

ASSOCIATION BETWEEN BODY MASS INDEX AND SPERM QUALITY: VOLUME, CONCENTRATION, MOTILITY AND MORPHOLOGY

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Obesity is becoming a serious problem, especially in industrialized societies. The relationship between body mass index (BMI) and alterations in semen analysis parameters are described in the literature. High BMI has been associated with reduced semen quality, which may affect fertility. The objective of this study was to explore the association between BMI and semen quality. A retrospective study of 36 male patients, who presented for clinical evaluation in our services in 2012 was conducted. The patients were divided into two groups: eutrophic BMI < 25kg/m², n = 10 and overweight/obese BMI ≥ 25kg/m², n = 26. Exclusion criteria: azoospermia, previous infertility treatment, use of drugs or medicines that can alter spermatogenesis, vasectomy, diagnostic of varicocele treated or not, cryptorchidism or surgical and clinical problems at risk for fertility, and smoking. Ejaculate volume, sperm concentration, percentage of progressive motile spermatozoa and morphology were analyzed. For statistical analysis T-test followed by Mann-Whitney test was used, using the SigmaPlot 12.0 program. No significant difference was found between groups. However the mean values of the semen parameters were lower in the group BMI ≥ 25kg/m² in comparison with BMI < 25kg/m²: concentration (35,1± 27,5 M/mL vs 52,3± 38,5 M/mL), motility (45,5± 19,4% vs 52,8± 16,1%) and morphology (2,9± 1,5% vs 4,2± 2,7%). Furthermore, the group BMI ≥ 25kg/m² had a higher percentage of patients with semen parameters below the WHO reference standards, in comparison with the group BMI < 25kg/m² (volume < 1,5 ml: 4% vs 0%; concentration < 15M/ml: 35% vs 20%; motility < 32%: 27% vs 10%; morphology < 4%: 65% vs 50%). In conclusion, our results suggest that BMI may alter the semen quality resulting in low concentration, less mobile spermatozoa and worse morphology. To confirm these results we suggest further investigations with the expansion of the sample size.

Keywords: sperm quality, body mass index, obesity