|  |
| --- |
|  |
| **ISA ISPID  Abstract Submission  Nº: 229**   |  | | --- | | Topics: **Stillbirth** | | Type: **Oral** | | **Fetal response to maternal sleep position: preliminary findings from an intervention study** | | **Warland, Jane**1; **Dorrian, Jillian**1; **Phillips, Craig**1; **Morrison, Janna**1; **Borazjani, Ali** 2; **Kember, Allan** 3; **O'Brien, Louise** 4 *1 - UniSA. 2 - Cleveland Clinic Ohio. 3 - Dalhousie University. 4 - University of Michigan.* | | **Introduction** Maternal supine sleep position has emerged as a potentially modifiable risk factor for intrauterine growth restriction and stillbirth. This project aimed to test the feasibility and effectiveness of an intervention (‘Prenabelt’) designed to discourage supine sleep and thereby modify this potential risk factor.  **Material and Methods** We monitored a cohort (n=25) of women in late pregnancy (32–38 weeks) in their own home over two nights (order counterbalanced). On both nights, an infra-red video was used to confirm sleep position (for 30-second epoch-by-epoch scoring of maternal sleep position and snoring), participants were monitored using a portable diagnostic device for obstructive sleep apnea (OSA) which records sleep/wake activity, respiratory parameters, e.g. Apnea-hypopnea index (AHI), oxygen (O2) saturation and desaturation using the Oxygen Desaturation Index (ODI: the ODI is the number of times per hour of sleep that the blood's oxygen level drops by 3 percent or more from baseline). At the same time, an ambulatory fetal monitor was used to collect continuous fetal heart rate. On the intervention night participants also wore a PrenaBelt, a maternal positional therapy device designed to reduce supine sleep time. The repeated measures design enabled comparison of participants’ sleep with and without the Prenabelt. Specifically, sleep period time, subjective sleep quality, duration of supine sleep (subjective and video-determined), and maternal O2 saturation and ODI were compared, as well as fetal heart rate decelerations (>10 BPM from baseline). Continuous dependent variables were analysed using mixed effects ANOVA with a random effect of participant on the intercept. Binary dependent variables (deceleration counts) were analysed using generalised estimating equations for count data.  **Results** On the intervention night, maternal O2 parameters were significantly improved (increased minimum O2 *P*<0.01, and decreased ODI *P*=0.02). There were significantly fewer fetal heart rate decelerations on the intervention night compared to control (*P*=0.02). Sleep duration and subjective sleep quality were not significantly different between control and intervention nights (*P*>0.05). Participants self-reported a significant reduction in supine sleep during the intervention night (*P*<0.05). Thirty percent of the participants met threshold values for mild OSA (control night AHI≥5). There was a significant group (AHI≥5/AHI<5) by night (control/intervention) interaction effect (*P*<0.05), such that for those with an AHI≥5 during the control night, AHI was significantly reduced during the intervention night (*p*<0.05). However, for those with an AHI<5, AHI was not significantly different across nights (*p*>0.05).  **Conclusions** This study provides preliminary evidence that a device, such as the Prenabelt, may be effective during late pregnancy for reducing supine sleep, and in turn, improving maternal oxygenation and reducing fetal heart rate decelerations without a significant negative impact on maternal sleep length or quality. Analyses are ongoing, and further results investigating the relationship between video-determined sleep position and maternal and fetal outcomes will be ready in time for presentation at the conference. | |  |  |  |  | | --- | --- | | **CONTACT** | | | Name: | **Jane** | | Lastname: | **Warland** | | E-mail: | **jane.warland@unisa.edu.au** | | Country: | **Australia** | | Institution | **UniSA** | | Cellphone: | **0409678172** | | City: | **Adelaide** | |