BACTERIOLOGIC ASPECTS OF THE CERVICAL MUCUS PLUG

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Proximal and distal CMP specimens and vaginal swabs were obtained from term pregnant women (n=22). The total bacterial count was determined by 16SrDNA qPCR and Ureaplasma parvum, Ureaplasma urealyticum and Mycoplasma hominis by specific qPCR. For histological analyses, CMP slides were stained with H&E and Gram. Immunohistochemistry was performed with antibodies specific for inflammatory cells.

METHODS

Proximal and distal CMP specimens and vaginal swabs were obtained from term pregnant women (n=22). The total bacterial count was determined by 16SrDNA qPCR and Ureaplasma parvum, Ureaplasma urealyticum and Mycoplasma hominis by specific qPCR. For histological analyses, CMP slides were stained with H&E and Gram. Immunohistochemistry was performed with antibodies specific for inflammatory cells.

RESULTS

The cellularity and the composition of cells in the distal and in the proximal specimen did not differ, the median number of macrophages, the most abundant cell type in the CMP, was 228 (156-378) in distal specimens and 220 (170-277) in proximal specimens. Using 16SrDNA qPCR the median concentration of bacteria in the proximal specimens was 6x10^3 (2.2x10^3 – 3x10^5) geq/g and in the distal specimens it was 5x10^4 (3x10^4 – 3x10^5) geq/g. The median ratio between the distal and proximal specimens was 2.6 (95% CI: 1.0 – 5.7). U. parvum was the most frequently detected Ureaplasma species; positive in seven of 17 women in their vaginal swabs, of which six were also positive in their distal CMPs. The median ratio of U. parvum between the vagina and the proximal CMP specimens was 191 (33 - ∞) geq/g.

CONCLUSION

The CMP inhibits, but does not block the passage of Ureaplasma parvum on its ascending route from the vagina through the plug.