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Microorganisms in Seminal Samples with and without Pyospermia: Relevance for Assisted Reproduction Technologies (ART)

Seneviratne, HR[1]; Wijeratne, S[1]; Kahawachchi, A[1]; Parkeshwara, D[1]
[1]*Vindana Reproductive Health Centre, Sri Lanka*

Introduction: Pyospermia is said to indicate male genital infection. Microorganisms may colonize the seminal plasma and therefore co-exist with spermatozoa in the lumen or may invade the genital tract wall causing an inflammation. Pyospermia would be more likely in the latter. In our experience inspite of prior antibiotic treatment seminal microorganisms have seriously affected the growth and survival of embryos at ART. This study aims to determine:

1. The prevelance and range of microorganisms in seminal samples used in ART and in the programme for sperm donation
2. The relevance of pus cells in the semen for microbial presence
3. The relationship of microorganisms to sperm parameters

Method: Using WHO criteria seminal samples were analysed from 99 subjects and bacterial culture was performed. The data obtained was analysed.

Results: Pyospermia was absent in 78 subjects (group A) and present in 21 subjects (Group B). Bacterial cultures were positive to a similar extent in both groups at 65.4% (n = 51) and 66.7% (n = 14) in group A and B respectively. Single organisms were grown in 76% (n = 39) of Group A and 92.3% (n = 13) in Group B, while two organisms were found in 24% (n = 12) and 7.7% (n = 1) respectively. The range of organisms were similar [illegible] aureus being the commonest. Samples with pyospermia [illegible] poorer seminal parameters. A significantly higher prevelance of terratozoospermia (71.4%) was noted in the culture positive samples of Group B when compared to those with positive microorganism growth in group A (56.4%).

Conclusions: Pus cell counts do not truely represent the presence of microorganisms in semen samples. Pyospermia in samples with positive bacteria cultures appear to be associated with greater structural damage to spermatozoa which may therefore be due to inflammation of the genital tract rather than colonization. The presence of microorganisms in the seminal fluid irrespective of the status of pyospermia is a potential source of infection during ART.