**ABSTRACT**

Introduction: The composition of vaginal microbial community is important for pregnancy maintenance. Decreased diversity of vaginal microbiome in third trimester of human pregnancy is associated with the preterm birth. NHP have been used as a model of pregnancy-related research for decades, being especially crucial for development of therapies, counteracting effects of human teratogens. The understanding of bacterial changes in pregnancy in NHP is critical for data interpretation and analyses. We and others reported decreased presence of Lactobacilli in baboons (Papio spp), compared to human vaginal milieu, however, the reports regarding pregnancy-related changes in these species are scarce.

Methods: Vaginal swabs were taken from 5 pregnant and 5 non-pregnant baboons (Papio spp) at the end of gestation. The specimens were evaluated for the presence of colony forming units (CFU).

Results: The gram-negative bacterial CFU were increased in pregnant animals (n=26) compared to non-pregnant (n=9) and included bacilli, which are probably Achromobacter, Staphylococcus spp., Diphtheroids, etc., including novel subspecies. Increase vaginal bacterial diversity in pregnancy might be universal evolutionary phenomenon, which is independent presence of Lactobacilli spp.

**RESULTS**

**NON-PREGNANT BABOONS (Papio spp., n=5) NEAR TERM**


2) Culture overgrown with Proteus mirabilis. Able to isolate staphylococcus spp.

3) Staphylococcus aureus. Diphtheroids (Eg. Corynebacterium spp or other). Beta Haemolytic Streptococcus.

4) Probable Providencia spp Staphylococcus aureus Beta haemolytic Streptococcus.

5) Staphylococcus spp (not Staph aureus). Coliform- probably not E.coli. Beta- haemolytic streptococcus spp Diphtheroids (Eg. Corynebacterium spp

**PREGNANT BABOONS (Papio spp., n=5) NEAR TERM**

1) Two types of Staphylococcus aureus

2) Yellow mucol oxidase positive (resembles enterococcus). White mucol NH oxidase positive (resembles pseudomonas aeruginosa). Gray waxy spread oxidase positive (resembles achromobacter). Beta-hemolytic streptococci

**DISCUSSION**

The decreased vaginal epithelial thickness, reported in the baboons and humans (DOI:10.4314/eamj.v86i4.46946), might change properties of the vaginal bacterial flora, described by us in humans (Fig. below) and transform bacterial life stages.

![Figure 2. Graphical representation of the vaginal colony-forming units present in non-pregnant and pregnant baboons.](image)

**Figure 2.** Graphical representation of the vaginal colony-forming units present in non-pregnant and pregnant baboons.

**Figure 3.** The vaginal epithelial folding in non-pregnant and pregnant baboon.

**Table 1. List of different bacterial species found in the vagina of non-pregnant and pregnant baboons.**

<table>
<thead>
<tr>
<th>Bacterial Species</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staphylococcus aureus</td>
<td>White mucoid NH oxidase positive (resembles pseudomonas aeruginosa). Gray waxy spread oxidase positive (resembles achromobacter). Beta-hemolytic streptococci</td>
</tr>
<tr>
<td>Enterobacter</td>
<td>Yellow mucol oxidase positive (resembles enterococcus). White mucol NH oxidase positive (resembles pseudomonas aeruginosa). Gray waxy spread oxidase positive (resembles achromobacter). Beta-hemolytic streptococci</td>
</tr>
<tr>
<td>Beta Haemolytic Streptococcus</td>
<td>Red gram-negative bacillus</td>
</tr>
<tr>
<td>Staphylococcus</td>
<td>Other gram-negative bacilli</td>
</tr>
</tbody>
</table>

**ACKNOWLEDGEMENT**

Authors are thankful to the Department of obstetrics and Gynecology (Dept. Chair Dr. Moss Hampton) for continuous support. We are grateful to the personal of the baboon Research resources center for their expertise and help with organization and performance of this study.

[Image of Table 1]