

Predictive Value of Cervical Length Measurement by Transvaginal and Transperineal Ultrasonography for Preterm Delivery

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Abstract

Background: Preterm delivery is defined as delivery between the 20th and 37th week of pregnancy that affects 7% to 11% of all pregnancies and continues to be the primary cause of perinatal mortality and morbidity worldwide.

Objectives: The aim of this study was to investigate the feasibility and reliability of cervical length (CL) measurement by transperineal and transvaginal ultrasonography (TPUS and TVUS, respectively) in the second trimester.

Patients and Methods: This cross-sectional study included 196 pregnant women at 18th to 24th weeks of gestation who were referred to Zeinabieh and Hafez hospitals, affiliated to Shiraz University of Medical Sciences. CL was measured by TVUS and TPUS and the measurements between 18 and 24 weeks of gestation were used to predict preterm delivery.

Results: Preterm delivery was recorded in 16 pregnant women (8.2%). A statistically significant difference in mean of measured CL by TVUS and TPUS was found between preterm and term delivery groups (TVUS, 33.5 ± 4.1 mm in term and 21.8 ± 6.0 mm in preterm delivery, $P < 0.001$; and TPUS, 34.2 ± 4.6 mm in term and 22.6 ± 5.0 mm in preterm delivery). Areas under the receptor operative characteristic curves were 0.973 and 0.978 for the TVUS and TPUS, respectively. There was a strong correlation between the TVUS and TPUS at a cutoff point of ≤ 28 mm with sensitivity of 93.75% and specificity of 92.74%.

Conclusions: TPUS can be an appropriate alternative for predicting preterm delivery with a comparable accuracy to TVUS.

Keywords: Cervical Length Measurement; Transvaginal Sonography; Transperineal Sonography; Preterm Delivery