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Zinc, Magnesium and Gamma Glutamyltransferase levels in Human Seminal fluid

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Objectives: The purpose of this study was to determine the levels of Zn, Mg and γ-GT in seminal fluids as an indirect method for the evaluation of the excretory function of the prostate gland.

Subjects: Seminal fluid specimens were collected from 167 Jordanian males referred for infertility investigation.

Methods: Descriptive seminal fluid analyses were performed on all samples according to WHO standards, and were divided into four groups: normospermia (n=70); oligospermia (n=50), azoospermia (n=22) and asthenospermia (n=25). Zn and Mg were determined in the seminal plasma of each group by atomic absorption spectrophotometery and γ-GT was determined by enzymatic method.

Results: Compared with the other groups, oligospermic group had the highest proportion of specimens with abnormal liquefaction (26.0%) and leukocyte counts (32.0%). Both oligospermic and asthenospermic groups had comparable sperm motility, which was lower than that in normospermia ($p < 0.05$). The mean levels of γ-GT and Mg in oligospermia were significantly lower than that in all other groups. The mean Zn levels in oligospermia and azoospermia were lower than that in the other two groups. Significant positive correlation was observed between γ-GT, Zn and Mg in all four groups. The mean levels of γ-GT, Zn and Mg correlated positively with sperm count and motility only in the normospermic group.

Conclusion: The presence of a high ratio of leukocytes in association with decreased levels of Zn, Mg and γ-GT in oligospermia, suggests disturbed function of the prostate gland, most probably due to infection. Measurement of these parameters may shed some light on the treatment and management of oligospermic infertile men.