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Recurrence Risk for Women with Abnormal First and Second Trimester Serum Screening Markers in a Subsequent Pregnancy and Risks of Adverse Outcomes in Women with Low Pregnancy-Associated Plasma Protein-A (PAPP-A) and a Normally Growing Fetus

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Routine prenatal first and second trimester serum markers are measured in pregnant women for aneuploidy screening. Literature supports an association between abnormal markers and adverse pregnancy outcomes relating to placental dysfunction and fetal growth disorders. However, there is paucity of information on whether a woman with abnormal markers in one pregnancy is at risk for abnormal markers in a subsequent pregnancy as well as the risk of adverse pregnancy outcomes in women with low PAPP-A, a risk factor for fetal growth restriction, and a normally growing fetus (AGA). We present two analyses: (1) the risk of recurrent abnormal serum markers in consecutive pregnancies; (2) the risk of adverse outcomes for a woman with low PAPP-A and AGA fetus. Patients for both analyses were identified from a database, with data available for markers in consecutive pregnancies in (1) and maternal characteristics/delivery for (2). We performed a retrospective cohort analysis via chart review and used student's t-test, chi-square, or Fisher's exact test where appropriate. For each marker analyzed, there was an increased risk of having an abnormal marker in a subsequent pregnancy after having that marker in the first. In measuring cross-markers, we found no increased risk. In comparing low PAPP-A cases with normal PAPP-A controls, we found an increased risk of cesarean section for the cases with no trend regarding non-reassuring fetal heart rate. Further studies are necessary to investigate potential underlying maternal pathophysiology leading to abnormal serum markers and if fetal testing or planned delivery for low PAPP-A cases is indicated.