Discrepancy in the sonographic biometric parameters of fetal head (HC - head circumference, BPD - biparietal diameter) and femur length depending on gender and gestational age

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OBJECTIVE

To compare female and male fetuses in terms of intrauterine ultrasound growth measurements (HC - head circumference, BPD - biparietal diameter, FL - femur length) depending on gestational age.

METHODS

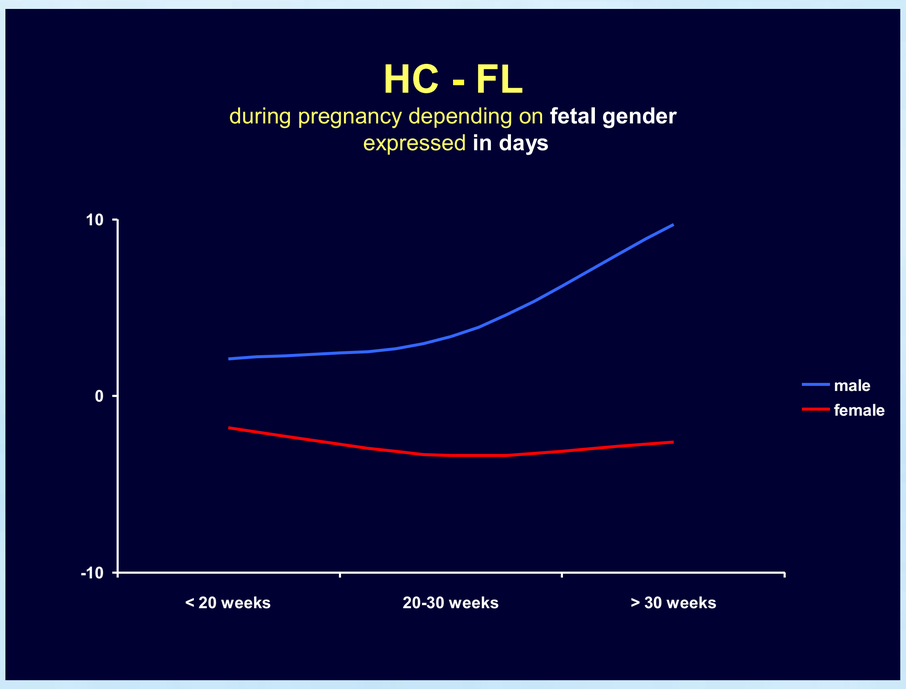
All ultrasound biometric measurements were performed according to the methodology published with the reference charts. Risk pregnancies, multiple pregnancies and breech presentations were excluded.

