and negative oximetry (ODI < 5 /hr)	8% (1)	10% (4)	10% (5) ⁽¹⁾
Low risk (LR) on Berlin and positive oximetry (ODI ≥ 5 /hr)	54% (7)	31% (16)	45% (23) ⁽²⁾
LR on Berlin and negative oximetry (ODI < 5 /hr)	0	18% (7)	14% (7)

- High risk for OSA
- Intermediate risk for OSA
- Low risk for OSA
- * Of these 16, 4 women and 2 men had a previous diagnosis of OSA
- ⁽¹⁾ Of these 5, 3 women had a previous diagnosis of OSA
- ⁽²⁾ Of these 23, 1 male and 1 female had a previous diagnosis of OSA

Table 3. Mean ODI for each level of OSA Risk

	Men (n=13)	Women (n=38)	Combined (n=51)
HR on Berlin and positive oximetry (ODI ≥ 5 /hr)	25	36	32
HR on Berlin and negative oximetry (ODI < 5 /hr)	2	4	3
Low risk (LR) on Berlin and positive oximetry (ODI ≥ 5 /hr)	14	17	16
LR on Berlin and negative oximetry * (ODI < 5 /hr)	0	2	2

- High risk for OSA
- Intermediate risk for OSA
- Low risk for OSA

Conclusions

- This study shows a high percentage of patients undergoing ECT that are at risk for OSA (86% at *High* or *Intermediate* risk).
- OSA screening should be considered part of the pre-ECT evaluation, since anesthesia in OSA patients increases morbidity and mortality.
- The cause for the increased association between MDD and OSA is uncertain; however their similar symptoms may be a factor.
- Future studies: do patients with MDD receiving ECT have more refractory forms of MDD due to untreated OSA? Do ECT patients with OSA have increased morbidity and mortality due to OSA?

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