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Selenium supplementation enhances the element concentration in blood and seminal fluid but does not change the spermatozoal quality characteristics in subfertile men

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The objective of this study was to evaluate the effect of selenium (Se) supplementation on Se concentration and glutathione peroxidase (GSH-Px) activity in blood components and seminal fluid and on spermatozoal quality characteristics in subfertile men. Thirty-three men were supplemented for 12 weeks with 200 micrograms Se/day in the form of yeast-rich Se (group I, n = 16) or sodium selenite (group II, n = 17). Blood samples and sperm were collected at the start of the study and after 2, 4, 8, and 12 weeks following Se supplementation. Se concentration in whole blood and plasma and GSH-Px activity in red cells and plasma increased significantly during the study, but in the group supplemented with yeast-Se the effect was more pronounced. Se concentration in seminal fluid also increased in both groups, but the effect of yeast-Se was markedly higher than that of selenite. In both groups statistically significant correlations were found between Se concentration in plasma and seminal fluid. GSH-Px activity in seminal fluid in the yeast-Se group increased significantly and reached a plateau after 2 weeks, whereas in the selenite group the activity did not change throughout the whole study period. Weak correlations between Se concentrations and GSH-Px activities in seminal fluid were seen, but only in the yeast-Se group were the relations statistically significant. The subjects in both groups showed no response in sperm count, motility, and morphology. In conclusion, we can ascertain that the supplementation of subfertile men with yeast-rich Se showed a more pronounced effect on Se concentrations and GSH-Px activities in blood components and seminal fluid than selenite did. Se supplementation did not improve the spermatozoal quality characteristics of sperm count, motility and, morphology.

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