



Original Article

Endorsement of: “treatment of adult obstructive sleep apnea with positive airway pressure: an American academy of Sleep Medicine Clinical Practice Guideline” by World Sleep Society



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ABSTRACT

Guidelines for the evaluation and management of sleep disorders from national societies provide recommendations that may be regionally appropriate but may not always be practical or relevant in other parts of the world. A task force of experts from the World Sleep Society's (WSS) International Sleep Medicine Guidelines Committee and Sleep and Breathing Disorders Taskforce reviewed the American Academy of Sleep Medicine's Clinical Practice Guideline on the Treatment of Adult Obstructive Sleep Apnea (OSA) with Positive Airway Pressure with respect to its relevance and applicability to the practice of sleep medicine by sleep specialists in various regions of the world. To improve the evaluation of the guideline, surveys were sent by the senior author and the WSS to approximately 800 sleep doctors around the world to query the availability of OSA treatments in their respective region. The task force and the WSS guidelines committee endorsed the AASM's CPAP guidelines with respect to the indications for PAP therapy, utilization of different PAP modalities, and concurrent strategies to improve outcomes, noting appropriate caveats for universal applicability.

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1. Introduction

Treatment of Adult Obstructive Sleep Apnea with Positive Airway Pressure: An American Academy of Sleep Medicine Clinical Practice Guideline [1] was selected for review by the World Sleep Society (WSS) Sleep and Breathing Disorder Group B Taskforce and the WSS International Sleep Medicine Guidelines Committee. The scope of this guideline covers practice recommendations specifically for the treatment of adult obstructive sleep apnea (OSA) with positive airway pressure (PAP). In the guidelines paper, six experts from the USA and Canada conducted a systematic review, and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) process was used to assess the evidence. This review also

adopted recommendations from prior guidelines as “good practice statements”. The objective of this review was to determine the effectiveness of PAP, alternative PAP modes, and concurrent strategies to improve outcomes by enhancing acceptance and use of PAP for OSA treatment.

A task force of content experts from the WSS has reviewed this guideline specifically for its relevance and applicability to the practice of sleep medicine by sleep specialists that comprise its membership.

2. Methods

Following review of the guideline by the WSS Sleep and Breathing Disorder Group B Task Force, this position statement was developed, which was submitted for review and comment to the WSS International Sleep Medicine Guidelines Committee and then to the WSS Governing Council.

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The WSS Task Force made significant efforts to check the availability of management options described in the guideline within all geographic regions included in the WSS membership. A survey was sent by email to the active membership of the World Sleep Society, which included 537 individuals internationally. This survey sought to identify local availability and coverage by national and private insurers for attended sleep studies, unattended home sleep studies, and PAP treatment. The recipients were encouraged to provide comments, as appropriate. Responses were received from 39 countries and provided in the reference [2].

An additional survey was sent by the senior author to about 250 colleagues in his network, mostly sleep surgeons from Argentina, Australia, Belgium, Brazil, Chile, Colombia, Ecuador, Egypt, France, Germany, India, Israel, Italy, Korea, Mexico, the Netherlands, Panama, Peru, Poland, Portugal, Singapore, Slovenia, Spain, Taiwan, Turkey, United Kingdom, and the USA. Colleagues were queried about coverage by national and private insurers for attended sleep studies, unattended home sleep studies, and PAP treatment. The recipients were encouraged to provide comments, as appropriate. Responses were received from 22 countries and provided in the reference [2].

The current endorsement's geographic applicability is limited to the responses in the survey [2].

3. Recommendations

“Good practice statements” from the AASM guideline.

1. *“Treatment of OSA with PAP therapy should be based on a diagnosis of OSA established using objective sleep apnea testing.”*
2. *“Adequate follow-up, including troubleshooting and monitoring of objective efficacy and usage data to ensure adequate treatment and adherence, should occur following PAP therapy initiation and during treatment of OSA.”*

3.1. The WSS supports statement 1

3.1.1. Comments

In some countries where access to polysomnography or multi-channel sleep apnea testing may be limited or costly, one may consider oximetry testing (level 4 study) to support the clinical diagnosis [3]. Oximetry testing, however, may underestimate the severity or fail to diagnose OSA [4].

There is also the option of empiric PAP treatment in patients with high probability of OSA [5], especially in locations where access to sleep testing is very limited. However, without objective confirmation of OSA, follow-up with assessment of good response to treatment is absolutely needed. Clinical examination alone is not as sensitive or specific as objective sleep apnea testing for OSA diagnosis, and lifelong treatment of OSA may have major economic and social consequences [6].

