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COVID-19: Preliminary recommendations from the SFORL

Treatment of sleep apnea by ENT specialists during the COVID-19 pandemic

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ABSTRACT

The treatment of sleep disorders has been strongly impacted by the COVID-19 pandemic. When the lockdown is over, resumption of usual patient care will require precautions to limit the risk of contamination for patients and caregivers. In this document, the French Association of Otorhinolaryngology and Sleep disorders (AFSORL) and the French Society of Otorhinolaryngology (SFORL) put forward a summary of the measures for continuing the treatment of sleep apnoea syndrome in these new practice conditions. Emphasis is placed on teleconsultation, methods of nocturnal sleep studies, the conditions for treatment by continuous positive airway pressure (CPAP) ventilation, and the postponement of more invasive treatments.

1. Introduction

The implementation of lockdown measures and the massive surge in patients suffering from serious forms of COVID-19 infections has led to a reorganisation of healthcare in many countries around the world. The focus has shifted to emergency treatment and the postponement of non-priority treatments. If Obstructive Sleep Apnea syndrome (OSAS) is not considered to be an immediately life-threatening pathology, its consequences can be serious, especially in the presence of specific comorbidities or high-risk occupations. Considering the high prevalence of sleep-disordered breathing in the general population, the structures dedicated to the care of patients with OSAS are likely to be rapidly overwhelmed once the lockdown measures are lifted.

In their latest recommendations regarding this period of the pandemic, the French Regional Health Agencies (ARS) have advocated for a progressive resumption of screening and diagnosis activities in order to avoid any delay in treatment. These recommendations apply to sleep apnoea syndrome, among others. AFSORL and SFORL created this document to provide a practical framework for ENT specialists to allow them to continue treating patients suffering from sleep disorders after the end of the lockdown. The principles on which it is based are the continuation of treatment, prioritising treatment according to severity criteria, and the protection of patients and caregivers from possible viral transmission. These recommendations apply to the period of general public containment. They may be modified according to the evolution of pandemic situation and lockdown rules, depending on geographical area and human or material resource of the health structures.

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2. Initial diagnosis

Teleconsultation by phone or dedicated video platform is preferred for an initial consultation concerning sleep disorders. The patient can prepare for this consultation by filling out online or paper questionnaires sent to them beforehand. The clinical examination can be conducted after the sleep recording, except where the consultation raises suspicion of a differential diagnosis whose treatment would require a rapid management (tumour of the upper airways). In this case, prevention measures must be applied: appropriate personal protective equipment, fitting out the practice and waiting room, disinfection after every patient.

The indication and the arrangements for sleep recording depend on the resources available to the practitioner. In the absence of severe symptoms, the sleep recording can be postponed. These severe symptoms are excessive daytime sleepiness with significant risks of accident for a patient in a high-risk occupation (professional driver, machine operator, etc.), existence of comorbidities of which OSA threatens to exacerbate the consequences if not treated, particularly in patients with cardiovascular comorbidity (treatment-resistant hypertension, recurrent atrial fibrillation, symptomatic cardiac insufficiency with reduced or maintained left ventricular ejection fraction, high-risk coronary disease, previous cerebrovascular event) or with severe respiratory diseases such as chronic obstructive pulmonary disease or poorly-controlled asthma. Recording at home is preferred to recording in a hospitalisation or sleep laboratory setting. The preferred option is for the patients to avoid leaving their home for the installation and return of the equipment. If possible, a respiratory polygraph is preferred with regard to polysomnography due to its shorter installation time, limiting the contact between the installer and the patient, and its smaller number of sensors, limiting the risk of contact contamination. Single-use sensors should be used. The handover and installation of the equipment can be carried out in the office, at a time when the patient will be the only person there. Alternatively, the material can be delivered by post to the patient's home, with an installation carried out by the physician, by his technician or by the patient himself with the help of precise written instructions and the practitioner's assistance, in person or by video.

