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| **ISA ISPID  Abstract Submission  Nº: 214**   |  | | --- | | Topics: **Stillbirth** | | Type: **Oral** | | **Maternal body position in late pregnancy affects fetal behavioural state and heart rate variability** | | **Stone, Peter**1; **Burgess, Wendy**1; **McIntyre, Jordan**1; **Mitchell, Edwin**1; **Thompson, John**1 *1 - University of Auckland.* | | **Introduction** **Background:** The Auckland Stillbirth Study reported that women who experienced late stillbirth (> 28weeks) were more likely to have gone to sleep supine or on their right side the night before the baby was thought to have died. Pathophysiological mechanisms which may explain the effects of maternal position on the fetus remain to be elucidated **Objectives:** To examine the effects of maternal body position on measures of fetal wellbeing in healthy 3rd trimester singleton pregnancy when awake.  **Material and Methods** Healthy pregnant women (35-38 weeks gestation, n=29) were monitored lying supine, left-lateral, right-lateral or semi-recumbent for 30 minutes each, in randomized order. Transabdominal fetal ECG recorded true beat to beat heart rate (HR) data. Fetal behavioural state (FBS) was determined from the HR patterns.  **Results** Fetuses spent the majority of their time in state 2F, followed by state 1F, with very little time in state 4F. State 4F occurred almost exclusively when the mother laid on her side (79% left-lateral and right-lateral combined). Both the standard deviation (SDNN) and root mean square of successive differences (RMSSD) of the fetal HR  were decreased when the women were in the semi-recumbent or supine positions compared with the left-lateral position. In the maternal supine position, the fetuses were more likely to be in state 1F than state 2F (adjusted OR=3.57; 95%CI=1.36, 9.39) and to change behavioural state (adjusted OR=1.80; 95%CI=1.04, 3.11). An increased HR was associated with an increased likelihood of state 1F vs state 2F, whilst an increasing SDNN and RMSSD were associated with a decreased likelihood of state 1F vs state 2F.  **Conclusions** We have demonstrated that when women lie supine when they are awake, the fetuses show an increased likelihood of a shift to quiet sleep, more frequent state changes, and consistent reductions in HR variability. These findings are consistent with the fetus changing to a lower oxygen consuming state, which may be an adaptive response to adverse effects of the supine position. | |  |  |  |  | | --- | --- | | **CONTACT** | | | Name: | **Peter** | | Lastname: | **Stone** | | E-mail: | **p.stone@auckland.ac.nz** | | Country: | **New Zealand** | | Institution | **University of Auckland** | | Cellphone: |  | | City: | **Auckland** | |