Objective: When computer assisted semen analysis systems were brought into the marketplace, it was suggested that these machines could replace the technician; however, this hope was not realized when these machines failed to provide accurate results. On the other hand, these machines are capable of providing movement characteristics of spermatozoa. The goal of our study was to evaluate aspects of sperm movement (kinetics) in a fertile and infertile population.

Design: Retrospective study at a tertiary care institution

Materials and Methods: From September 1999 to August 2002, 670 infertile men (Group A) and 889 vasectomies for voluntary sterilization (fertile men; Group B) purposes were included in our study. The mean age was 38.04 ± 7.14 in the infertile group and 35.04 ± 6.14 in the fertile group (p > 0.05). We compared sperm concentration, motility, straight-line velocity (VSL), curvilinear velocity (VCL), average path velocity (VAP), linearity (LIN), and amplitude of lateral head displacement (ALH) between the two groups. In addition, we compared the sperm motion characteristics between fertile (n = 280) and infertile men (n = 175) with normal sperm motility according to the World Health Organization. We used ANOVA for statistical evaluation.

Results: Differences were seen (p < 0.0001) between groups A and B in sperm concentration (40.29 ± 53.23 and 112.25 ± 81.62) and sperm motility (36.94 ± 28.6 and 60.83 ± 15.4). Also, differences were detected in the sperm motion characteristics evaluated (p < 0.0001): VSL (21.23 ± 19.22 and 40.41 ± 10.36), VCL (40.81 ± 43.5 and 52.27 ± 16.65), VAP (26.13 ± 22.52 and 48.36 ± 10.91), LIN (32.44 ± 26.5 and 55.21 ± 3.12), and ALH (1.86 ± 1.92 and 3.09 and 0.94). VSL (P = 0.001), VAP (P = 0.001) and LIN (P = 0.017) were lower in infertile men with normal semen analysis compared to normal fertile men. However, VCL (P = 0.143) and ALH (P = 0.698) did not differ between patients with normal semen analysis and donors.

Conclusion: Certain sperm motion characteristics measured by CASA may have the power to answer why patients with normal semen analysis may be infertile. However, more studies should be done to evaluate the role of sperm motion characteristics in male infertility investigation.

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