EP07.25 – STANDARDIZATION and validation of two methods of MEASUREMENT of the fetal cerebral LATERAL VENTRICLES

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OBJECTIVES
To estimate the difference in measurements between the ambient cistern/parieto-occipital sulcus (ACPOS) method⁴ and the transventricular suprathalamic (STG)⁵ method.
To establish the technical feasibility of the ACPOS method.

METHODS
Single site prospective study included 30 normal singleton pregnancies from 19-32 wks. The dependent atrium was measured 3 times on a symmetric axial slice using each method on a GE Voluson E10 using a C1-5 or C4-8 mHz transducer. Data collected: gestational age (GA), atrial width (mm), BMI, and beam depth (cm). Two independent evaluators assessed image quality based on each method’s criteria. An average measurement was calculated for each subject (excluding 3 with no data or poor image quality). Average measurements were compared between methods using a Bland-Altman analysis to determine if one method consistently over- or under-measured atrial diameters compared to the other.

RESULTS
The Bland-Altman analysis revealed an estimated bias = 0.45 (95% CI=0.14-0.76). On average, the STG method estimated a 0.45mm wider measurement compared to the ACPOS method. The technical feasibility of the ACPOS method was limited by GA. The parieto-occipital sulcus (POS) was seen as a slight depression in fetuses less than 21 weeks, making it more difficult to accurately identify the landmark especially at beam depths greater than 10cm (can be associated with BMI>30).

CONCLUSION
Using a normal cut-off of 10.0mm as defined by ISUOG guidelines, 0.45mm can mean the difference between a normal and an abnormal result. This is a clinically important difference and warrants further study. The ACPOS method is optimal after 21wks when the landmark of the POS is more developed and better visualized.