Correlation between increased vaginal pH and abnormalities in the vaginal flora in relation to cervical length

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Objective
To study the relation of increased vaginal pH≥4.5 with the abnormal vaginal flora and their relation to cervical length measurement in the prediction of preterm birth ≤37 weeks’ gestation and early preterm birth ≤34 weeks’ gestation.

Methods
This was a prospective study on a cohort of 100 pregnant women that were recruited from the Obstetrics outpatient clinic, Department of Obstetrics and Gynecology in collaboration with the Department of Microbiology, Faculty of Medicine, Cairo University. The studied cases were subjected to the following: Full history taking, physical examination, vaginal sterile speculum examination: vaginal pH was assessed, vaginal smear slide & 3 swabs for aerobic & anaerobic culture were taken, vaginal ultrasound was done for accurate dating, first trimester routine scanning & cervical length measurement.

Results
The rate of Increased vaginal pH (≥4.5) among our cohort was 31%; (16.6% of whom had normal flora, 43.3% had intermediate flora and 43.3% had bacterial vaginosis). A statistically significant higher difference in the mean vaginal pH in the preterm ≤37 weeks’ than the term delivery >37 weeks’. (p-value =0.025). A statistically significant higher difference in the mean vaginal pH in the preterm ≤34 weeks’ than the term delivery >34 weeks’. (p-value =0.03). The finding of LBG III being a predictor for preterm labor ≤37 weeks’ was shown with OR: 0.147, 95% CI: 0.03 – 0.729, p-value: 0.019, Overall accuracy: 77.8%. Comparing the patients with normal flora vs. those with bacterial vaginosis on the delivery ≤37 weeks’ vs. after 37 weeks’, it was statistically significant (p-value =0.01). The prevalence of Mycoplasma hominis among our cohort was 60.4%. No statistically significant difference between M. hominis +ve and –ve on the delivery ≤37 or ≤34 weeks’. No statistically significant difference in the mean cervical length between the group who had a term delivery and preterm delivery (≥34, <37 weeks). Presence of abnormalities in the vaginal flora had no statistically significant difference on the cervical length measurement.

Conclusion
An elevated vaginal pH in early pregnancy was the best predictor of preterm labor in this cohort. Different patterns of abnormal vaginal flora can be recognized at the beginning of pregnancy. The cervical length was not related to abnormalities in the vaginal flora nor had a relation to the vaginal pH.