Does sonography experience have a role in fetal cisterna magna volume measurements by three-dimensional ultrasonography?

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Objectives
Although reliability of fetal cisterna magna (CM) volume estimations by 3-dimensional (3D) ultrasonography have been previously determined, there are limited data that assess the degree of agreement with fetal sonography experience. Our aim was to evaluate the interobserver reliability of fetal CM calculations with virtual organ computer-aided analysis (VOCAL), considering experience of observers.

Methods
Three observers with different experience levels of fetal sonography measured CM volumes from transabdominally acquired 3D fetal neurosonography datasets of 100 consecutive structurally normal fetuses between 18-27 weeks' gestation, using 4D View software (Figure 1). The observers included physicians with low (year 3 resident), intermediate (year 2 MFM fellow), and high (MFM specialist) experience in fetal 3D sonography. Intraclass correlation coefficients (ICC) with 95% confidence intervals (CI) were calculated.

Results
Moderate degrees of interobserver reliability for different levels of experience were found with ICC of 0.69 (95% CI, 0.55-0.79) between low and intermediate experience, ICC of 0.74 (95% CI, 0.61-0.82) between high and intermediate experience, and ICC of 0.78 (95% CI, 0.68-0.85) between high and low experience (Figure 2).

Conclusion
The interobserver reliability of fetal CM volume measurements by 3D ultrasound (VOCAL) is generally moderate and do not seem to change with fetal ultrasound experience.