



Elastogram of the cervix and preterm delivery among pregnant women at risk for preterm delivery

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Objective

Preterm delivery (PTD) is a major cause of neonatal morbidity and mortality. An elastogram is a non-invasive sonographic measurement of the elasticity of the cervical tissue. This study was designed to evaluate the association between elastography of the uterine cervix and PTD before 37 weeks.

Methods

A prospective study of pregnant women at 24-34 weeks gestation with a singleton pregnancy, who were referred to Shaare Zedek Medical Center, between 2014-2016, who were diagnosed high risk for PTD based on symptoms of premature contractions or a history of previous PTD. The ultrasound examination was performed using a mid-sagittal transvaginal view of the cervix without applying pressure. An elastogram of the internal os was measured along with the cervical length and the presence of sludge or funneling. The elastogram was graded according to color intensity into high risk (level 3-4) or low risk (level 1-2). The correlation between sonographic cervical factors and PTD were calculated using pearson chi square test, as well as a multifactorial regression analysis to exclude confounding factors.

Results

The study included 127 women. PTD occurred in 15 cases (11.8%). A statistically significant correlation was found between PTD with elastogram of the cervix and funneling. Women in the high risk group had a 3.2-fold risk for PTD (23% vs 7%, $p=0.037$). Women with cervical funneling delivered early in 55% of cases versus 9.7% ($p=0.003$).

Conclusion

In pregnant women at risk for PTD, a positive elastogram of the internal os of the cervix, at 24-34 weeks gestation, was associated with preterm delivery.