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AMELIORATING EFFECTS OF COCONUT WATER ON

SPERM QUALITY AND SELECTED ORGANS HISTOLOGY

IN MONOSODIUM GLUTAMATE PRE TREATED MALE MICE (*Mus musculus*)

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ABSTRACT

This study was conducted to determine the effect of both monosodium glutamate (MSG) and coconut water on sperm quality of *Mus musculus*. Twenty adult mice weighing between 25-30 g were randomly divided into four groups. Group A (Control), received saline solution; Group B received 2 g/kg b.wt of MSG; Group C received administration of both coconut water (10 mL/kg b.wt) and MSG (2 g/kg b.wt); and Group D was given coconut water (10 mL/kg b.wt) only. Treatments were given daily for a duration of 15 days. Results revealed the MSG treated group showed a significant reduction ($p < 0.05$) in sperm concentration, motile sperm, and viable sperm with values $23 \times 10^6/\text{ml}$, 19.59%, and 16%, respectively. Group C which received both of MSG and coconut water showed significant improvement ($p < 0.05$) in sperm concentration, motile sperm, and viable sperm which were $47.4 \times 10^6/\text{ml}$, 66.69%, and 30.6%, respectively. Several histological alterations were observed in the testes of MSG treated mice. However, the co-administration of MSG and coconut water was proven to be beneficial for the improvement of sperm concentration, motility, and viability. Also, coconut water group showed improved architectures of testes compared to the MSG treated mice. In conclusion, MSG had severely affected sperm quality but co-administration of both coconut water and MSG had indicated ameliorating effects of coconut water towards its negative impact.

Key words: Monosodium glutamate, coconut water, infertility, sperm quality, testes