

## AB006. Derived arterial stiffness in OSAS with persistent sleepiness on CPAP and periodic limb movement

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**Background:** Untreated obstructive sleep apnea (OSAS) is associated with increased arterial stiffness and increased cardiovascular risk. The effect of the continuous positive airway pressure (CPAP) in improving the derived arterial stiffness, in sleep apnea patients is well documented. We aimed in this work to assess the derived arterial stiffness in patients who were still sleepy on CPAP and developed periodic limb movements (PLMs).

**Methods:** In a tertiary sleep disorders center at Guy's and St Thomas Hospital, patients who had OSAS diagnosed by polysomnography, complained of persistent sleepiness on CPAP and developed increased PLMs index on follow up polysomnography were included. Measurement of the arterial stiffness index was done through the index of large artery stiffness derived from the digital volume

pulse (SIDVP). SIDVP was derived from the raw data of photoplethysmography of the nocturnal polysomnography. The measurement was averaged for 2 minutes prior to sleep initiation (baseline), on completion in the morning.

**Results:** Twelve patients were included. Nine (75%) of patients were males. Average calculated CPAP use was 6.024±1.335 hr/night. No significant difference in the BMI, Epworth Sleepiness Scale (ESS) pre- and post-CPAP was found. There was significant difference in the AHI pre- and post-CPAP. Significant difference was found in the mean SIDVP in early night measure, as well as the minimum, maximum and mean of the SIDVP measured in the early morning. SIDVP increased.

**Conclusions:** The derived arterial stiffness index increased in patients with OSAS with persistent sleepiness on CPAP, who developed PLMs. This implies the incremental effect of periodic limb movement on the arterial stiffness.

**Keywords:** Obstructive sleep apnoea (OSA); sleep-disordered breathing; parasomnia; cardiovascular risk

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