

## **Predicting preterm delivery in asymptomatic pregnant women with prior preterm delivery by measurement of cervical length, fetal fibronectin and phosphorylated insulin-like growth factor-binding protein-1**

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### **ABSTRACT**

**OBJECTIVE:** To evaluate the accuracy of cervical length measurement in combination with assessment of fetal fibronectin (FFN) and phosphorylated insulin-like growth factor-binding protein-1 (pIGFBP-1) in cervico-vaginal secretions as a predictor of preterm delivery in asymptomatic pregnant women with a history of preterm birth.

**STUDY DESIGN:** 91 singleton pregnant mothers (between 22 – 24 weeks of gestation) with previous history of one or more unexplained preterm birth were included in the study.

For all participants transvaginal sonographic measurement of cervical length was carried out together with qualitative assay of fetal fibronectin and quantitative measurement of phosphorylated insulin-like growth factor binding protein-1 in cervico-vaginal secretions. The primary outcome of the study was delivery before completed 37 weeks of gestation.

**Results:** There was a significant association between cervical length and the occurrence of preterm delivery ( $P=0.002$ ), cervical length was  $23.12 \pm 8.0$  mm in 33 cases who experienced preterm delivery compared to  $29.34 \pm 9.4$  mm in 58 cases who delivered at term. Regarding fetal fibronectin assay in cervico-vaginal secretions, no statistically significant difference was found between those who delivered preterm and those who had term delivery ( $P=0.972$ ). Measurement of phosphorylated insulin-like growth factor-binding protein-1 (pIGFBP-1) in cervico-vaginal secretions showed statistically significant difference among patients who delivered preterm compared to those who did not ( $P=0.007$ ).

Sensitivity, specificity, positive and negative predictive values, and positive and negative likelihood ratios were calculated for cervical length, pIGFBP-1, and for their combination, and our results demonstrated high sensitivity, specificity,

positive and negative predictive values for the combined method compared with either method alone.

**Conclusion:** Both cervical length and pHIGFBP-1 measurement in cervico-vaginal secretions at 32-34 weeks are likely to be useful in predicting preterm delivery in asymptomatic women with a history of preterm birth and their combination increased their sensitivity, specificity, positive and negative predictive values as predictors.