Early amniocentesis vs. transabdominal chorionic villus sampling for prenatal diagnosis

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Objective
To evaluate the association between early amniocentesis (EA) and transabdominal chorionic villus sampling (TA-CVS) between 10 and 14 weeks of gestation and the complications between sampling and delivery.

Methods
This study comprises data of 255 (54.3%) women that had TA-CVS and 213 (45.6%) women that had EA between 10 and 14 weeks of gestation from 2013 to 2016. The indications for invasive procedures were: adjusted risk for Down’s syndrome more than 1:250, advanced maternal age (>37 years), previous history of chromosomal abnormalities, markers of trisomy seen during the scan. Amniotic fluid (3-5ml) was obtained using 21-22 G needle, with amnio-vacucentesis method, and 20 G needle, for TA-CVS.

Results
PCR genomic DNA for 24 hour and cell culture for seven days were successful in 211 of 213 (99.1%) cases of early amniocentesis. Overnight method for three days and culture method for seven days were successful in 253 of 255 (99.2%) cases of TA-CVS. Spontaneous abortion after TA-CVS occurred in one case (0.4%) out of 255 patients. 10 (3.9%) cases showed chromosomal abnormalities. Spontaneous abortion after EA occurred in one case out of 213 (0.4%) cases. 5 cases (2.3%) showed chromosomal abnormalities. Mosaicism was detected in two cases of TA-CVS (0.8%). Two cases of talipes (0.9%) were detected in the EA group. The incidence of haemangioma was 0.8% (2 cases) in TA-CVS group. There was no difference in the incidence of rupture of membranes, preterm delivery, neonatal respiratory distress and anomalies between two groups. There was no significant difference in mean pulsatility in uteroplacental and fetal vessels before and after TA-CVS and EA procedures. The incidence of talipes in EA group were in two cases(0,9%),none in TA-CVS group.The incidence of haemangiomas were in two cases(0,8%) of TA-CVS group,but in none in EA group. There was no difference in the incidence of rupture of membranes,preterm delivery,neonatal respiratory distress and anomalies in the newborn infants between two groups.There were no significant differences in mean pulsatility indices in uteroplacental and foetal vessels before and after TA-CVS and EA procedures. Data for 3 trisomic foetuses (2 trisomy 21, 1 trisomy 18 indicate an abnormally increased umbilical and ductus venosus PI and abnormally decreased middle cerebral artery PI.

Conclusion
TA-CVS and EA are safe methods of prenatal diagnosis for trisomies for high-risk pregnancies with no major complications. EA obtained by amnio-vacucentesis method between 10 to 14 weeks is not associated with a greater risk of spontaneous miscarriage, neonatal talipes and fetal anomalies compared to TA-CVS.