

Comparative Evaluation of the Effect of Sodium Nitrite on Reproductive Organ Weights and Sperm Count in Rats and Mice

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Sodium nitrite (NaNO_2) is a water soluble compound, well-known as a principal food preservative and colorant in the food industry. Besides the variety of industrial and medicinal applications, toxicity to humans and animals is well documented after nitrite overexposure. In the testis changes in hormonal profile and vascularisation have been reported. The current study aimed comparative assessment of early effects of acute NaNO_2 treatment on reproductive organ weights and indices in tandem with sperm count in rats and mice. Spermatozoa were isolated from both vas deferens and counted. An increase in testis weight and gonado-somatic index was found in tandem with reduction in epididymis weight and sperm count in both species following acute NaNO_2 treatment. Our comparative analysis on macro parameters of rat and mouse reproductive organs (testis and epididymis) and sperm counts suggest that mice are more vulnerable to the exposure to NaNO_2 than rats.

Key words: sodium nitrite, hypoxia, sperm count