Comparison of Cervical Length Using Transvaginal Ultrasonography and Bishop Score to Predict Succesful Induction

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Abstract : Background: The Bishop score is a standard method used to predict the success of induction. This examination tends to be subjective with high inter and intraobserver variability, so it was presumed to have a low predictive value in terms of the outcome of labor induction. Cervical length measurement using transvaginal ultrasound is considered to be more objective to assess the cervical length. Meanwhile, this examination is not a complicated procedure and less invasive than vaginal touché. Objective: To compare transvaginal ultrasound and Bishop score in predicting successful induction. Methods: This study was a prospective cohort study. One hundred and twenty women with singleton pregnancies undergoing induction of labor at 37 – 42 weeks and met inclusion and exclusion criteria were enrolled in this study. Cervical assessment by both transvaginal ultrasound and Bishop score were conducted prior induction. The success of labor induction was defined as an ability to achieve active phase ≤ 12 hours after induction. To figure out the best cut-off point of cervical length and Bishop score, receiver operating characteristic (ROC) curves were plotted. Logistic regression analysis was used to determine which factors best-predicted induction success. Results: This study showed significant differences in terms of age, premature rupture of the membrane, the Bishop score, cervical length and funneling as significant predictors of successful induction. Using ROC curves found that the best cut-off point for prediction of successful induction was 25.45 mm for cervical length and 3 for Bishop score. Logistic regression was performed and showed only premature rupture of membranes and cervical length ≤ 25.45 that significantly predicted the success of labor induction. By excluding premature rupture of the membrane as the indication of induction, cervical length less than 25.3 mm was a better predictor of successful induction. Conclusion: Compared to Bishop score, cervical length using transvaginal ultrasound was a better predictor of successful induction.

Keywords : Bishop Score, cervical length, induction, successful induction, transvaginal sonography