

Sleep apnea in patients with acromegaly

Prevalence, diagnosis and risk factors

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Background

Patients with acromegaly have a 1.6-3.3-fold increased mortality rate mainly due to cardiovascular diseases and respiratory diseases. A contributing factor could be the high prevalence of sleep apnea in acromegaly.

In previous retrospective epidemiological studies the prevalence of sleep apnea in acromegaly was 11-30%. In smaller prospective studies using polysomnography, the mean prevalence was 70% in patients with biochemically active acromegaly and 40% in patients with controlled disease. This difference raises the suspicion that sleep apnea may be an underdiagnosed complication of acromegaly.

Aim

- To assess the prevalence of sleep apnea in a large national cohort of patients with acromegaly.
- To identify potential risk factors for sleep apnea and investigate if sleep apnea is associated with cardiovascular disease in patients with acromegaly.



Method

260 patients with acromegaly (diagnosed 1991-) from all seven University Hospitals in Sweden were included.

Dates for acromegaly diagnosis and treatments were collected from the Swedish Pituitary Registry.

At a single outpatient visit a questionnaire regarding previous diagnosis and treatment for sleep apnea, smoking and cardiovascular diseases was completed. Anthropometric data and S-IGF-1 were collected.

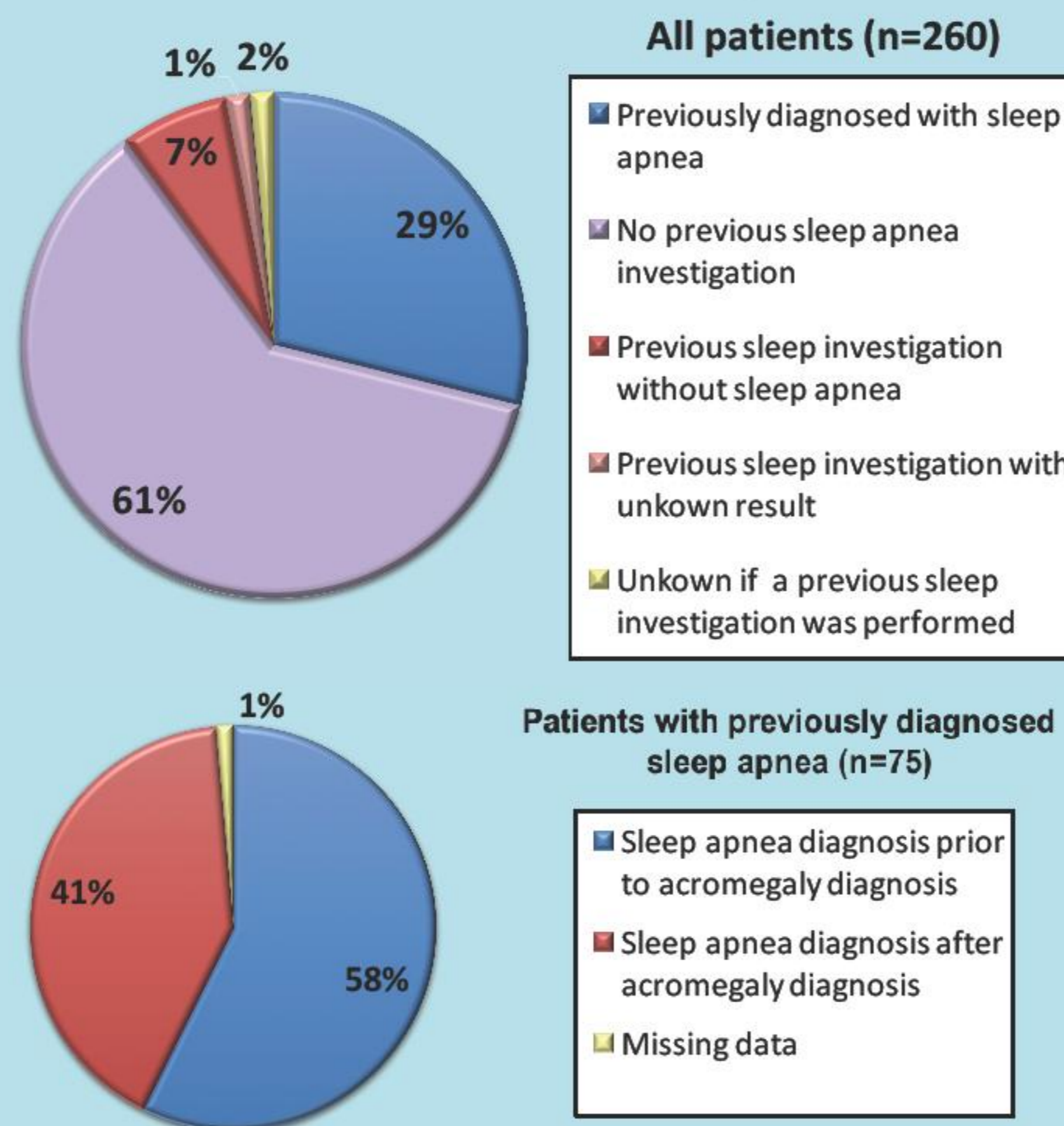
Daytime sleepiness was assessed by the Epworth Sleepiness Scale (ESS), a self-rating of the probability to fall asleep in 8 different situations. <http://epworthsleepinessscale.com>

Patients with clinical suspicion of sleep apnea (ESS, questionnaire or clinical judgement) were referred for an overnight sleep study at a local sleep laboratory and the results were analysed by a specialist in sleep medicine.