The recording start time must be programmed beforehand, except for the equipment requiring calibration once the sensors are placed on the patient. The patient is advised to wash their hands well when setting up the equipment and putting it on and taking it off. The equipment must be placed in a plastic bag that can be sealed. The patient should wash their hands after handling this bag. The equipment can be returned to the office, at a time when the patient will be the only person there or can be sent by post. The cleaning of the equipment must comply with the guidelines issued by the health services. According to the American Association of Sleep Medicine, it is recommended that this equipment not be reused until 72 hours after disinfection (https://aasm.org/covid-19-resources/covid-19-mitigation-strategies-sleep-clinics-labs). These arrangements may change if the polygraph manufacturers can ensure the polygraph's safety for reuse within a shorter timeframe and present an appropriate disinfection protocol.

The conduct of the clinical examination before the initiation of treatment of a patient suffering from OSA must be delayed in the absence of severe symptoms. If the treatment must be implemented rapidly, this examination will be conducted with the strengthened protection measures laid out in the recommendations issued by the French Society of Otorhinolaryngology (SFORL) [1].

3. Treatment

There is no indication to treat patients suffering from simple snoring during the COVID-19 pandemic. Sleep endoscopy under sedation is not advised during the COVID-19 pandemic as it generally applies to patients presenting with mild to moderate OSAS and asking for surgery. It is possible to implement treatment with a mandibular advancement device (MAD) during the COVID-19 pandemic. The manufacture of custom-made devices can be carried out only if all the specialists involved in the patient's care pathway remain active (ENT or manducatory apparatus specialist, dentist, transporter, prosthetist, etc.) and if all the necessary equipment and materials remain available. The taking of dental impressions must comply with appropriate hygiene conditions (wearing a mask, visor, hair cap, and gloves for the practitioner, while following the manufacturer's disinfection protocol). A solution using a thermoformable devices handled only by the patient may be suggested as an alternative during this period to reduce the risks of viral transmission. The monitoring of devices already in place can be done by teleconsultation. Additional titration may be performed in the medical practice without getting too close to the patient's face and mouth and while complying with the appropriate hygiene measures, or by the patient themselves under professional supervision via telemedicine.

The place of surgery in the treatment of OSAS depends on the procedure suggested. It is recommended to postpone nasal surgery procedures (septoplasty, septorhinoplasty) as well as palatopharyngoplasties. SFORL recommends tonsillectomies in the event of OSAS with a Friedman score of I (Mallampati score 1 or 2, tonsil size grade 4 or 3), without prior endoscopy and without any special technical adaptation [2]. Regarding postoperative monitoring, it is recommended to monitor the patients for one night in an intermediate care unit (IMCU). The majority of IMCU have been requisitioned for treating COVID-19+ patients. Any surgery must comply with the hygiene and caregiver protection rules put forward by SFORL [2]. The patient's COVID status must be determined before the procedure. If surgery was eventually avoided, the benefit/risk ratio between the initiation of symptomatic treatment with CPAP, with possible risks of domestic contaminations, and no therapy, is to be discussed on a case by case basis.

It is not advised to initiate a myofunctional therapy for OSAS in the current context of COVID-19 pandemic. Thus, the International Society of Oral, Facial and Lingual Physical Therapy has recommended the closure of physical therapy practices and stated that this type of treatments is not a priority during the current epidemic, as they generally apply to mild forms of OSAS (https://siklomf.fr/). However, a decree issued by the French government on April, 16, 2020, allows for rehabilitation exercises via teleconsultation, including those for the rehabilitation of respiratory diseases (obstructive, restrictive or mixed) and of maxillofacial disorders apart from facial paralysis (https://www.service-public.fr/particuliers/actualites/A14018).

