Evaluation Of Cervico-Vaginal Âhcg Assay And Cervical Length In Prediction Of Pre-Term Delivery In Symptomatic Women

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Introduction

Preterm birth is an important cause of neonatal morbidity and mortality. The incidence of pre-term birth in India is estimated to be 11-14% in 2004.In Safdarjung Hospital, 17.01% of all births were pre-term in the year 2009. However, only about 10-50% of women who present with signs and symptoms of pre-term labour actually deliver prematurely. It is important to identify which of these women are likely to deliver pre-term, so that appropriate management strategies can be directed towards that particular group. Therefore, there is an urgent need of developing markers to predict the likelihood of pre-term birth in women who present with threatened preterm labor. Cervical length and cervicovaginal âhCG have been evaluated alone, and together, to predict preterm delivery by very few studies in symptomatic women. The current study has been undertaken to evaluate whether a these factors alone, or in combination,will improve the predictability of preterm labour and hence decrease the unnecessary intervention.

Aim and Objectives

1. To predict the risk of pre-term birth by qualitative and quantitative cervico-vaginal âhCG assay in women with threatened preterm labour.

2. To predict the risk of pre-term birth by cervical length measured by transvaginal ultrasonography in women presenting with threatened preterm labour.

3. To evaluate the combination of cervico-vaginal âhCG assay and cervical length measured by transvaginal ultrasonography in predicting preterm delivery in women presenting with threatened preterm labour.

Methods

A total of 75 patients between 24-34 weeks with singleton pregnancies with signs and symptoms of preterm labor were recruited from OPD's and emergency deptt of Obs & Gynae in VMMC & SJH. All patients underwent a sterile speculum examination for collection of cervicovaginal secretions.These secretions were submitted to qualitative and quantitative analysis of âhCG. A transvaginal ultrasound scan was also used to measure the cervical length in these patients. ROC curves were used to determine the optimal levels of quantitative âhCG and cervical length.All women were followed until delivery, and admission-delivery interval was noted. Both qualitative and quantitative âhCG levels and cervical length were analysed as continuous variables to correlate these with delivery within 48 hrs, and before 37 weeks.

Results

1. Fourty six point seven percent were nulliparous and 53.3% were multiparous in the study group.

2. A total of 44 patients (58. 66%) delivered preterm.

3. Sixteen percent delivered within 48 hrs of admission, and 70.6% delivered after a week of admission.

4. The sensitivity, specificity, positive predictive value (PPV), negative predictive value and accuracy of qualitative âhCG was found to be 91.7%, 76.2%, 42.3%, 98% and 78.7%, respectively for predicting delivery < 48 hrs within admission. The optimal level to predict delivery within 48 hrs for quantitative âhCG was found to be e"29.65 IU/mL. Using this cut off value, the sensitivity, specificity, positive predictive value, negative predictive value and accuracy of âhCG to predict delivery <48 hours were found to be 91.7%, 76.2%, 42.3%, 98%, and 78.7% respectively.5. The cut off value for cervical length to predict preterm deliveries was found to be 2.65 cm. Using this cut off value, the sensitivity, specificity, positive predictive value, negative predictive value and accuracy of cervical length to predict delivery <37 weeks were found to be 69.8%, 71.9%, 76.9%,63.9% and 70.7% respectively. The same for predicting deliveries within 48 hrs was found to be 1.95 cm. Using this cut off value, the sensitivity, specificity, positive predictive value, negative predictive value and accuracy of cervical length to predict delivery <48 hours were found to be 91.7%, 81%, 47%, 98.1% and 82.7% respectively.

Conclusion

1. It was concluded that increased cervicovaginal âhCG and reduced cervical length predicted an increased risk of pre-term delivery in women with threatened pre-term labor.

2. Combining either qualitative or quantitative âhCG with cervical length drastically improved the sensitivity and NPV of cervical length alone to predict delivery within 48 hrs, and before 37 weeks.

3. Qualitative cervicovaginal âhCG test using a UPT KIT is an easy, inexpensive, cost effective and safe bedside test which can be used to predict pre-term delivery within 48 hrs, and it can guide physicians to start treatment or take referral decisions accordingly.