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“Blow or bite” - treatment recommendations in mild to moderate Obstructive Sleep Apnea in the European Sleep Apnea Database Cohort

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Background

Mild and moderate obstructive sleep apnea (OSA) are frequently treated with positive airway pressure (PAP) or oral devices (OD). While PAP is more effective in respiratory event control, improvement in symptomatology is comparable between the two modalities. Data suggest better adherence with OD when compared with PAP. Our study aimed to analyse predictors for treatment recommendations in mild-to-moderate OSA from the European Sleep Apnea Database (ESADA) cohort.

Materials and Methods

Phenotypic factors associated with OD- instead of PAP treatment were analysed in the ESADA cohort. Patients with mild and moderate OSA (N=1699 and 4308, respectively) and with a treatment recommendation for PAP or OD were included. A multivariable logistic regression model was performed, including predictors like anthropometrics, symptoms (Epworth Sleepiness Scale score (ESS)), apnea severity (AHI, lowest saturation), and comorbid hypertension.

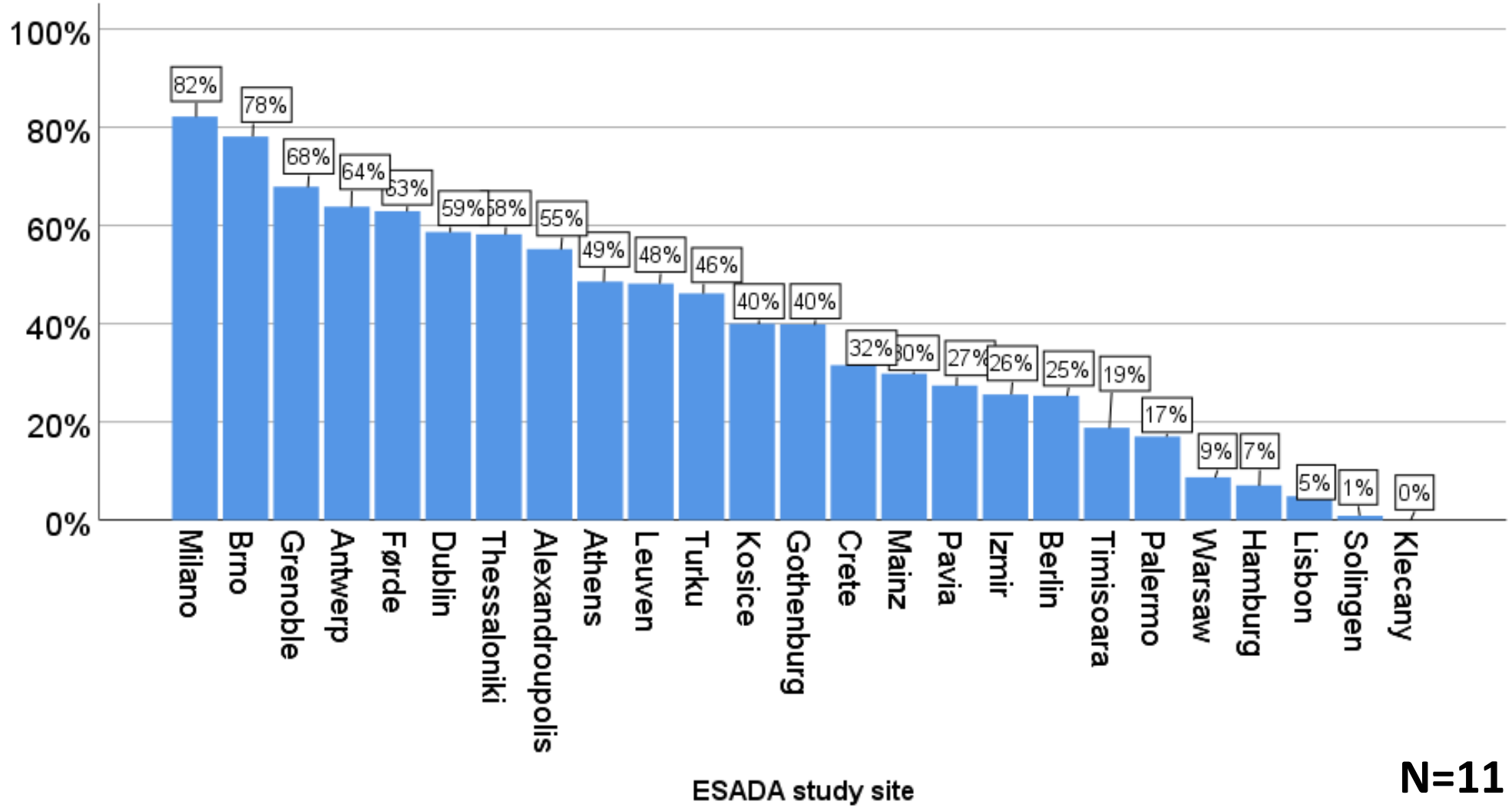
Results

25 out of 30 ESADA centers (83%) prescribed OD as first line treatment. Prescription rate for OD was approximately 10% in 5 and exceeded 15-20% in 3 centers. Female gender was a significant predictor for OD treatment (Odds ratio mild OSA 1.35 (95% CI 1.08-1.70, P=0.01) and moderate OSA 1.38 (95% CI 1.07-1.78, P=0.013), respectively). Age (Beta -0.039 and -0.039), BMI (Beta -0.06 and -0.11), AHI (Beta -0.10 and -0,20) and ESS (Beta -0.0 and -0.08) were all significant predictors for OD treatment, respectively (P<0.001 for all factors). Limited apnea related hypoxia (lowest saturation with Beta 0.049, p<0.001) was a predictor for OD only in mild OSA. Comorbid hypertension was not associated with treatment recommendations.

