Cervical elastography in asymptomatic singleton pregnancy with borderline cervix length at midpregnancy

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Objective
To determine if midpregnancy cervical elastography is predictive of 1) progressive shortening of cervix and 2) subsequent preterm delivery in asymptomatic singleton pregnancy with cervical length (CL) of 20-30 mm at 16+0-28+0 gestational weeks.

Methods
- The multicenter prospective observational study between July 2015 and March 2018.
- The cervical elastography data was obtained at 16+0 weeks to 28+0 weeks of gestation at the time of CL measurement and if 20-30 mm, follow up elastography was performed within 4 weeks.
- The difference and rate of change in cervical elastography parameters between initial and follow up was calculated, and its association with progressive shortening of the cervix < 20 mm and preterm birth at less than 37+0 weeks of gestation was analyzed.

Result
- A total of 51 patients
- No significant association was found between elastography parameters and progressive shortening of CL<20 mm.
- The higher ECI, IOS, EOS and lower HR at the time of initial evaluation and the rate of change of IOS were associated with preterm delivery (p<0.010).

Conclusion
Cervical elastography may be useful in predicting preterm delivery in asymptomatic singleton pregnancy with short cervix of 20-30 mm at midtrimester.

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Table 1. Pearson correlation score and p-value of preterm delivery and cervical elastography parameters at initial measurement

<table>
<thead>
<tr>
<th></th>
<th>ECI</th>
<th>HR</th>
<th>IOS</th>
<th>EOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>-0.69</td>
<td>0.38</td>
<td>-0.38</td>
<td>-0.29</td>
</tr>
<tr>
<td>P-value</td>
<td>0.02</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Rate of Change</td>
<td>0.21</td>
<td>0.04</td>
<td>-0.32</td>
<td>0.08</td>
</tr>
<tr>
<td>P-value</td>
<td>0.29</td>
<td>0.38</td>
<td>0.01</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Figure 1. Image of cervical elastography.