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Reproductive failure: An aftermath of vaginal colonization with sperm impairing microorganism in mouse model

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Infertility in females as a consequence of asymptomatic microbial colonization of genital tract is under-acknowledged. A number of microorganisms have been known to elicit multiple deteriorative effects on sperm parameters *in vitro*, but their impact on fertility under in vivo conditions is still being argued. Earlier in our laboratory, infertility as a result of vaginal colonization with sperm impairing micro-organisms *viz. Staphylococcus aureus, Escherichia coli, Serratia marcescens and Candida albicans* has been observed. Therefore, the present study was designed to evaluate the impact of other uropathogens *viz*. sperm immobilizing *Pseudomonas aeruginosa* and non spermagglutinating/immobilizing *Proteus mirabilis* and *Enterococcus faecalis* on fertility outcome. The doses of 10^4, 10^6, 10^8 cfu of P. aeruginosa/*P. mirabilis/E. faecalis* was administered intra-vaginally into female Balb/c mice for 10 consecutive days followed by mating with proven breeder male on day 12. The results showed that female mice were rendered infertile in the group receiving *P. aeruginosa*. In contrast the group receiving non spermagglutinating/immobilizing strains showed abdominal distension, string of pearls and finally delivered pups at the end of gestation period. Further, no histopathological changes were observed in reproductive organs *viz*. ovary, uterus and vagina of mice in all the groups. Moreover, there were no significant changes in the malondialdehyde levels of vaginal tissue homogenates of all the groups as compared to control. In conclusion, female reproductive tract may be occasionally inhabited by uropathogens without producing any evident symptoms and this colonization with sperm impairing microbes can substantially contribute to adverse fertility outcomes.

Biography

Harpreet Vander has completed her MSc (Hons) in Microbiology in Department of Microbiology at Panjab University, Chandigarh, India and currently pursuing her Doctoral degree in the same. She has published seven papers in reputed journals. Her abstract entitled "Uropathogenic microorganisms and female infertility: An *in vivo* study" has been ranked among the first 100 best works in 17th World Congress on Gynecological Endocrinology held in March 2016 at Florence, Italy.

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