



Accuracy of fetal fibronectin testing to predict preterm birth in women with symptoms of premature labour

Mitra A, Spence C, Sharma B, Samarage H

London North West University HealthCare NHS Trust, London, UK, London, United Kingdom

Objective

Around 60, 000 babies are born prematurely each year in the UK (before 37 weeks gestation) and this is the biggest cause of infant morbidity and mortality. Symptoms of preterm labour are a common cause for antenatal presentation, but only a small proportion of women subsequently deliver prematurely. Rapid fetal fibronectin (fFN) testing may help to identify those women at highest risk, thus reducing the need for unnecessary hospitalisation and intervention. The aim of this study was to assess the accuracy of rapid fFN testing in predicting preterm birth (PTB) in symptomatic women attending the maternity triage department at Northwick Park Hospital, London North West University Healthcare Trust.

Methods

A retrospective cohort study of case notes of women who self-presented to the maternity triage department with symptoms of preterm labour between 22+0 and 34+6 weeks gestation was performed. Women with multiple pregnancy, cervical cerclage, evidence of membrane rupture, cervical dilatation > 3cm or vaginal bleeding were excluded. Rapid fFN (Hologic, Marlborough, Massachusetts, USA) was used according to manufacturers instructions. fFN concentration more than 50 ng/ml was considered positive.

Results

During the study period from August 2016 to January 2018, 273 women had a fFN test performed; 43 positive and 230 negative. Five women with a positive result delivered before 37 weeks (5/38, positive predictive value (PPV) = 11. 8%), compared to four with a negative result (4/226, negative predictive value (NPV) = 97. 6%). The sensitivity and specificity for predicting delivery before 37 weeks were 50% and 84. 4% respectively. Similar values were seen for predicting delivery within 14 days of the test; PPV = 13. 7%, NPV = 96. 4%, sensitivity = 43. 8% and specificity 84. 6%. 7 days qfFN 10 ng/ml qfFN 50 ng/ml qfFN 200 ng/ml qfFN 500 ng/ml SN 75. 0% 50. 0% 33. 3% 8. 3% SP 56. 1% 84. 4% 97. 2% 99. 3% PPV 6. 6% 11. 8% 33. 3% 33. 3% NPV 98. 2% 97. 6% 97. 2% 96. 3% 14 days qfFN 10 ng/ml qfFN 50 ng/ml qfFN 200 ng/ml qfFN 500 ng/ml SN 75. 0% 43. 8% 25. 0% 6. 3% SP 56. 5% 84. 6% 97. 2% 99. 3% PPV 8. 8% 13. 7% 33. 3% 33. 3% NPV 97. 6% 96. 4% 95. 8% 95. 0%.

Conclusion

In our unit, fFN is has a relatively high specificity and negative predictive value, but a low sensitivity and specificity, as has been shown in other cohort studies and meta-analyses. The positive predictive value for fFN in our population is lower than other similar studies reported At cutoff mark for positive results(fFN 50ng/ml) in our population PPV is 13. 7% More interestingly with higher values of the marker 200ng/ml and 500ng/ml the PPV was the same with 33. 3%.