

P25

An overview of STIs and semen parameters over a 7 year period of males seeking infertility treatment at Steve Biko Academic Hospital

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INTRODUCTION:

Sexually transmitted infections (STIs) can contribute to primary and secondary infertility in individuals and couples. The correct clinical management, i.e. diagnosis and treatment of STIs will result in improved reproductive outcomes for couples seeking infertility treatment.

AIM:

To determine and compare the changes in semen parameters, and STI prevalence in male patients following an initial semen evaluation in 2008-2009 (T1) and in 2013-2014 (T2).

MATERIALS AND METHODS:

South African males that visited the Reproductive and Endocrine Unit in T1 (n=303) and T2 (n=515) were screened for infections as part of an initial infertility workup. Semen samples were submitted for pathology screening for *Chlamydia trachomatis* (CT), *Ureaplasma urealyticum* (UU), *Mycoplasma hominis* (MH), and bacterial culture which included growth of *Neisseria gonorrhoeae* (NG). Blood samples from patients were also submitted for HIV-1 testing.

RESULTS:

The majority of couples (T1 and T2) resided in Gauteng (70%). The mean age for males and females in both time periods (T1 and T2) were 37 years of age (range 22-62 years) and 33 years of age (range 20-46 years), respectively. The results from neat semen samples for T1 vs. T2 indicated sperm morphology ($\leq 4\%$) 53.04% vs. 37.8% ($p > 0.05$), sperm motility ($\leq 40\%$) 13.26% vs. 22.4% ($p > 0.0019$) and concentration with a mean value of $53.43 \times 10^6/\text{ml}$ vs. $47.01 \times 10^6/\text{ml}$ ($p > 0.0097$).

Neisseria gonorrhoeae and *Chlamydia trachomatis* were not found in semen in the reported time periods. The isolation of the microorganisms indicated during T1 and T2 were:

(i) UU - 15.9% & 13.13%; (ii) MH - 7.07% & 1.43%. For HIV sero-concordant couples and sero-discordant males the results were 9.3% & 3.3% and 16.33% & 9.13%, respectively.

CONCLUSION/DISCUSSION:

- Over the past 7 years, the prevalence of STIs has remained fairly stable amongst males seeking infertility treatment.
- Results from the study indicated a significant difference in sperm morphology and concentration between the two timeframes, possibly due to changes in quality control measures and subjective variance when performing semen evaluations, and not necessarily as a result of pathological implications.
- The non-detection of CT and NG may not reflect the true incidence due to test-sample incompatibility, nevertheless the screening of MH and UUs is of importance to prevent any pathologies impacting on infertility and subsequent assisted reproductive outcomes.

Through extensive research and development of the semen decontamination technique, our unit has become specialists in the procedure, however the number of HIV-1 sero-positive patients attending the unit has fluctuated as semen decontamination is now accessed nationwide.