**Objective:**
To investigate whether fetal blood circulation is influenced by the maternal supine position.

**Methods:**
The inclusion criteria were good health; a singleton pregnancy; maternal age between 18 and 40 years; gestational age between 36 and 40 weeks; and an agreement to participate in the study. Each participant (N=20) was initially asked to adopt the left lateral position for 5 minutes while fetal Doppler measurements were taken of the fetal middle cerebral artery (MCA), umbilical artery (UA), and umbilical vein (UV). Subsequently, they were asked to change to the supine position for Doppler measurements at 5 and 10 min.

**Results:**
When a woman remained in the supine position for 5 min, there was a significant reduction in fetal MCA-PI (median 1.70 vs. 1.42, p=0.003). This reduction did not persist after 10 min (median 1.70 vs. 1.65 p=1.0).

**Conclusions:** Changing maternal position from the left lateral to the supine position caused a reduction in resistance in fetal MCA and no changes in UA or UV indices. However, despite the changes in cerebral circulation which occurred at 5 minutes by shifting position, they did not remain for 10 minutes. The changes may be related to reduction in maternal oxygen saturation since there was no decrease in UV blood flow.

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