Objective
Our aim was to assess the value of the distance of progression (PD) in predicting Caesarean delivery in relation to cervical dilatation in first stage of labor.

Methods
We included women in active first stage of labor for whom we measured PD at rest (static) and on maternal pushing (dynamic). Vaginal examination was then performed to assess cervical dilatation by an obstetrician blinded to ultrasound assessment. PD were compared between women with Caesarean delivery (CD) and those with vaginal delivery. Univariate logistic regression performed, to identify relation of PD predicting CD to cervical dilatation.

Results
119 women were included in the study. 90(76%) delivered vaginally while 29 had CD (24%). Women undergoing CD had significantly shorter PD at rest (1.5 vs 15mm, P=0.0003) and under maternal pushing (13 vs 30mm, P<0.0001).

ROC curve analysis for PD as a predictor of CD showed AUC 71%(95% CI 62-79%) for static and 74% (95% CI 65-82%) for dynamic assessment.
On univariate logistic regression analysis, both static PD (OR 1.04 (95%CI 1.01-1.07), P =0.008) and dynamic PD (OR 1.05(95%CI 1.02-1.08), P= 0.0003) were independent predictors of CD from cervical dilatation (OR 1 (95%CI 0.97-1.03),P= 0.02)

Conclusion
PD measured at rest and on maternal pushing can predict Caesarean delivery in the first stage independently from cervical dilatation.