

OP46 EFFICACY OF A MANDIBULAR ADVANCEMENT APPLIANCE IN PAEDIATRIC SLEEP DISORDERED BREATHING

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**AIMS:** Sleep disordered breathing (SDB) varies from habitual snoring to obstructive sleep apnoea and can be found in up to 10 per cent of children. Mandibular advancement splints (MAS) are a non-invasive alternative treatment to adenotonsillectomy. The efficacy of MAS is well established in adults but unclear in children. The aim of this study is to report the findings of a randomized clinical trial testing the efficacy of MAS appliance in SDB children.

**SUBJECTS AND METHOD:** The study was designed as a single-blind crossover randomized controlled trial with administration of active MAS 'Twin-Block '(TB) and a placebo MAS 'Sham MAS'. Eighteen participants ( $9.8 \pm 1.1$  years) with  $\geq 4$  snoring nights per week were enrolled and randomly assigned to either a sequence starting with TB or Sham MAS. They wore the appliances for three weeks separated by a two-week washout period. Home-based polysomnographic data was collected four times for each participant-at baseline, and after treatment with TB or Sham MAS. Supine Apnoea-Hypopnea Index (AHI) was calculated and assessed as the main outcome variable. In addition, parent's reports of snoring frequency were collected as secondary outcome.

**RESULTS:** *Ad-interim* results were obtained from five participants ( $9.9 \pm 0.7$  years). Polysomnography data showed an average baseline supine AHI of  $9.4 \pm 10.8$  events/hour. Participants showed improvement with TB as supine AHI decreased 52 per cent (from  $9.5 \pm 10.3$  to  $4.6 \pm 5.0$ ) events/hour. Conversely, supine AHI showed an increase of 14 per cent ( $10.1 \pm 11.2$  to  $11.7 \pm 9.7$ ) events/hour with Sham MAS. Parents reported less snoring when participants wore the TB MAS ( $2.6 \pm 4.2$  snoring-nights) in comparison with the Sham MAS ( $5.4 \pm 2.5$  snoring-nights).

**CONCLUSION:** The preliminary findings suggest that the use of MAS reduced both the supine AHI and frequency of snoring nights in children with SDB.