The Relationship Between Semen Malondialdehyde (MDA) Levels and Semen Parameters in Adults with Grade 3 Varicocele

Introduction and Objectives: It is known that in patients with varicocele, free oxygen radicals in semen increases, and thus the harmful effects occur. However, the effects of free oxygen radicals in the presence of varicocele on the parameters in the spermiogram are not clear. In this study we investigated the relationship between semen malondialdehyde (MDA) which is a free oxygen radical in semen and spermiogram parameters.
Materials and Methods: Patients who applied to the Corlu Military Hospital Urology Clinic suffering from varicocele were included in this study. Spermiogram test was performed in the patients in whom clinically grade 3 varicocele was detected. After the samples collected for spermiogram, leukocytes were separated in the rest of the semen and MDA levels were studied in the semen fluid. Patients were grouped as sperm count <5 million / ml, <15million/ml, ≥ 15milllion/ml; progressive motility (A + B) <32%, ≥ 32% and total motility (A + B + C) <40% and ≥ 40%. The relationship between semen MDA levels and groups was questioned by Kruskal-Wallis and Mann-Whitney U tests.
Results: The mean age was 21.8 of the total 88 patients enrolled in the study. The sperm count was <5 million / ml in 13 patients (14.8%), <15million/ml in 29 (32.9%), and ≥ 15million/ml in 40 (45.5%); progressive motility (A + B) <32% in 11 (12.5%), and ≥ 32 in 77 (87.5%); the total mobility (A + B + C) <40 in 11 (12.5%), and ≥ 40% in 77 (87.5%). The median value of the semen MDA levels was 0.98 (min: 0.19 - max: 2.64). When groups were compared according to MDA levels in only those with sperm counts below 15 million had more statistically significant results ($p<0.05$) compared to those above.
Conclusion: In adult patients with varicocele, a relationship was found between the MDA levels which are free oxygen radicals in semen and the sperm number. This finding supports the critical limit of 15 million/ml established by the World Health Organization (WHO), in 2010. Larger series are required examining this topic. Conflict of interest: None