The predictive value of cervical length in women with twin pregnancies presenting with threatened preterm labor

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Objective
To assess the accuracy of sonographic cervical length for the prediction of preterm delivery (PTD) and to determine the optimal threshold of cervical length in women with twin pregnancies presenting with threatened preterm labor (PTL).

Methods
A retrospective cohort study of all twin pregnancies who presented with threatened PTL in the presence of intact membranes at less than 34+0 weeks and underwent sonographic measurement of cervical length in a tertiary medical center between 2007 and 2012. Women with cervical cerclage, cervical dilatation >3 cm at presentation and pregnancies complicated by placental abruption, chorioamnionitis, stillbirth or major fetal anomalies were excluded. The accuracy of cervical length to predict PTD in women with twin pregnancies was calculated and compared to a control group of singleton pregnancies.

Results
Overall, 218 women with twin pregnancies and suspected PTL were compared with a control group of 1,077 women with singleton pregnancies and suspected PTL. The risk of PTD associated with any given cervical length at presentation was higher in twins than in singletons. The predictive test of cervical length for PTD was similar in twin and singleton pregnancies as reflected by the similar degree of correlation between cervical length and the time to delivery interval (r=0.30 vs. r=0.29, p=0.9), the similar degree of association of cervical length with the risk of PTD, and the similar area under the ROC curve (0.674-0.724 vs. 0.620-0.682, respectively, p=0.3) in twins and singletons. The threshold of cervical length which is associated with any given targeted sensitivity or specificity was found to be lower in twin pregnancies. However, in order to achieve a target negative predictive value of 95% a higher threshold (in the range of 28-30mm) should be used in twins compared with singleton pregnancies.

Conclusion
Although the performance of cervical length as a predictive test in women with twin pregnancies who present with PTL seems to similar to that observed in singleton pregnancies with PTL, the optimal threshold of cervical length appears to be higher in twin pregnancies, mainly due to the higher baseline risk for PTB in these pregnancies. This implies that women with twins who present PTL are more likely have a positive cervical length test and thus to require interventions than singleton pregnancies with PTL.