Conclusion

Treatment in mild-to-moderate OSA favors PAP over OD. Anthropometric factors, symptoms and OSA severity influenced the treatment choice. Regional differences in the availability and reimbursement for each treatment option may also influence this decision. Data on clinical outcomes are warranted to recommend one treatment modality over the other.

Oral device as the first choice for treatment in mild to moderate OSA per study site



N=11 478

Clinical characteristics in patients receiving PAP or OD treatment

Primary recommended treatment			
	PAP N = 6618	OD N = 3491	Significance unparied t-test or Chi^2 test
	Mean value or percentage		
Age (yrs)	54.4	52.4	<0.001
BMI (kg/m2)	31.1	29.5	<0.001
Females (%)	33.2	60.0	<0.001
Hypertension (%)	44.1	35.2	<0.001
Insomnia (%)	3.5	2.4	<0.001
CDE driving license (%)	6.5	8.5	<0.001
AHI (events/hour)	19.1	11.9	<0.001
ODI (events/hour)	16.9	10.5	<0.001
ESS (points)	9.2	8.0	<0.001
OD availability (%)	87.3	96.9	<0.001
OD reimbursement (%)	47.8	59.2	<0.001

Analysis of indepedent predictive factors favoring OD over PAP treatment in mild to moderate OSA

Factors predicting the prescription of oral device treatment	Odds ratio (95% CI)	Significance
Apnea Hypopnea Index classes		
Mild OSA (AHI 5-<15)	7.2 (6.5-8.0)	<0.001
Moderate OSA (15-<30)	1	
Daytime sleepiness (ESS score)		
No EDS (ESS 0-6)	2.3 (1.9-2.8)	<0.001
Mild EDS (ESS 7-10)	1.8 (1.5-2.1)	<0.001
Moderate EDS (ESS 11-15)	1.2 (1.0-1.5)	0.05
Severe EDS (ESS 16-24)	1	
Weight classes (BMI kg/m^2)		
Normal weight (<25)	1.7 (1.4-2.1)	<0.001
Overweight (25-<30)	1.5 (1.3-1.8)	<0.001
Obesity (30-<35)	1.2 (1.1-1.5)	0.006
Morbid obesity (≥35)	1	
Availability of OD	2.9 (2.3-3.7)	<0.001
Reimbursement for OD	1.4 (1.3-1.5)	<0.001
Normotension	1.1 (1.0-1.3)	0.017
Diagnosis of hypertension	1	