ABSTRACT

The study was to investigate whether alpha tocopherol has effect on sperm motility, velocity and abnormal mid-piece (neck) in Rattus norvegicus with stressor.

A double - negative and positive-controlled was performed. Thirty five Rattus norvegicus (200-300 g body weight) were investigated. P (1) 7 of them received alpha tocopherol 50 mg/Kg BW; P (2) 7 of them received alpha tocopherol 100 mg/Kg BW; P(3) 7 of them received alpha tocopherol 200 mg/Kg BW—all received stressor for 21 days.

That’s not a significant in the percentage of sperm motility in the treated alpha tocopherol 50 mg/Kg BW was observed when compared to the positive control (0.122143±0.061091 versus 0.120357±0.049737, p<0.05), percentage of the sperm velocity was increased (20.2143±3.7401 versus 23.4286±1.3048, p<0.05), while mid-piece sperm abnormality decreased significantly (7.2500±1.0897 versus 3.3929±0.9449, p<0.05).

Significant increase in the percentage of sperm motility in the treated alpha tocopherol 100 mg/Kg BW was observed when compared to the positive control (0.122143±0.061091 versus 0.213214±0.097796, p<0.05), percentage of the sperm velocity was also increased (20.2143±3.7401 versus 29.0714 ± 1.2051, p<0.05), while mid-piece sperm abnormality decreased significantly (7.2500±1.0897 versus 2.2500 ± 0.8539, p<0.05).

That’s not a significant increase in the percentage of sperm motility in the treated alpha tocopherol 200 mg/Kg BW was observed when compared to the positive control (0.122143±0.061091 versus 0.193210±0.055372, p<0.05), percentage of the sperm velocity was also increased (20.2143±3.7401 versus 22.2143±1.8225, p<0.05), while mid-piece sperm abnormality decreased significantly (7.2500±1.0897 versus 5.8929± 0.5563, p<0.05).

The conclusion of the study is that 1) The stressor can be decrease sperm motility, was also decrease sperm velocity and increase mid piece sperm abnormality 2) The treated alpha tocopherol 50 mg/Kg BW was observed when compared to the positive control, constant sperm motility, increase sperm velocity and decrease sperm abnormality 3) Alpha tocopherol when given at a dose of 100 mg/Kg BW was proven to be effective in restoring some of the sperm morphology and functions such as motility, velocity and normal morphology. 4) Alpha tocopherol when given at a dose of 200 mg/Kg BW was responsible for the pro-oxidant. 5) Positively correlated between sperm motility vs sperm velocity; while negatively correlated between mid piece sperm abnormality vs sperm motility and sperm velocity.

Key word: Alpha tocopherol, sperm motility, sperm velocity