Prediction of successful induction of labour in nulliparous at term
CHAITANYA HOSPITAL, CHANDIGARH, India

Objective
Bishop score is the most commonly used method to rate the readiness of cervix and prediction of mode of delivery before induction of labour. However, being a subjective measure, it is associated with high intra and inter observer variability. Ultrasound is an objective, reproducible and non-invasive modality for cervical assessment. Several studies have evaluated the possible role of ultrasound using variable parameters but with conflicting results. In this study we have formulated an ultrasound scoring system with five parameters viz. cervical length, posterior cervical angle, funneling of uterine cervix, fetal head perineum distance and fetal occipital position and compared its performance with Bishop score for prediction of successful induction in nulliparous women. Success of induction of labour was considered as achieving active phase and vaginal birth. To evaluate a pre-induction Ultrasound Scoring System and compare it with Bishop score in term nulliparous women for prediction of successful induction of labour measured by achieving active phase of labour and vaginal birth.

Methods
We recruited a total of 96 nulliparous women between 36-41 weeks of gestation with live singleton pregnancy with vertex presentation and intact amniotic membrane, in absence of active labour with no contraindication to vaginal delivery. Trans abdominal and trans vaginal ultrasound was done to assign ultrasound score. Subsequently, a second obstetrician blinded of the ultrasound findings assessed the Bishop score. Findings of both scores were studied and compared with respect to successful prediction in achieving active phase of labour and vaginal delivery.

Results
91 out of 96 women completed the study. 61(67%) achieved active phase of labour and 54(59%) had vaginal delivery. For achieving active phase of labour, Garg Ultrasound score and Bishop Score showed almost similar sensitivity of 78% and 80% respectively at cut off Score of 4. But Garg Ultrasound Score showed a better specificity of 77% vs. 52%. Similarly, for achieving vaginal delivery both scores had comparable sensitivity (71.02% and 69%). However, Garg Ultrasound Score proved to be more specific as compared to Bishop Score (88.9% vs 55.6%) at cut off 4.

Conclusion
Through this study, we propose a pre-induction Garg Ultrasound Scoring System which can predict success of induction of labour with greater specificity as compared to the traditional Bishop Score. This Scoring System is highly objective, reproducible, easy to perform and does not include vaginal examination which is subjective and painful for patients. Through this scoring system, if validated in more diverse population in larger multicenteric studies, clinicians should be able to provide individualized counseling to women undergoing induction of labour and help them make a more informed decision.