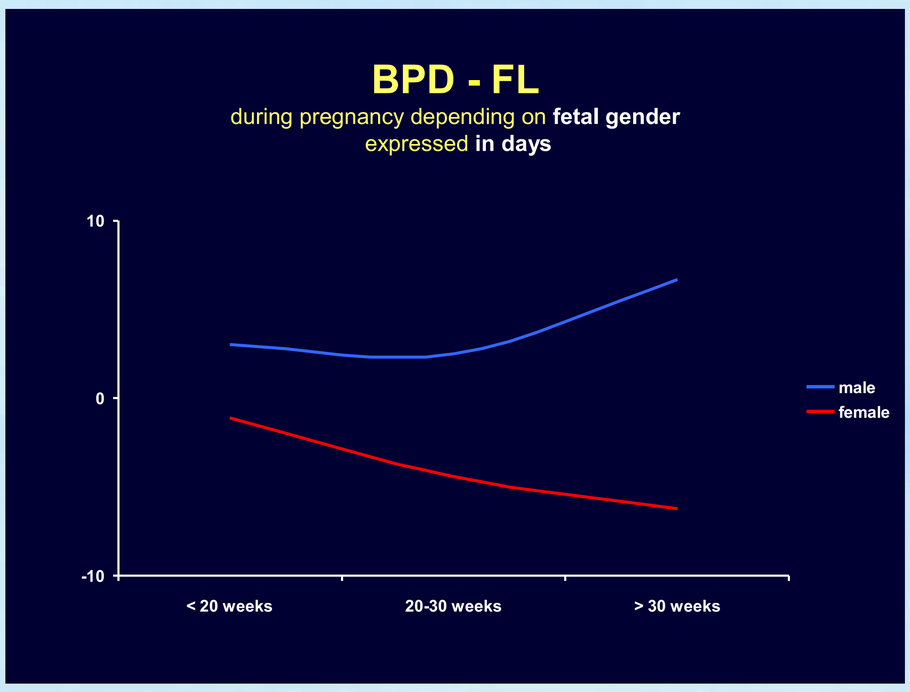
RESULTS

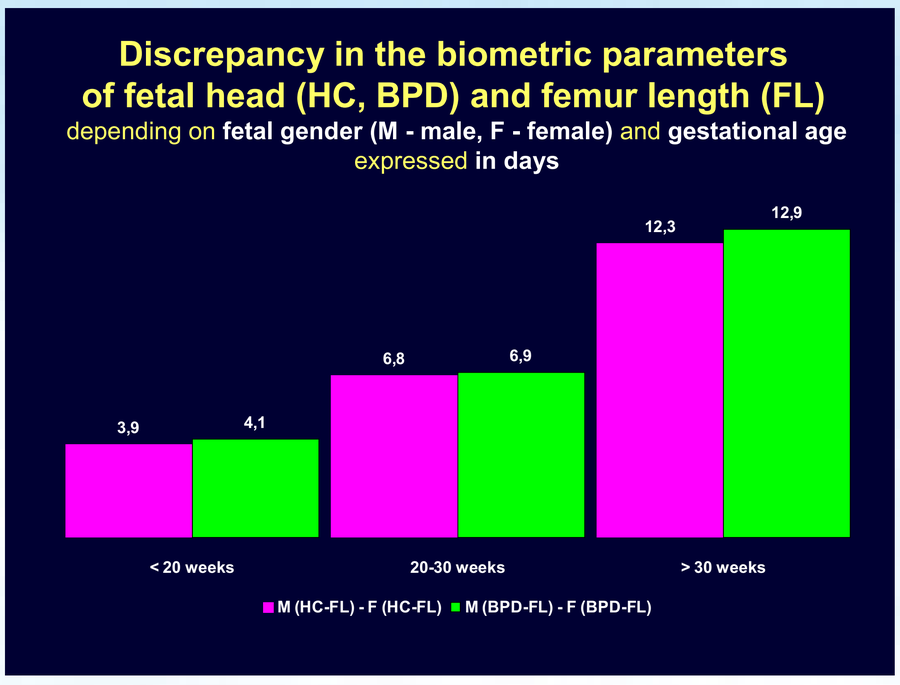
Fetal HC, BPD and FL were measured in 427 ultrasound examinations at 16 - 38 weeks. Male fetuses had significantly larger HC and BPD measurements compared to female fetuses and these differences increased with advancing gestation. In the 16 - 21 week scans estimated difference was (HC + 3.9 days, 3.0% and BPD + 4.1, 3.2%), during the 21 - 30 week scans (HC + 6.8 days, 4.3% and BPD + 6.9, 4.4%) and in the 31 - 38 week scans (HC + 12.3 days, 5.6% and BPD + 12.9, 5.9%) for males.
Male fetuses had significantly larger HC compared to FL measurements. In the 16 - 21 week scans, estimated difference was + 2.1 days (95%CI 1.7 - 2.6, P < 0.001), during the 21 - 30 week scans + 3.4 days (95%CI 2.5 - 4.2, P < 0.001) and in the 31 - 38 week scans + 9.7 days (95%CI 7.3 - 12.1, P < 0.001).

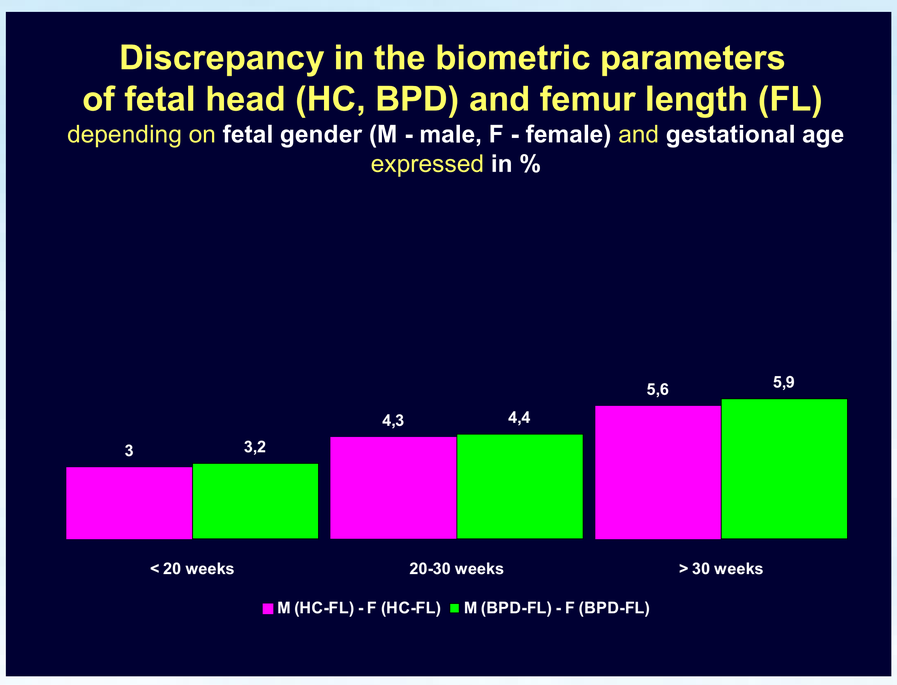
CONCLUSION

This study suggests that male fetuses have significantly larger head circumference (HC) and biparietal diameter (BPD) measurements compared to female fetuses. These prenatal sex-related differences are established by as early as 16 weeks of gestation and tend to increase with advancing gestational age. In the case of discrepancy finding between head (HC, BPD) and femur lenght (FL) measurements the fetal gender should be taken into account.









Supported by the study of Medical Faculty of Palacký University Olomouc "Safety of Ultrasound in Medicine"