4th of 5 blogs over the next week, looking at Central Sleep Apnoea and the guidelines and recommendations into identifying and reporting of CSA.

4. Hypothetically -what may need to be put in place if new consensus / guidelines are adopted by Sleep Medicine Societies

In a previous article we discussed the French consensus on central sleep apnea and hypopnea syndrome (SAHCS) in adults. Part 1: Definitions and Diagnostic Modalities - ScienceDirect [1].

If these recommendations are adopted by International Sleep Medicine societies, then there will be implications for how Sleep Medicine Services diagnose and treat Sleep Apnoea Syndrome and formally report both OSA and CSA.

Let's start with their Definition of Hypopnoea:

Recommendation 7

100% of respondents to the consensus survey agreed that since the majority of clinical studies use the definitions recommended by the AASM, it is recommended to use the following definition of hypopnea, proposed by the AASM in 2012:

– ≥30% decrease in nasobuccal airflow signal for at least 10 seconds

– Associated with ≥ 3% desaturation or arousal

Recommendation 21

87.55% of the survey respondents agreed that ventilation devices censoring centrally shaped events and/or reports censoring central hypopneas should not be used in patients with central events on the initial diagnostic test.

This particular recommendation has implications for some CPAP devices whose algorithms do not report on residual central hypopneas. It is known that not all manufactures of CPAP devices algorithms are the same as has been reported in this recent publication by Midlet et al 2021 - Titled Apnea-hypopnea index supplied by CPAP devices: time for standardization?

This publication examines the issue of variation in the reported apnea-hypopnea index (AHI) among different CPAP device brands for obstructive sleep apnea patients [2].

The key points are:

1. CPAP devices from different manufacturers use proprietary algorithms to detect and classify residual respiratory events to measure the AHI, leading to potential differences in reported AHI for the same patient.

2. The study analysed 69 patients who changed CPAP brands during treatment, comparing their residual AHI before and after the brand change.

3. A statistically significant difference in reported residual AHI was found between CPAP brands, with one brand consistently reporting lower AHI values compared to the three other brands included in the study.

4. While the median difference was small for the overall population, clinically relevant differences (>5 events/hour) occurred in 6.6% of patients after switching brands.

5. The authors suggest standardisation of AHI reporting by CPAP manufacturers using consensus event definitions and algorithms to avoid potential clinical misinterpretation when patients change devices.

This is likely to be problematic for Sleep medicine services where their CPAP device software algorithms do not report residual central hypopnoeic events. As the numbers of patients in this study were small, further research may be warranted in a larger population to substantiate these findings.

Recommendation 22

93.75% of respondents were in favour that since the central or obstructive characterisation of events by CPAP is imperfect, especially for hypopneas, it is recommended to validate the nature of residual events with persistent CPAP by polygraphy or polysomnography.

One manufacture in combination with their therapy device allows measurement of polygraphic treatment efficacy as well as home titration under polygraphy. The recovery and analysis of the signals stored on the SD card of the CPAP device is performed by the PC desktop analysis software and can be viewed all in the same software.

1. Launois-Rollinat S, Gentina T, Meslier N, Portel L, Priou P, Gagnadoux F, Jaffuel D. French consensus on central sleep apnea and hypopnea syndrome (SAHCS) in adults. Part 1: Definitions and Diagnostic Modalities - ScienceDirect. https://doi.org/10.1016/j.msom.2023.12.188

2. Midelet A, Borel JC, Tamisier R, Le Hy R, Schaeffer MC, Dalek N, Pépin JL, Bailly S. Apnoea-hypopnea index supplied by CPAP devices: time for standardization?. Sleep Medicine. 2021 May 1;81:120-2.