Ureaplasma urealyticum (UU) is a commensal of the lower genitourinary tract of sexually experienced adults. Investigators have isolated UU with greater frequency in infertile marriages. To confirm a possible association between UU and abnormal sperm function parameters, we conducted a prospective study at our tertiary care center. Fifty-five consecutive male patients seeking general urology consultation for lower urinary tract symptoms were evaluated. Urine and semen specimens were obtained for UU, chlamydia and localization cultures. Specimens from 21 normal donors were used as controls. Specimens were analyzed by a computer-assisted semen analyzer for concentration, percent motility and sperm motion characteristics. Leukocytospermia was measured by the Endtz test. In a second specimen from all subjects, reactive oxygen species (ROS), acrosome reaction (AR), and mannose binding assay (MBA) tests were conducted. Five patients were excluded from subsequent study due to the following: Positive cultures other than ureaplasma (n = 2), varicocele (n = 1), and cryptorchidism (n = 2). Seventeen patients had positive UU cultures; their other cultures were negative. UU positive patients had significantly higher ROS levels (2391.82 ± 1141.54) than negative patients (1038.22 ± 555.63) (p = 0.006) or donors (63.9 ± 30.9)(p = 0.02). Leukocytospermia was detected in only one out of 17 specimens (6%). Leukocytospermia was detected among four of the initial ureaplasma negative patients. UU positive semen specimens also had poor concentration, motility, and morphology which at this time was not significantly different from the UU negative specimens. AR and MBA results did not differ between the UU positive, UU negative, and the donors. The seminal ROS level is elevated in UU positive patients. ROS induces lipid peroxidation which decreases membrane fluidity and sperm fertilizing capability. Absence of leukocytospermia is an unreliable indicator for exclusion of genitourinary infection.