

## Maternal characteristics associated with spontaneous preterm delivery in a high-risk population followed at a preterm birth clinic

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**Objective.** Only a minority of women identified as at high risk for spontaneous preterm delivery (sPTD) ultimately deliver preterm. This study aims to explore what maternal characteristics are associated with sPTD in a high-risk population followed at a preterm birth clinic.

**Materials and Methods.** A prospective cohort study was conducted on women followed at our clinic between 2021 and 2024, considered at high risk for sPTD based on reduced cervical length in the second trimester, previous sPTD, or cervical conization. Maternal characteristics and history were collected at their first visit.

**Results.** Among 186 women, 25 experienced sPTD (13.4%): 9 early preterm (24+0 - 33+6 weeks, 4.8%) and 16 late preterm (34+0 - 36+6 weeks, 8.6%). The sPTD group exhibited significantly higher rates of obesity (28.0% vs 8.1%,  $p = 0.008$ ), histo-

ry of diabetes mellitus, hypertension or dysthyroidism (16% vs 2.5%,  $p = 0.012$ ) compared to the term delivery group.

Other characteristics such as maternal age > 40, family history of PTD, black race, immigrant status, stress, tobacco use, vaginal and urinary tract infections, periodontal disease, BMI < 18, fibromatosis, endometriosis, previous late miscarriage, ART, polyhydramnios, and vaginal bleeding were not significantly different between groups. Multivariate analysis identified late access to prenatal care (OR 5.7), obesity (OR 3.9), and a history of diabetes mellitus, hypertension, or dysthyroidism (OR 3.2) as the most significant risk factors for sPTD.

**Conclusions.** Obesity, chronic medical conditions, and late prenatal care access are strong predictors of sPTD in high-risk pregnancies. Treatment of comorbidities and improved access to prenatal care are crucial for reducing sPTD risk.