



Drug induced sleep endoscopy; predictive of success for oral appliance therapy in treating obstructive sleep apnea.

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Introduction

Oral appliance therapy (OAT) can be an effective option for patients with obstructive sleep apnea (OSA) who are unable to tolerate CPAP. We hypothesize that patients undergoing drug induced sleep endoscopy (DISE) who show improvement in the cross sectional area at the level of the velum and oropharynx with a jaw thrust will benefit the most from OAT.

Methods

A retrospective review was carried out of all patients referred for a sleep surgery evaluation secondary to an inability to tolerate CPAP. We included those patients who underwent DISE (DISE group) between January 2014 and June 2016, received OAT based off recommendations made by DISE findings, and had a follow-up polysomnogram (PSG) with use of OAT. A control group was designed by selecting a sample of patients undergoing PSG with OAT in place who had not undergone prior DISE (no DISE group). The two cohorts were compared to evaluate the hypothesis.

	DISE Group	No DISE Group	p value
Gender	13 Male 5 Female	14 Male 6 Female	0.583
Age	56.22 ± 15.28 years	61.95 ± 14.01 years	0.251
Pre OAT AHI	33.24 ± 24.75	29.81 ± 19.36	0.684
Pre OAT Nadir	79.47 ± 14.67	79.05 ± 8.85	0.336
Pre OAT ESS	7.08 ± 5.81	10.05 ± 3.98	0.114
Pre OAT BMI	28.69 ± 6.20	27.90 ± 4.51	0.937

Table 1: Demographic and pretreatment variables of the DISE compared to No DISE group.

	DISE Group	No DISE Group	p value
Post OAT AHI	8.29 ± 6.21	15.39 ± 11.82	0.030
Post OAT Nadir	84.25 ± 8.39	83.90 ± 6.70	0.671
Post OAT ESS	6.15 ± 3.51	7.95 ± 3.67	0.923
Post OAT BMI	27.17 ± 4.46	27.98 ± 5.11	0.633

Table 2: Posttreatment comparison of the DISE to No DISE group.

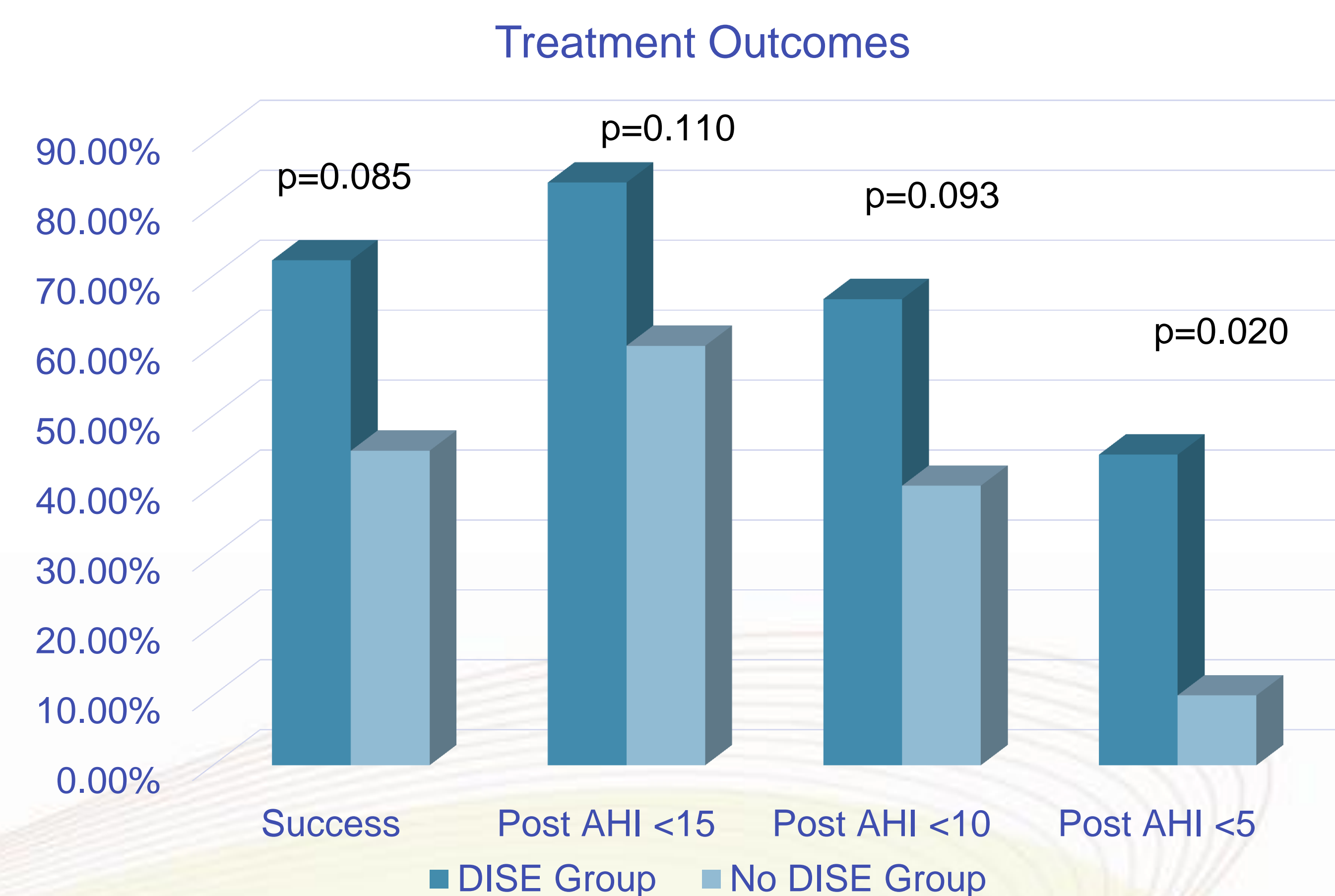


Figure 1: Comparison of treatment outcomes between cohorts.

Results

We found 18 patients fitting inclusion criteria for the DISE group and 20 patients in the no DISE group. There was no difference between the DISE and no DISE cohorts with respect to mean age, gender, pre OAT BMI, post OAT BMI, or pre OAT PSG characteristics including; AHI, O₂ Nadir, or Epworth sleepiness score (ESS).

We found no difference in the proportion of patients reaching a treatment AHI <15 (p = 0.110). The percentage of patients reaching treatment success and treatment AHI <10 was greater in the DISE group and this approached significance (p = 0.085 and 0.093).

Significantly more patients in the DISE group reached a treatment AHI <5 (p = 0.020).

Conclusion

Patients showing increased airway dimensions at the level of the velum and oropharynx with a jaw thrust may benefit the most from OAT. The use of DISE to identify this subset of patients is helpful in optimizing outcomes with OAT.