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(616) EFFECT OF MULTICOMPONENT ANTIOXIDANT THERAPY ON SEMEN PARAMETERS AND PREGNANCY OUTCOMES IN INFERTILE MEN

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Introduction: A large proportion of male infertility remains idiopathic, with oxidative stress recognised as a major contributing factor. Antioxidant supplementation has been widely explored as a therapeutic approach, and some studies indicate benefits for semen quality and pregnancy outcomes. However, the optimal treatment duration and its precise effect on fertility success are not clearly established.
Objective: This study aimed to evaluate the impact of a multi-component antioxidant dietary supplement on semen parameters and pregnancy rates in infertile men.
Methods: A prospective analytical study was conducted between September 2021 and October 2024. Male patients diagnosed with infertility underwent baseline semen analysis and received an oral antioxidant supplement twice daily for at least 3 months (up to 9 months). The supplement contained L-carnitine, L-arginine hydrochloride, L-glutathione, vitamins C, E, B6, B12, D3, folic acid, coenzyme Q10, zinc, copper, and selenium. Follow-up semen analysis was performed after 3 months. Out of 237 screened men, 149 met inclusion criteria. The mean patient age was 31.9 years, and the mean infertility duration was 2.46 years. Assessed parameters included sperm concentration (≥15 million/mL), progressive motility (≥32%), total motility (>40%), and morphology (>4% normal forms). Statistical analysis was performed using the Kolmogorov–Smirnov test, Wilcoxon signed-rank test, and Kaplan–Meier survival analysis.
Results: At baseline, 83.7% of participants showed one or more abnormal semen parameters. Based on these, four groups were defined: • Group 1: No abnormalities (n=23) • Group 2: One abnormal parameter (n=58) • Group 3: Two abnormalities (n=42) • Group 4: Three abnormalities (n=26) After treatment, significant improvements were observed in sperm concentration, progressive motility, total motility, and morphology in most groups. Exceptions included sperm concentration in Groups 1 and 3, and morphology in Group 1, where changes were not statistically significant. During the follow-up period, 41.6% of participants achieved pregnancy. The highest success rate (80%) occurred in men with normal semen parameters, with a median time to conception of 93 days. Groups with one and two abnormalities achieved pregnancy rates of 55.5% and 21.4%, with median times of 165 and 189 days, respectively. No pregnancies occurred among men with three abnormal parameters.
Conclusions: The multi-ingredient antioxidant supplement significantly improved semen quality, especially in men with mild to moderate abnormalities. The most notable improvements were in sperm motility-an essential factor for fertilization. Pregnancy outcomes were best among men with normal baseline semen profiles, while those with severe oligoasthenoteratozoospermia showed no benefit. These findings suggest that antioxidant therapy may enhance reproductive outcomes in selected cases of male subfertility but has limited efficacy in severe infertility.
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