

# Cervical length and immunological tests – valuable predictors for preterm delivery

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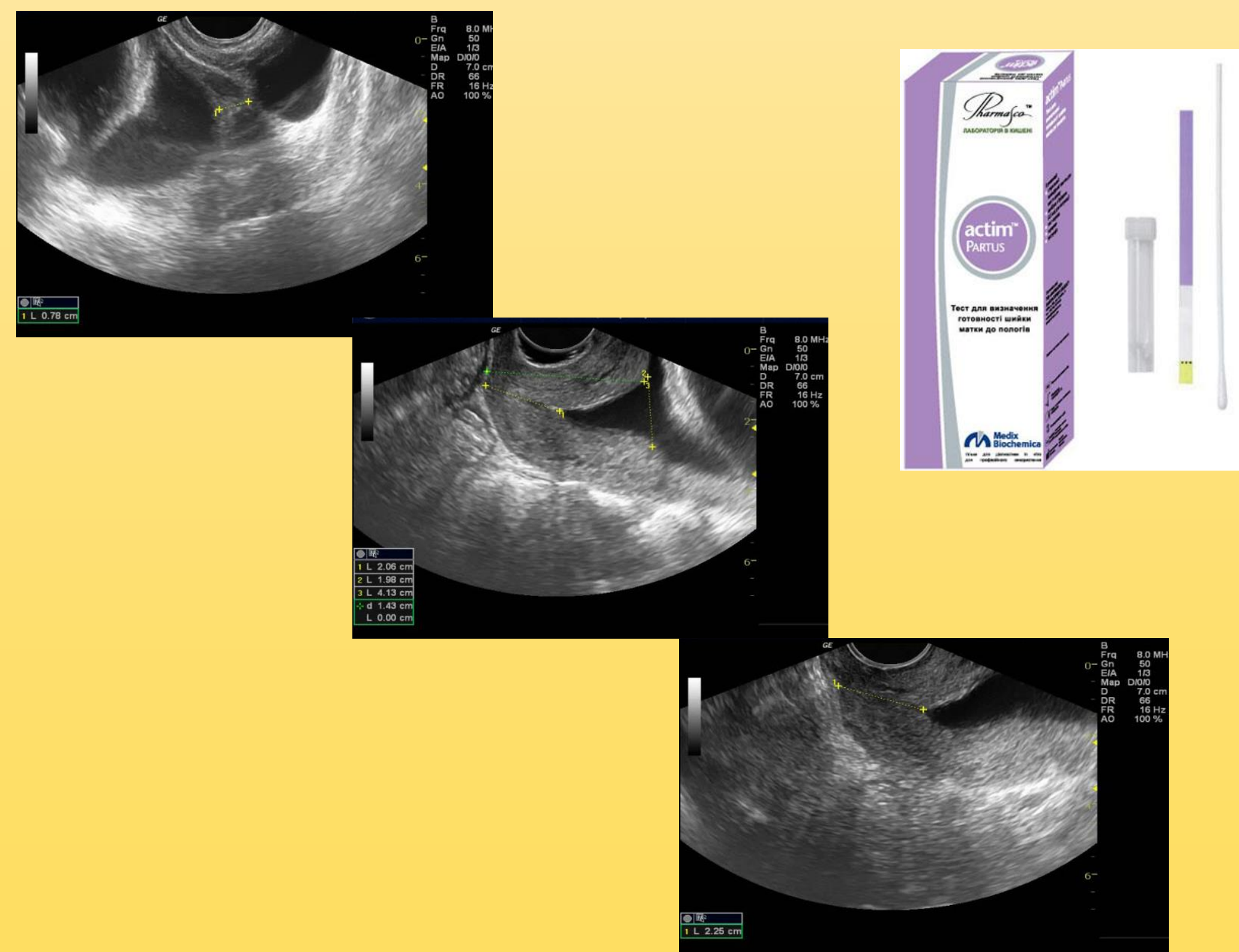
**We aimed to investigate the association of several non-invasive tests that individually support the diagnosis of premature birth: endovaginal ultrasound and some biomarkers potentially predictive of preterm birth collected from vaginal and cervical secretions.**

## Methods

We conducted a prospective study that included a group of 168 asymptomatic pregnant women with gestational age between 22-24 weeks with single pregnancy and risk of preterm birth.

We have chosen as cut-off a cervical length of 25 mm, as studies have shown it has the best accuracy. Pregnant women were then reassessed at an interval of 2 weeks to 27 weeks.

Potential predictive tests were phosphorylated isoform insulin-like growth factor binding protein-1 (phIGFBP-1– Actim Partus) and fetal fibronectin in cervico-vaginal secretions; the tests were repeated also with the measurement of the cervix.



## Conclusions

We statistically proved that cervical length measured by ultrasound may be associated with fetal fibronectin primarily and with Actim Partus secondly for a better prediction of premature birth.

Ideally, all units providing obstetric services should have access to rapid testing of fetal fibronectin and Actim Partus in order to help clinical decision making in women who present: symptomatic preterm labor between 24 and 34 weeks gestation, intact membranes and cervical length <30 mm.

## Results

- The cervical length: we obtained a high sensitivity 84,56% and a high specificity 97,42%, the accuracy of the test being 96,15%.
- The cervical funneling: the specificity of this ultrasound parameter was high, 97,26%, but the sensitivity was lower, 28,68; these considerations are supported by the positive predictive value, which was 53,42%.

Parameter	Ac (IC 95%)	Sn (IC 95%)	Sp (IC 95%)	VPP (IC 95%)	VPN (IC 95%)	LR+ (IC 95%)	LR- (IC 95%)
Cervical length	96.15%	84.56%	97.42%	78.23%	98.29%	32.81939	0.004705
Funneling	38.10%	28.68%	97.26%	53.42%	92.57%	10.47534602	0.068087039

Ac: accuracy Sn- sensitivity; Sp: specificity; VPP, VPN: the positive and negative predictive values; LR+: positive likelihood ratio ; LR-: negative likelihood ratio ; IC: confidence interval

**The use of biomarkers such as fetal fibronectin and ultrasound assessment of cervical length in the diagnosis of preterm labor gave a 80% sensitivity and specificity in predicting preterm birth.**

In the group of pregnant women who delivered prematurely, a number of 46 (33,82%) had a positive test Actim Partus. In the group of pregnant women who delivered at term, after 37 weeks, the test was positive in only 8 cases, representing 25%.

Actim Partus	NP	NT	Total
Positive	46 (33,82%)	8 (25,00%)	54
Negativ	90 (66.18%)	24 (75.00%)	114
Total	136	32	168

The specificity of fetal fibronectin test is very high, 96,86% and the sensitivity is low, 24,26%, but high enough to appreciate that this parameter has a significant value in assessing the risk of preterm birth.

Fibronectine	NP	NT	Total
Yes	33 (24.26%)	4 (3.14%)	37
No	103 (75.74%)	28 (96.86%)	131
Total	136	32	168