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Session Information

Session Title: PRENATAL AND PERINATAL GENETICS

Session Type: POSTER, **Session Time:** W-S OCT. 16-19, 2002

Location: HALL A/B-E

Abstract Information

Program Number: 2278, **Presentation Time:** WED. 4:30-6:30PM

Title: EVALUATION OF DUCTUS VENOSUS BLOOD FLOW AS A SCREENING MARKER FOR DOWN SYNDROME IN THE FIRST TRIMESTER.

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Abstract Content

Program Nr: 2278

Evaluation of Ductus Venosus Blood Flow as a Screening Marker for Down Syndrome in the First-Trimester. *C. Rossi¹, E. Orlandi¹, F. Orlandi¹, D. Krantz², T. Hallahan², J. Macri².* 1) Centro di Diagnosi Prenatale, Palermo, Italy; 2) NTD Laboratories, Huntington Sta, N.Y.

Ultrasound examinations in which crown-rump length, nuchal translucency and ductus venosus (DV) blood flow were evaluated were conducted on 729 first-trimester patients. After the first 78 patients the ductus venosus pulsatility index for the veins (DVPIV) was evaluated. Additionally, a maternal dried blood specimen was analyzed for free Beta human chorionic gonadotropin and Pregnancy Associated Plasma Protein-A. The combination of DV, nuchal translucency and biochemistry was successfully measured in 623 unaffected and 8 Down syndrome cases. The combination of DVPIV, nuchal translucency and biochemistry was successfully measured in 518 unaffected and 6 Down syndrome cases. Abnormal DV blood flow was observed in 26.2% of unaffected cases compared to 62.5% of Down syndrome cases ($P=.07$). The median DVPIV value of 1.15 in unaffected cases was significantly different than the 1.32 observed in Down syndrome cases ($P=.0278$). The false positive and Down syndrome detection rates using DV and DVPIV with maternal age were 15.2% and 75%, and 14.7% and 66.7%, respectively. Including DV into the risk assessment based on nuchal translucency and biochemistry increased the false positive rate from 5.5% (34 of 623) to 6.9% (43 of 623). Including

DVPIV reduced the false positive rate from 5.0% (26 of 518) to 3.9% (20 of 518). Applying this approach only to patients whose risk based on nuchal translucency and biochemistry was increased, resulted in 14.7 % (5 of 34) and 46.2% (12 of 26) cases being adjusted to within normal range with no loss in detection for DV and DVPIV, respectively. DVPIV, because of its quantitative nature appears to be a better Down syndrome screening marker than DV and should only be used as part of a multiple marker screening protocol. Additional studies are needed to determine if such a protocol should be applied to all patients or only to those with initial false positive results based on the nuchal translucency and biochemistry tests.

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