The role of IGFBP-1, IL-6, and cervical length in predicting impending preterm labour

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ABSTRACT

Introduction: : Impending preterm labour contributes to neonatal morbidity and mortality. Early identification is crucial for timely intervention. Cervical shortening and inflammatory markers, including insulin-like growth factor binding protein-1 (IGFBP-1) and interleukin-6 (IL-6), have been associated with impending preterm labour. Understanding these relationships may improve screening and management. **Objectives:** To evaluate the association of IGFBP-1 expression, IL-6 levels, and cervical length with impending preterm labour. **Materials and Methods:** A retrospective study was conducted at Wahidin Sudirohusodo Hospital and affiliated networks. Medical records of pregnant women with impending preterm labour and those undergoing routine antenatal supervision were reviewed. Cervical length was measured via transvaginal ultrasound, while IGFBP-1 and IL-6 levels were analysed using ELISA. Fisher's exact test and logistic regression were used for analysis. **Results:** Fisher's exact test showed significant associations ($p < 0.05$) between impending preterm labour and IGFBP-1 positivity, higher IL-6 levels, and shorter cervical length. However, in multivariate logistic regression, only IGFBP-1 positivity remained independently associated (OR = 9.956, 95% CI: 2.496–39.708, $p = 0.001$), while IL-6 levels ($p = 0.532$) and cervical length ($p = 0.912$) were not significant. Further analysis showed a significant association between shorter cervical length (≤25 mm) and IGFBP-1 positivity ($p = 0.001$). **Conclusion:** IGFBP-1 positivity, IL-6 levels, and cervical length were associated with impending preterm labour in univariate analysis, but only IGFBP-1 remained an independent predictor. These findings support IGFBP-1 as a potential biomarker for risk assessment in impending preterm labour.