

Abstract

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## Predictive value of pregnancy-associated plasma protein-A (PAPP-A) and free beta-hCG on fetal growth restriction: results of a prospective study.

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### Abstract

**PURPOSE:** Low levels of plasmatic pregnancy-associated plasma protein-A (PAPP-A) and high levels of free-beta human chorionic gonadotropin (beta-hCG) could influence the outcome of pregnancy. The objective of this study is to assess the correlation between PAPP-A and free beta-hCG and birth weight.

**MATERIALS AND METHODS:** Prospective follow-up study performed on 3332 patients in the first trimester of pregnancy who were subjected to a screening test focused on evaluation of fetal aneuploidy (SCA-TEST). The values of PAPP-A and free beta-hCG were both analyzed as raw values and subsequently converted to a multiple of the median (MoM). Statistical analysis was performed using SPSS version 17.0.1 (SPSS Inc., Chicago, USA).

**RESULTS:** The incidence of "small for gestational age" in patients with PAPP-A MoM <1st and <5th %<sub>o</sub> was statistically significant (12 and 9.8 %;  $p < 0.0001$ ). Also statistically significant data have been highlighted about free beta MoM > 95th %<sub>o</sub> (7 %;  $p = 0.03$ ). The values of PAPP-A MoM > 99th %<sub>o</sub> are significantly correlated with an increased risk of "large for gestational age" (16.7 %;  $p < 0.0001$ ).

**CONCLUSION:** Our study demonstrates that specific values of PAPP-A and free beta-hCG could identify the risk of low or high birth weight since the first trimester of pregnancy.

**KEYWORDS:** Birth weight; Fetal aneuploidy; Free-beta human chorionic gonadotropin; Intra-uterine growth restriction; Pregnancy-associated plasma protein-A; Preterm labor

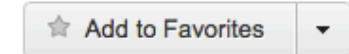
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