EP23.03 - Prediction of successful induction with cervical ripening balloon by ultrasonographic cervical characteristics
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Introduction
Cervical ripening balloon (CRB) is a frequently used technique for non-pharmacologically inducing labor in presence of an unfavourable cervix and in approximately 25% of pregnancies labor starts spontaneously after CRB insertion. Cervical characteristics on ultrasound has been shown to be a good proxy for the onset of labor at term, but no data are available on the role of ultrasound assessment of the cervix in anticipating successful CRB. The aim of this study was to elucidate the strength and association ultrasound assessment of the cervix in predicting successful CRB at term.

Methods
In prospective observational study singleton pregnancies 37 weeks and in vertex presentation scheduled for CRB insertion were considered for the study. Before the CRB insertion the cervix was evaluated by transvaginal ultrasonography and the cervical length (CL), posterior cervical angle (PCA) and the elastographic hardness ratio (HR) (e cervix software Samsung Seoul Korea) were measured. Successful CRB was considered as spontaneous onset of labor until 12 hours from its insertion.

Results
A cohort of 103 pregnant women fulfilling the inclusion criteria was considered for the study. Nulliparity was present in 74 (71.8%) and successful CRB occurred in 32 (31.1%) women. CL was shorter (18 vs. 27; p≤0.001); PCA higher (99.3 vs 118.4; p≤0.02) and HR lower (20.9 vs.28.3; p≤0.01) in pregnancies with successful CRB. No differences were found in Bishop score or other maternal characteristics. On multivariable logistic regression analysis nulliparity (adjusted odds ratio [aOR] 0.31 [95th Confidence Interval [CI] 0.23-0.76]) and CL (aOR 0.47 [95% CI 0.29-0.87]) provided significant independent prediction of successful CRB with no significant contribution of PCA or HR.

Conclusion
In women undergoing induction of labor with CRB spontaneous labor occurs in presence of multiparity and a short CL. The addition of other ultrasonographic, elastographic and clinical parameters seems unlikely to be useful in the prediction of successful CRB.