POSTER PRESENTATIONS

P001

SAFETY, TOLERABILITY, AND EFFICACY OF 1 MONTH OF ATOMOXETINE PLUS OXYBUTYNIN IN OBSTRUCTIVE SLEEP APNOEA

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Introduction: Single-night studies with noradrenergic and anti-muscarinics have recently been shown to improve upper-airway function and reduce obstructive sleep apnoea (OSA) severity. This study aimed to determine the safety, tolerability, and efficacy profile of longer-term use of different doses of the noradrenergic agent atomoxetine combined with the anti-muscarinic oxybutynin (ato-oxy) in people with OSA.
Methods: Thirty-nine people with predominantly severe OSA received either 80/5mg ato-oxy, 40/5mg ato-oxy, 40/2.5mg ato-oxy or placebo nightly for 30 days according to a double-blind, randomised, parallel design. Safety and tolerability were assessed via weekly phone calls for adverse events, vital signs and objective measures of alertness and memory. Participants completed 3 in-laboratory sleep studies (baseline, night 1 and night 30) to assess efficacy.
Results: Side effects were generally mild and consistent with the known side-effect profile of each drug alone (e.g. dose-dependent increases in dry mouth with oxybutynin). Heart rate increased by night 30 in two of the drug arms versus placebo (e.g. 80/5mg ~9 beats/min, p=0.01). Blood pressure and measures of alertness and memory did not change between conditions. AHI_4 and hypoxic burden decreased by ~50% in the 80/5mg arm on night 1 with similar magnitude reductions at night 30. ~50% of participants indicated willingness to continue taking the medication post-study.
Discussion: 1 month of nightly noradrenergic and anti-muscarinic combination therapy is generally well-tolerated with a side effect profile consistent with each agent alone. These findings also further highlight the potential to target noradrenergic and anti-muscarinic mechanisms for OSA pharmacotherapy development.

P002

TARGETED NON-CPAP COMBINATION THERAPY RESOLVES OBSTRUCTIVE SLEEP APNOEA

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Introduction: Mandibular advancement splint (MAS) therapy is an effective alternative to CPAP for many people with obstructive sleep apnoea (OSA) but ~50% have residual OSA. This study aimed to resolve OSA in these individuals by combining MAS with other targeted therapies based on OSA endotype characterisation.
Methods: Eleven people with OSA (apnoea-hypopnoea index (AHI): 35±13 events/h), not fully resolved with MAS alone (AHI>10 events/h) were recruited. Initially, OSA endotypes were assessed via a detailed physiology night. Step one of combination therapy focused on anatomical interventions including MAS plus an oral expiratory positive airway pressure valve (EPAP) and a supine-avoidance device. Participants with residual OSA (AHI>10 events/h) following the anatomical combination therapy night, were then given one or more targeted non-anatomical therapies according to endotype characterisation. This included oxygen (4L/min) to reduce unstable respiratory control (high loop gain), 10mg zolpidem to increase arousal threshold, or 80/5mg atomoxetine-oxybutynin (ato-oxy) for poor pharyngeal muscle responsiveness.
Results: OSA was successfully treated (AHI<10 events/h) in all participants with combination therapy. MAS combined with EPAP and supine-avoidance therapy resolved OSA in ~65% of participants (MAS alone vs. combination therapy: 17±4 vs. 5±3, events/h, n=7). For the remaining participants, OSA resolved with the addition of oxygen (n=2), one with 80/5mg ato-oxy and another required both oxygen and 80/5mg ato-oxy.
Discussion: Targeted combination therapy may be a viable treatment alternative for people with OSA who cannot tolerate CPAP or for those who have an incomplete therapeutic response with monotherapy.

P003

THE IMPACT OF FORCED WAKE FROM OVERNIGHT POLYSOMNOGRAPHY ON MULTIPLE SLEEP LATENCY TEST RESULTS

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Introduction: The multiple sleep latency test (MSLT) is used to diagnose disorders of hypersomnolence. Although internationally-recognised protocols do not stipulate whether patients should be woken from the preceding overnight polysomnography (PSG), many labs wake their patients for logistic reasons. This study analyses the impact on PSG and MSLT parameters of forced wake (FW) from the overnight PSG compared with unrestricted sleep (US).
Methods: 400 consecutive patients (FW=200; US=200) undergoing PSG/MSLT were included and the following parameters were compared: Epworth Sleepiness Scale (ESS), Morningness-Eveningness Questionnaire score (MEQ), PSG total sleep time (TST), wake-up time from the PSG, overall MSLT sleep latency (MSL), individual nap latencies (SLNap 1–4), number of MSLT naps with sleep-onset REM periods (#SOREMP), and percentage of MSLTs with overall MSL<8 minutes (%MSLT<8).
Results: The 2 groups were well-matched for ESS and MEQ. The FW group had more males (49% vs 39%). When compared to FW, patients with US had longer TST (+38 minutes; p=<0.0001), later wake-up time (+52 minutes; p<0.0001), longer MSL (+1.9 minutes; p=0.0049), 50% fewer #SOREMP (p=0.0224), and 16% fewer %MSLT<8 (p=0.0018). SLNap1 increased by 1.5 minutes (p=0.0623), SLNap2 increased by 2.0 minutes (p=0.0067), SLNap3 increased by 0.75minutes (p=0.0533) and SLNap4 increased by 2.5 minutes (p=0.0059).
Discussion: Allowing patients to have unrestricted sleep on the night prior to the MSLT resulted in significantly longer TST, longer sleep latencies during the MSLT, fewer SOREMP and fewer