BRIEF COMMUNICATIONS

Human chorionic gonadotropin in cervicovaginal secretion as a predictor of preterm delivery

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KEYWORDS
Cervicovaginal secretion; Delivery; Human chorionic gonadotropin; Preterm birth; Preterm labor; Term pregnancy

A prospective study was conducted with 150 women between the 24th and 34th weeks of a singleton pregnancy who had symptoms suggestive of preterm labor. The inclusion criteria were 4 regular uterine contractions per 20-min intervals, accompanied by low back pain or low abdominal pain; pelvic pressure; and increased vaginal discharge. Exclusion criteria were ruptured membranes; vaginal bleeding; cervical dilatation of 4 cm or more; cervical cerclage in the present pregnancy; placenta previa; a history of trauma and tocolysis; pre-eclampsia; and fever (body temperature higher than 37.8 °C).

There were 71 women (47.3%) delivered after 37 weeks of pregnancy (the group at term) and 79 (52.7%) delivered before 37 weeks of pregnancy (the preterm group).

After a sample of cervicovaginal secretions was obtained, the levels of human chorionic gonadotropin (hCG) present in the secretions were measured by immunoassay and compared between the 2 groups.

The mean ± SD pregnancy duration was 32.42 ± 2.01 weeks at the time of sampling and 35.83 ± 2.88 weeks at the time of delivery; the mean cervical dilatation and effacement were 1.74 ± 0.8 cm and 30.61 ± 15.82%, respectively; and the mean overall hCG concentration in the cervicovaginal secretions at the time of sampling was 35.93 ± 5.97 mIU/mL.

The mean hCG concentration was 7.9 ± 34.1 mIU/mL in the group at term and 61.12 ± 66.84 mIU/mL in the preterm group, and the difference was statistically significant (P < 0.001). Moreover, there was a significant positive correlation between cervical hCG concentration and the following: pregnancy duration at the time of sampling (P < 0.01; r = 0.2); cervical dilatation (P < 0.001; r = 0.54); and cervical effacement (P < 0.001; r = 0.43). And there was a significant negative correlation between hCG concentration and pregnancy duration at delivery (P < 0.001; r = −0.4).

Age, gravidity, parity, history of abortion, pregnancy duration at the time of sampling, pregnancy duration at delivery, cervical dilatation, effacement, and hCG concentration in the cervical secretions were analyzed using a regression model. Only cervical dilatation (P < 0.01; r = 0.2), pregnancy duration at the time of sampling (P < 0.001; r = 0.22), and pregnancy duration at the time of delivery (P < 0.001; r = −0.74) were found to be correlated with hCG concentration in the cervicovaginal secretions.

The results for different cut-off points are shown in Table 1. It seems that the best sensitivity and specificity correspond to a concentration of 9.5 mU/mL (sensitivity, 92.4% [95% confidence interval, 83.6%–96.9%]; specificity, 87.3% [95% CI, 76.8%–93.7%]; positive predictive value, 89%...
Similar results have been reported in similar studies [1–4].

In conclusion, quantitative measurement of hCG concentration in the cervicovaginal secretions may be useful in predicting preterm birth in symptomatic patients. This test has the advantage of being inexpensive and widely available.

References


Figure 1 Receiver operating characteristic curve of human chorionic gonadotropin values in cervicovaginal secretions in women diagnosis of preterm delivery.

Table 1 Evaluation of the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of different cut-off values of hCG human chorionic gonadotropin concentration in cervicovaginal secretions*

<table>
<thead>
<tr>
<th>Cut-off hCG values, mIU/mL</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (95% CI)</th>
<th>PPV (95% CI)</th>
<th>NPV (95% CI)</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5</td>
<td>92.4 (83.6–96.9)</td>
<td>87.3 (76.8–93.7)</td>
<td>89 (79.7–94.5)</td>
<td>91.2 (81.1–96.4)</td>
<td>90</td>
</tr>
<tr>
<td>10.5</td>
<td>79.7 (68.9–87.6)</td>
<td>93 (83.7–97.4)</td>
<td>92.6 (83–97.3)</td>
<td>80.5 (70–88.1)</td>
<td>86</td>
</tr>
<tr>
<td>13.5</td>
<td>73.4 (62.1–82.4)</td>
<td>98.6 (91.3–99.9)</td>
<td>98.3 (89.7–99.9)</td>
<td>76.9 (66.7–84.8)</td>
<td>85.3</td>
</tr>
</tbody>
</table>

Abbreviations: hCG, human chorionic gonadotropin; NPV, negative predictive value; PPV, positive predictive value.
*Values are given as percentages unless otherwise indicated.

Emergency peripartum hysterectomy in the nulliparous patient

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Abstract

Objective: To find out the incidence, indications and outcomes of emergency peripartum hysterectomy in the nulliparous woman. Method: Retrospective study at the Korle Bu Teaching Hospital in Accra, Ghana, between January 1995 and December 2003. Results: During the eight-year study period there were 92,966 deliveries out of which 36,550 (39.5%) were for the nulliparous. Peripartum hysterectomy was performed for 39 nulliparous women, thus giving an incidence of 1 per 1000 nulliparous deliveries. The indications for the hysterectomy were: atonic uterus 28 (71.8%), ruptured uterus 8