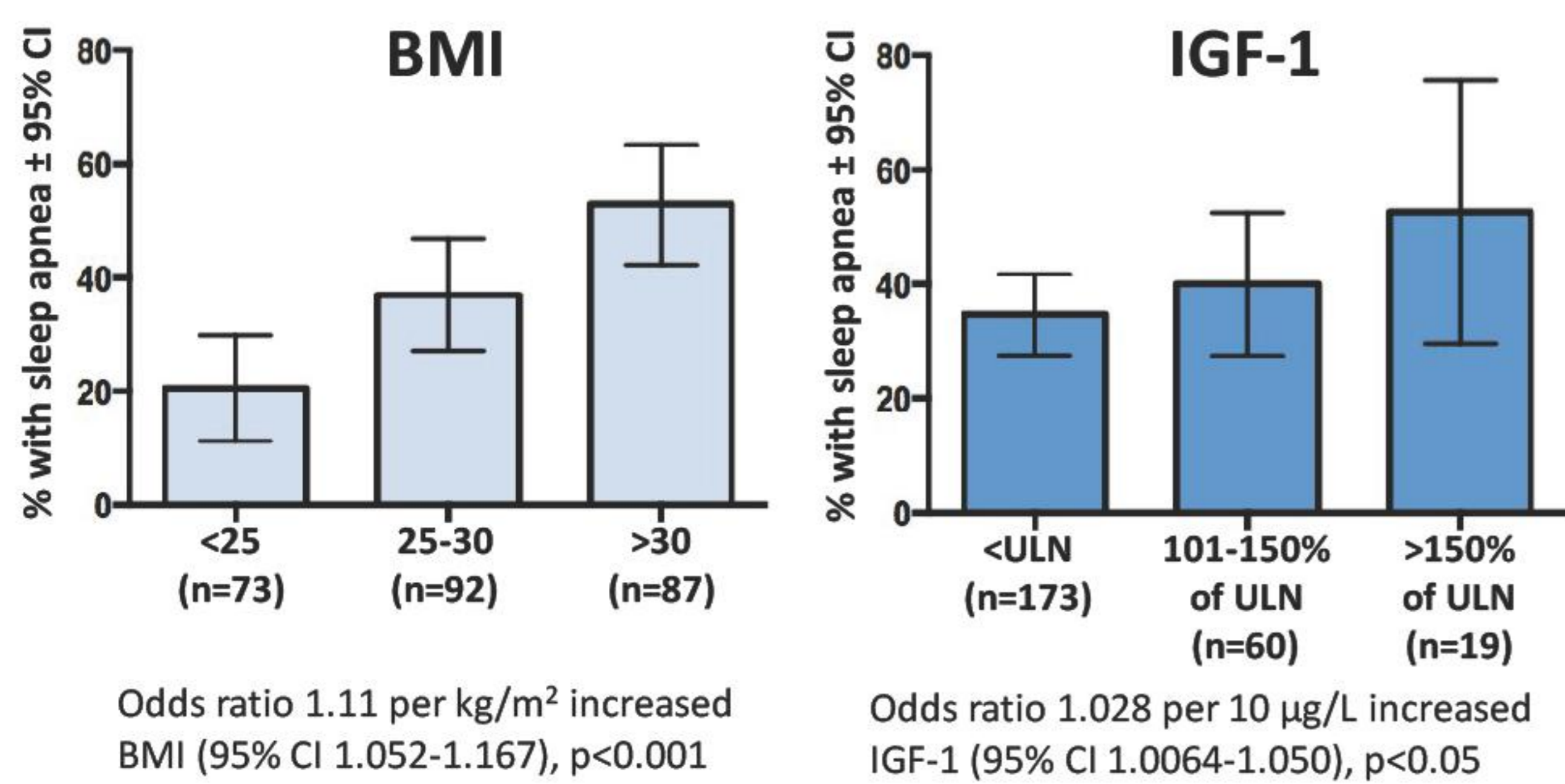
Patient characteristics

Female/male (n)	128/132
Age at acromegaly diagnosis (years) mean ± SD (range)	48,1 ± 13,0 (19-80)
Pituitary surgery	89%
Pituitary radiotherapy	18%
Ongoing medical treatment	31%
Age at study (years) mean ± SD (range)	57,1 ± 13,4 (19-87)
IGF-1 ≤ Upper limit of normal (ULN)	69%
Smokers	16%
BMI <25	29%
BMI 25-30	38%
BMI >30	34%

Prevalence of sleep apnea in acromegaly



Risk factors for sleep apnea in acromegaly



✓ Age, gender and smoking were not found to be significantly associated with increased risk for sleep apnea.

Prevalence of cardiovascular disease

Cardiovascular disease	Sleep apnea n=95	No sleep apnea n=158
Previous myocardial infarction	1,1%	1,3%
Previous stroke/ TIA	3,2%	7%
Treatment for angina	1,1%	0,6%
Treatment for heart failure	0%	1,9%
Treatment for hypertension	52,6%	46,2%
Treatment for diabetes	8,4%	8,3%

N.S. for all variabls (Chi-square test).

Conclusions

- ✓ Sleep apnea is common in acromegaly, occurring in at least 37% in this study.
- ✓ Sleep apnea was often already diagnosed (29%), but sleep apnea investigations in high risk patients revealed another 8% with undiagnosed sleep apnea.
- ✓ A large proportion of sleep apnea in acromegaly (58%) was diagnosed prior to acromegaly diagnosis.
- ✓ All patients with acromegaly should be evaluated for sleep apnea, particularly in cases with high BMI and IGF-1.