Reference ranges for fetal cardio-vascular function measurement in third trimester normally grown fetuses

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Establishing normal ranges of fetal cardio-vascular function parameter during the late third trimester

Methods

- Prospective evaluation of fetal cardio-vascular function parameters in 139 non-complicated fetuses (n > 15 at each gestational week between 32 and 41) using a Samsung HS70A ultrasound machine and offline data calculation after patient visit
- Evaluation of ventricular longitudinal, transverse, wall and septal diameters, aortic and pulmonary valve diameter and aortic intima media thickness using 2D B-Mode
- Calculation of E, A, E’ and A’ velocities, aortic and pulmonary velocity time integral and acceleration and deceleration times, isovolumetric contraction and relaxation time and ejection time utilizing (tissue) Doppler imaging as well as calculation of sphericity index, cardiac output and myocardial performance index (MPI)
- Measurement of mitral and tricuspid annular plane systolic excursion (MAPSE/TAPSE) and aortic strain using M-Mode

Results

- MAPSE and TAPSE increased slightly during the late third trimester
- Myocardial performance index and aortic intima media remained quite stable, whereas aortic strain decreased slightly at the end of pregnancy

Conclusion

The study was funded by Else Kröner Fresenius Stiftung.