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Compliance during continuous positive airway pressure therapy in obstructive sleep apnea syndrome: still looking for new factors

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Adherence to continuous positive airway pressure (CPAP) treatment for obstructive sleep apnea (OSA) is an unresolved question. Poor compliance to CPAP is a relevant limiting factor in treating OSA (1).

Upper airway anatomy plays a role in compromising upper airway patency in patients with OSA (2). In this scenario, multilevel potential anatomic obstruction is often present with a complex number of pathophysiological mechanisms that may improve CPAP compliance (2). However, correlation between the degree of obstruction and OSA is an open debate.

Uyar M et al. analyzed factors influencing compliance rates in OSA and reported that satisfaction about the device use was one of them. However, one interesting finding is that upper airway morphology measured with C2 vertebrae level and narrowest airway passage has no impact on treatment compliance (3).

There are possible key factors that may differentiate compliance that could be underlined.

First, compliance in patients with OSA could be explained based on the type of population selected. The overall profiles of population, as can be seen, have an index of severity, age, and obesity not much higher than previous series, so that could partly explain the absence of associations, as described by the authors. Second, the lack of significance for the degree of reduction of the diameter of the airway and its relationship to the C2, could be explained on the basis that there are different levels of obstruction in OSA which have more influence in determining the type of OSA (1). The narrowest place was found to be in the oropharynx with an extension to the hypopharynx (4). Additionally, it is not as clear whether a single projection or two are ideal in these situations. Other possible projection is the addition of postero-anterior graphy to the lateral could improve this evaluation (5). This is an aspect to be considered for proper evaluation in further studies.

Third, obesity is a relevant factor with cephalometric abnormalities and the etiology of OSA in obese patients may be different from that in non-obese patients (6). In obese patients, upper airway soft tissue enlargement may play a more important role in the development of OSA, whereas in non-obese patients, bony structure discrepancies may be the dominant contributing factor for OSA. This is an important point that helps to understand these results. However, it is still a matter of open discussion how cephalometric methods may reflect upper airway size and correlation with the severity of OSA. Measurement of body mass index

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(BMI) and obesity in this study population is not too high (BMI ≥ 30 kg/m^2 compared other groups, which could indicate variations in the results. Equal differences in upper airway size measurements between obese and non-obese subjects are not independent of bony craniofacial structure. Obese OSA patients have more abnormalities in the upper airway soft tissue morphology, head posture and position of the hyoid bone (7). A secondary issue is the similarity of the skeletal craniofacial structure in both obese and non-obese subjects. In this sense, postero-anterior cephalometry complementary to the lateral cephalometry may improve the reliability of the results of this studies. Finally, there are lack information about quality of life (8).

We believe that compliance in patients with OSA remains a highly complex issue, where interaction of relevant factors such as anatomical information and pulmonary functional parameters play an important role and need to be studied.

CONFLICT of INTEREST

None declared.

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