



Abstract

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Reference Charts for Fetal Cerebellar Vermis Height: A Prospective Cross-Sectional Study of 10605 Fetuses.

Cignini P¹, Giorlandino M¹, Brutti P², Mangiafico L¹, Aloisi A³, Giorlandino C¹.

Author information

¹Department of Prenatal Diagnosis, ALTAMEDICA Fetal-Maternal Medical Centre, Rome, Italy.

²Department of Statistics, Sapienza University of Rome, Rome, Italy.

³Department of Obstetrics and Gynecology, Campus Biomedico University of Rome, Rome, Italy.

Abstract

OBJECTIVE: To establish reference charts for fetal cerebellar vermis height in an unselected population.

METHODS: A prospective cross-sectional study between September 2009 and December 2014 was carried out at ALTAMEDICA Fetal-Maternal Medical Centre, Rome, Italy. Of 25203 fetal biometric measurements, 12167 (48%) measurements of the cerebellar vermis were available. After excluding 1562 (12.8%) measurements, a total of 10605 (87.2%) fetuses were considered and analyzed once only. Parametric and nonparametric quantile regression models were used for the statistical analysis. In order to evaluate the robustness of the proposed reference charts regarding various distributional assumptions on the ultrasound measurements at hand, we compared the gestational age-specific reference curves we produced through the statistical methods used. Normal mean height based on parametric and nonparametric methods were defined for each week of gestation and the regression equation expressing the height of the cerebellar vermis as a function of gestational age was calculated. Finally the correlation between dimension/gestation was measured.

RESULTS: The mean height of the cerebellar vermis was 12.7mm (SD, 1.6mm; 95% confidence interval, 12.7-12.8mm). The regression equation expressing the height of the CV as a function of the gestational age was: height (mm) = -4.85+0.78 x gestational age. The correlation between dimension/gestation was expressed by the coefficient $r = 0.87$.

CONCLUSION: This is the first prospective cross-sectional study on fetal cerebellar vermis biometry with such a large sample size reported in literature. It is a detailed statistical survey and contains new centile-based reference charts for fetal height of cerebellar vermis measurements.

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