In all cases and particularly for patients presenting with a mild or moderate OSAS whose treatment by surgery, MAD or CPAP must be postponed until after the pandemic, additional non-invasive treatments may be proposed, and individual health practices should be recommended, such as positional therapy in the event of positional OSAS, weight loss, limiting the consumption of alcohol and the use of sedatives, medical treatment of nasal obstruction (https://aasm.org/covid-19-resources/covid-19-mitigation-strategies-sleep-clinics-labs). Patients with daytime sleepiness should also be advised to avoid high-risk activities such as car-driving or activities with significant risks of accident.

There is currently no scientific data regarding the dangers of CPAP therapy in the current context of COVID-19 pandemic. However, the intentional air leaks around the mask and the high positive

air flows delivered by the machine may contribute to spreading SARS-CoV-2 in the patient's environment and exposing those close to them. Opinions regarding indications and modalities of CPAP therapy during the current pandemic were not consensual [3,4]. Therefore, on March, 19, 2020, the French Language Respiratory Society (SPLF) issued national recommendations on this subject (http://splf.fr/wp-content/uploads/2020/03/Apnee-du-sommeil-COVID_19-190320.pdf). According to those, CPAP treatment should be limited to severe forms of OSAS in the current context of COVID-19 pandemic. This treatment should be done at home as often as possible through a service provider in compliance with the protective rules. Any patient, even asymptomatic, should be considered as possibly infected with SARS-CoV-2 and contagious. Additionally, even in the rare cases where a patient had a negative PCR testing just before the initiation of CPAP therapy, there is no guarantee that he will not become infected while he or she is still on this treatment. Thus, the same precautions should apply to all patients. Due to the risk of aerosolization, in-laboratory, initiation of CPAP or split-night study are not advised. Explanations for putting on and adjusting the mask can be given while staying at a distance of at least one meter from the patient, or through explanatory videos if necessary. Telemonitoring is preferred for the initial set-up, with additional equipment sent by post and explanations given by phone or video after it has been received. The CPAP machine should not be used near the patient's family or friends. If possible, he or she should remain alone in the bedroom where the CPAP treatment is performed. If it impossible for the spouse or partner to sleep in a separate room and especially if he or she suffers from comorbidities at risk of severe complications from COVID-19, a temporary discontinuation of the treatment might be discussed with the physician in charge of the OSAS treatment. The equipment must be cleaned as per the standard procedures laid out by the manufacturers. The bedroom's surfaces must be cleaned and ventilated by opening windows regularly. The patient must wash their hands before and after handling the equipment, and every time they return to and leave their bedroom. In patients infected with SARS-CoV-2, coughing can make the CPAP machine difficult to tolerate. Additionally, once their symptoms have disappeared, the CPAP machine must be sealed in a plastic bag for 3 days before being reused. The machine must be carefully cleaned to ensure the absence of any live virus and a new tubing and new mask must be used (request these from the service provider). A recent study demonstrated the persistence of the virus on plastic up to 72 hours after its application [5]. In the event of a confirmed or suspected COVID-19 infection in a hospitalised patient, CPAP therapy should be discontinued while awaiting the COVID-19 diagnostic test results. If the infection is confirmed, before resuming the treatment, the CPAP mask and tubing should be modified following the recommendations issued by the "Ventilation and oxygen therapy" (GAV) task force of SPLF (http://splf.fr/wp-content/uploads/2020/04/LES-PROCEDURES-DU-GAVO2-ProtectionVirale2020-MAJ02avril2020.pdf). If it is impossible to follow these recommendations, discontinuing the treatment during the epidemic might be necessary.

4. Monitoring

Teleconsultation monitoring is advised for all modes of treatment, facilitated by service provider and/or manufacturer websites for CPAP treatment. Sleep studies to control the efficiency of newly installed MAD must be delayed until the end of the pandemic. Monitoring will focused primarily on clinical symptoms during this period (daytime sleepiness, sleep quality, snoring, arousals).

Disclosure of interest

The authors declare that they have no competing interest.

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