3.2. The WSS supports statement 2

3.2.1. Comments

Objective monitoring is recommended, as patients may overestimate their use of PAP and/or may be inadequately treated. The benefit of PAP for treatment of excessive sleepiness and cardiovascular outcome appears to be proportional to duration of use [7,8].

In some countries, however, resources and availability may affect this recommendation. If objective monitoring via data download from the PAP device is not possible or problematic

financially or logistically, then subjective evaluation of usage and symptom resolution with follow-up is recommended. Clinical follow up is also beneficial to fully optimize sleep quality and duration beyond OSA management [9].

The committee also recognizes that the AHI is an imperfect metric to diagnose and stage OSA [10], thus adequate follow-up is crucial to confirm the diagnosis and clinical benefit.

3.3. Recommendations from the AASM guideline

1. *“We recommend that clinicians use PAP, compared to no therapy, to treat OSA in adults with excessive sleepiness (STRONG)”*

3.4. The WSS supports recommendation 1

3.4.1. Comments

Obstructive sleep apnea treatment using PAP is recommended as compared with no treatment in sleepy patients, given potential harm and effect on quality of life. Sleepiness also appears to be an adverse medical prognostic factor for OSA patients [11]. As PAP is a safe and effective treatment for OSA, we support this recommendation where available, accessible, and affordable.

3.4.2. Caveat

In some countries, PAP is not covered, covered partially or unavailable to much of the general public. For example, at present, PAP is not a standard covered therapy in Argentina, Bangladesh, Brazil, Bulgaria, Chile, India, Iran, Nigeria, the Philippines, Romania, Russia, Sri Lanka, Taiwan, Thailand, Venezuela, and Vietnam [2].

2. *“We suggest that clinicians use PAP, compared to no therapy, to treat OSA in adults with impaired sleep-related quality of life (CONDITIONAL)”*

3.5. The WSS supports recommendation 2

3.5.1. Comments

Although there is some conflicting data in the literature regarding global quality of life improvement, sleep-related quality of life as assessed by patient-reported outcomes using FOSQ (Functional Outcomes of Sleep Questionnaire) and SAQLI (Sleep Apnea Quality of Sleep Index) have been shown to improve with PAP therapy [1,6,12,13].

Pending access, affordability and coverage, this recommendation is supported.

3. *“We suggest that clinicians use PAP, compared to no therapy, to treat OSA in adults with comorbid hypertension (CONDITIONAL)”*

3.6. The WSS supports recommendation 3

3.6.1. Comments

The committee agrees that PAP therapy provides cardiovascular benefit. Use of PAP for Cardiovascular benefit is also recommended by cardiological societies such as the American Heart Association [14,15]. The clinical benefit of PAP in patients with comorbid cardiovascular diseases including hypertension is supported by many observational studies [1,14,16–18] but not well supported by RCTs. The questionable benefit in RCTs may be related to methodological problems including recruitment of non-sleepy patients, insufficient PAP use, reliance on the AHI as the disease metric and other issues [7,19].

3.6.2. Caveats

The reduction in blood pressure (BP) for OSA patients may be small or not clinically significant for some patients but a subset of hypertensives may derive significant benefit. For example, those with treatment-resistant hypertension may experience greater reduction in blood pressure [20]. In countries where the knowledge base between OSA and BP is not well-known, a simplified explanation may be required from the physician to explain how high BP may be affected by OSA and that PAP treatment may help control the high BP and that PAP or other treatment may be required for life. Some patients may not be convinced and refuse this treatment option in parts of the world, and that should not be an unexpected response.

4. “We recommend that PAP therapy be initiated using either APAP at home or in-laboratory PAP titration in adults with OSA and no significant comorbidities (STRONG)”

3.7. The WSS supports recommendation 4

3.7.1. Comments

Current, auto-adjusting PAP devices (APAP) utilizing up-to-date algorithms are a good option for OSA.

It is recommended to educate patients that PAP setting will vary greatly between patients and therefore must be accurately determined in lab or by verification of data obtained from the APAP device. It would also be of benefit to explain that pressure requirements may change with weight loss or gain, sleep position, alcohol or sedative intake [21]. For patients who underwent conservative uvulopalatopharyngoplasty, where extensive tissue resection is not performed, APAP may be used and an attended PAP titration is not required, as a clinically significant leak is unlikely [22,23].

