Potential benefits of sleep medicine in acromegalics: preliminary results from a case-control study

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INTRODUCTION

The Obstructive Sleep Apnea (OSA) syndrome is highly prevalent in acromegaly (≈ 80%) and often persists after disease remission. We report a series of acromegalics in whom nocturnal Continuous Positive Airway Pressure (CPAP) ventilation therapy was indicated on the basis of standard criteria (Ref.1) and compare OSA severity, co-morbidities and the impact of CPAP with a control group.

PATIENTS AND METHODS:

Thirty acromegalic patients (ACRO) - 22/30 with an active disease - were compared to 30 control OSA patients (CTRL) matched for age, gender, and BMI. Each group included 21 M, 9 F, median age 53.5 yrs in ACRO vs 54.5 yrs in CTRL (P ns). Hypertension (HT) and diabetes mellitus (DM) were recorded. After CPAP was indicated on the basis of basal home-sleep apnea test or polysomnography, a second sleep study was available in 21 ACRO - 6/21 with an active disease. Continuous data are expressed as median (range) and analysed by non-parametric tests, percentages were compared by the Chi-square test. P<0.05 was considered significant.

RESULTS

Data obtained at baseline are summarized in **Table 1**. At baseline, ACRO and CTRL had a similar prevalence of severe OSA (23/30 each, 76.6%) and AHI was not significantly higher in ACRO than in CTRL (44.7 vs 35.1 AHI/h, P ns). In contrast, HT and DM were significantly more prevalent in ACRO than in CTRL (P=0.012 for HT; P<0.001 for DM). Data obtained at second sleep evaluation in 21 ACRO (14 on CPAP) and matched CTRL patients (all on CPAP) are summarized in **Table 2** and **Table 3**. A remarkable improvement was observed in both groups (median AHI decrease -86.4% in ACRO vs -87.8% in CTRL, P ns). However, the best results were obtained in the ACRO-CPAP subgroup (median AHI decrease -93.9% P ns). In acromegalics, AHI decrease (% of baseline) was also significantly correlated with the decrease in BMI (P = 0.041) and tended to be correlated with the decrease in IGF1 (P = 0.07).

Table 1: Comparison of OSA severity in ACRO and CTRL

1rst evaluation	ACRO (n=30)	CTRL (n=30)	P
Age (yrs)	53.5 [28-72]	54.5 [31-68]	p=1.000
BMI (Kg/m^2)	30.6 [22-42.3]	30.8 [24.7-43.4]	p=0.971
Hypertension	26/30 [86.7%]	16/28 [57.1%]	**p=0.012**
Diabetes Mellitus	13/30 [43.3%]	1/28 [3,6%]	**P<0.001**
IGF1 (% ULN)	169.2 [30.7-399.5]	-	
AHI	44.7 [14.8-93.4]	35.1 [17.1-106.5]	p=0.423
% severe OSA	23/30 [76.7%]	23/30 [76.7%]	p=1.000

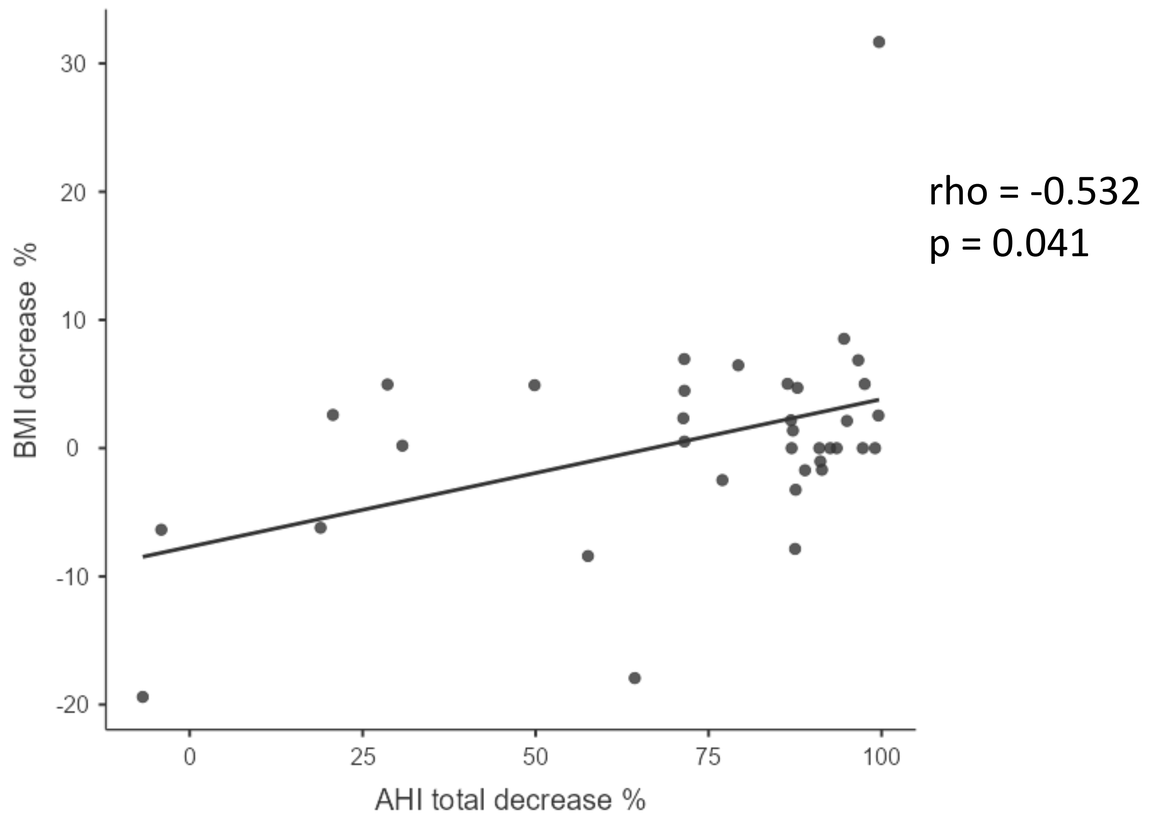
Table 2: Efficacy of treatment in ACRO and CTRL

2° evaluation	All ACRO (n=21)	CTRL (n=21)	P
IGF1 (% ULN)	99.9 [14.3-204]	-	
AHI post	46.3 [14.8-93.4]	33.6 [17.1-82.1]	p=0.396
% severe OSA	3/21 [14.3%]	0/21 [0%]	p=0.072
AHI decrease	86.4 % [(-6.7)-98.7]	87.8 % [49.8-99.6]	p=0.247

Table 3: Efficacy of treatment in ACRO on CPAP and CTRL

	ACRO-CPAP (n=14)	CTRL (n=14)	P
AHI post CPAP	3.1 [0.7-41]	5.4 [0.2-19]	p=0.198
% severe OSA	1/14 [7.1%]	0/14 [0%]	p=0.309
AHI decrease	93.9 % [30.7-98.7]	89.4 % [49.8-99.6]	p=0.541

Graphic 1: Correlation between AHI decrease and BMI decrease



CONCLUSIONS

Compared to OSA patients with similar demographics and BMI, no clear increase in OSA severity was observed in ACRO. However, comorbidities were more severe, which is a further indication to actively treat OSA. Because the control of acromegaly may not be sufficient to control OSA and the best results were obtained in acromegalics receiving CPAP, ventilation therapy should be considered early in the management of acromegaly.

References: 1. Sateia MJ. International classification of sleep disorders-third edition: highlights and modifications. Chest. 2014 Nov;146(5):1387-1394. doi: 10.1378/chest.14-0970. PMID: 25367475.

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