

BOOK OF ABSTRACTS



Organização



Apoio



TÍTULO | TITLE

Livro de Resumos do 18º Encontro de Investigação Jovem da U.Porto | *Book of Abstracts
Young Researchers Meeting of U.Porto*

UNIVERSIDADE DO PORTO

Professor Doutor Pedro Rodrigues

jjup@reit.up.pt

ISBN

978-989-746-418-8

DESIGN

Serviço de Comunicação e Imagem da U.Porto

23112 | Association between placental weight and birthweight, adjusted for parity, sex and PAPP-A levels: a retrospective cohort study

Inês Santos¹; Rui Moreira²; Inês Sarmento Gonçalves^{1,3}; Cláudia Camila Dias⁴; Carla Ramalho^{1,5,6}

Faculty of Medicine of the University of Porto (FMUP), Porto, Portugal¹; The School of Health of the Polytechnic Institute of Porto (ESS-IPP), Porto, Portugal²; ULS Matosinhos, Porto, Portugal³; RISE-Health, Department of Community Medicine, Information and Health Decision Sciences (MEDCIDS), Faculty of Medicine of the University of Porto (FMUP), Porto, Portugal⁴; ULS S.João, Porto, Portugal⁵; RISE-Health, Porto, Portugal⁶

Background & Aim: Placental weight has been studied as an indicator of placental function, correlating with birthweight and perinatal outcomes. The fetal-to-placental ratio (FPR) reflects the adaptation to hypoxemia and fetal growth needs. This study aims to assess the association between placental weight and birthweight, adjusting for parity, fetal sex and PAPP-A. **Methods:** A retrospective cohort study was conducted at a tertiary university hospital. We included singleton pregnancies undergoing first-trimester screening and delivering at the same hospital between May 2013 and September 2024. Clinical data were gathered from electronic databases (SClínico[®], ObsCare[®], ASTRAIA[®]). Categorical data were analyzed using Chi-squared tests. Continuous variables were assessed through ANOVA or T test. Pearson or Spearman correlation was applied as appropriate. For significance, a p -value <0.05 was assumed. All data was processed with IBM SPSS v29.0. **Results:** Among 16492 singleton pregnancies, 54.9% women were nulliparous and 8.9% newborns were small for gestational age. Placental weight was positively correlated with birthweight ($r=0.517, p<0.001$), which increased by 1.77g per gram of placental weight, explaining 26.7% of the birthweight variation. Preterm deliveries (6.8%) had lower mean placental weight (493.1g versus 579.2g) and birthweight (900g difference, $p<0.001$) compared to term group. Mean male fetuses' birthweight was 121.3g higher than female ($p<0.001$). Additionally, "female fetuses" and "nulliparity" were associated with decreased placental weight ($p<0.001$). On average, the FPR was 6:1, with male fetuses exhibiting greater FPR ($p<0.001$) as well as term deliveries (5.7) compared to preterm (4.8), $p<0.001$. FPR was also correlated with Apgar score at 5min (Apgar <7 :5.0 vs. Apgar ≥ 7 :5.7, $p<0.001$) and PAPP-A levels ($p<0.001$). However, parity ($p=0.121$) showed no significant association with FPR. **Conclusions:** Placental weight correlates with birthweight. FPR reflects placental efficiency and perinatal outcome, influenced by fetal sex and gestational age.

Keywords: Placental weight, Birthweight, Fetal sex, Parity, PAPP-A.