Association between PAPP-A and placental thickness

Background: Measuring of maternal serum pregnancy-associated plasma protein-A (PAPP-A) in first trimester can be a way for early detection of adverse prenatal outcome due to faulty placenta. Objective: The aim was to Determination of association between placental thickness in second trimester with low level of PAPP-A in first trimester. Materials and Methods: In this cohort study, serum PAPP-A of 187 pregnant women was measured in the first trimester of pregnancy. Patients who had PAPP-A≤8.0 MOM were in exposed and others who had PAPP-A >8.0 defined as unexposed group. The criteria of placental thickness in ultrasound study was thickness of 4 cm or more than 0.5% of placental length. Results: Of 187 patients, 74 patients had PAPP-A >8.0 and 93 patients had PAPP-A ≤8.0. Women with low levels of PAPP-A in the first trimester, had an increased incidence placental thickness of 44.4%, whereas another group had about 10% (p=0.2). Also, PAPP-A levels had acceptable sensitivity and specificity for placental thickness detection (91.1% and 94.4%), respectively. Conclusion: Our study showed that serum level of PAPP-A generally was low (≤8.0) in women with a thick placenta (>4 cm or >0.5% of placental length). The first trimester of pregnancy measurement of PAPP-A will be more predictable for healthy placenta.

Keywords: Pregnancy-associated plasma protein-A (PAPP-A), Pregnancy, Placenta.