A Systematic Review of Polysomnographic Metrics Used to Predict Positive Airway Pressure (PAP) Therapy Adherence in Patients with Obstructive Sleep Apnoea or Comorbid Obstructive Sleep Apnoea and Insomnia

Obstructive Sleep Apnoea (OSA) is a sleep disorder increasingly recognized as having multiple non-anatomical causes in addition to airway obstruction. Continuous positive airway pressure (CPAP) devices which splint open the obstructed airway remain the gold standard and first line treatment for OSA. CPAP treatment has poor levels of adherence which are in part due to the lack of recognition of other causes besides upper airway dysfunction, and mechanisms that exacerbate the impact of OSA such as fragmented sleep and insomnia.

The overnight diagnostic polysomnogram offers a wealth of information that has largely been ignored in treatment recommendations beyond the severity of OSA. Using additional polysomnographically derived data to identify phenotypes of OSA encourages the consideration of options for treatment instead of or in addition to CPAP therapy. New metrics derived from polysomnogram are showing promise regarding depth of sleep and insomnia which influence the adoption and long-term use of CPAP. Using these new and existing sleep diagnostic parameters to predict treatment outcomes would lead to personalised approaches to treatment of OSA which may improve long term adherence to CPAP.

This review investigates which parameters from diagnostic polysomnogram have been shown to be predictive of CPAP adherence in patients with obstructive sleep apnea or comorbid sleep apnoea and insomnia (COMISA).

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Poster Presentation for June 19th 2024