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Review Article

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Effect of Dietary Intake of Supplement Fertylor15 Containing Astaxanthin and Other Compounds on Human Sperm: In Vivo and In Vitro Study

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Abstract

Chronic stress and endocrine disorders that result from environmental pollution, reactive oxygen species (ROS), and genetic abnormalities, are responsible of the idiopathic infertility. The aim of this study was to investigate the effect of a daily intake of supplement containing astaxanthin (Asta), known to ameliorate sperm viability in in vitro conditions, and other elements, on semen quality. Sperm from 34 volunteers were analyzed before (T_0) and after (T_1) 30 days of intake of supplement containing Asta, zinc, selenium, arginine, vitamins C and E, Coenzyme Q10 and folic acid. Semen parameters (sperm concentration, motility, morphology) and biochemical properties (rafts shifting, tyrosine phosphorylation (Tyr-P) and acrosome reaction (AR)) were evaluated. In additional 18 volunteers, Asta, all other components or both were analyzed also in in vitro conditions. Results show an improvement of sperm quality with a decrease of membrane-bound IgG. The percentages of cells achieving capacitation and AR were increased (28±8 to 52±10%, p<0.0001, and 24±5 to 46±7%, p<0.0001, respectively). The in vitro study assessed that Asta and other compounds had a synergistic positive effect on all the biochemical parameters, with no sperm DNA fragmentation. In conclusion, this dietary intake would be helpful in the treatment of no-complicated idiopathic infertility.

Keywords: Human Sperm Capacitation; Agglutination; Acrosome Reaction; Astaxanthin