3.7.2. Caveats

Access to APAP devices may be a problem, as they are not always available or affordable in different countries.

While we support initiation of PAP therapy using APAP in the patient without complex comorbid conditions, it should be noted that patients with complex neuromuscular disorders, complex pulmonary disease, congestive heart failure and additional comorbidities are not appropriate candidates [24].

5. “We recommend that clinicians use either CPAP or APAP for ongoing treatment of OSA in adults (STRONG)”

3.8. The WSS supports recommendation 5

3.8.1. Comments

As both options may not be available in all regions of the world, and when both are available there may be a significant difference in cost, the patient should be reassured that both options are as effective in ongoing treatment of OSA in adults. While auto-adjusting devices may be more costly in some regions, access and cost of PAP titration may be limited or costly as well.

6. “We suggest that clinicians use CPAP or APAP over BPAP (bilevel PAP) in the routine treatment of OSA in adults (CONDITIONAL)”

3.9. The WSS supports recommendation 6

3.9.1. Comments

Recommendation is limited to the initial treatment using PAP. Bilevel (BPAP) or auto-PAP (APAP) devices may not be available or may not be affordable in certain countries. There is no harm in using BPAP

other than potential higher cost and incorrect pressure settings. BPAP may be offered after failed adherence to CPAP or APAP in some patients, especially those who need high pressure or those with underlying pulmonary, hypoventilation, or neuromuscular conditions [25].

7. “We recommend that educational interventions be given with initiation of PAP therapy in adults with OSA (STRONG)”

3.10. The WSS supports recommendation 7

3.10.1. Comments

The authors acknowledge the relevance of CPAP treatment adherence, and several factors might be addressed to access optimal CPAP use [26]. With better understanding of PAP therapy, the patient may become more empowered and motivated to treat his or her OSA. Education of bedpartner and family members, when possible, can also be of benefit to support and improve treatment adherence.

Educational resources for PAP are available online from multiple patient advocacy organizations. For region-specific educational resources, the committee recommends contacting the local sleep society for assistance. A list of sleep societies in various countries is available from the World Sleep Society at worldsleepsociety.org.

8. “We suggest that behavioral and/or troubleshooting interventions be given during the initial period of PAP therapy in adults with OSA (CONDITIONAL)”

3.11. The WSS supports recommendation 8

3.11.1. Caveat

While WSS supports this recommendation, the caveat is that limitations may be present due to the patient’s level of education, disease-awareness, resource availability and accessibility. Behavioral interventions are still unfamiliar or unavailable in some regions of the world. Physician access may be limited for troubleshooting PAP problems. When resources are limited, simple telephone follow-ups can be beneficial and, in some cases, more straightforward [27]. The patient may appreciate the personal attention and would be more motivated to continue treatment.

For behavioral interventions in regions where in-person cognitive behavioral therapy is inaccessible, digital resources may be available including web sites or smart phone apps. Web based access to a PAP device’s data may also be a useful tool for patient motivation and appropriate treatment [28].

9. “We suggest that clinicians use telemonitoring-guided interventions during the initial period of PAP therapy in adults with OSA (CONDITIONAL)”

3.12. WSS supports recommendation 9

3.12.1. Comments

While telemedicine and teletherapy have become more standard during the COVID-19 pandemic, they are not universally available. The type and manner of telemedicine vary in different countries depending on social norms and telemonitoring access. This intervention is dependent on both the physician and the patient having means to an advanced communication system, which is not the common situation in certain geographical regions.

The committee also recommends that the “initial period”, and especially the first month, is critical for proper adaption. The appropriate initial follow-up should be for one year, and some patients may need longer to fully accommodate [27,29–32].

4. Geographic regions included in these recommendations

The adherence to the nine items above is inclusive of all regions. This could include all continents with the caveats of accessibility stated above [2].

5. Conclusion

The WSS Governing Council hereby endorses this guideline [1] with comments and caveats described above as relevant and applicable to the sleep medicine practices of its members within the geographic regions listed above. The committee recognizes the scope of the paper did not address other aspects related to adherence, including type of interface and other factors.

Conflict of interest

No conflicts to declare.

The ICMJE Uniform Disclosure Form for Potential Conflicts of Interest associated with this article can be viewed by clicking on the following link: Supplementary data to this article can be found online at Supplementary data to this article can be found online at <https://doi.org/10.1016/j.sleep.2021.10.007>.

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