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Poster Presentations

P-9

Effects of monosodium glutamate on apoptosis of germ cells in testicular tissue of adult rat: An experimental study

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Background: Monosodium glutamate (MSG) is used as a flavoring and food seasoning. Some studies have reported the oxidative effects of using this substance on various tissues.

Objective: This study has investigated the effects of MSG and the protective effect of vitamin C (Vit C) on apoptosis of testicular germ cells and biochemical factors.

Materials and Methods: In this experimental study, 24 adult male Wistar rats were randomly divided into four groups: control (received distilled water), Vit C group (150 mg/kg), experimental group 1 (MSG 3 gr/kg), experimental group 2 (MSG 3 gr/kg + Vit C 150 mg/kg). The rats were gavaged for 30 days and then were sacrificed, the right testis was isolated for biochemical examinations for the glutathione, malondialdehyde, and left testis used in histological experiments. Tunnel staining was used to determine the number of apoptotic cells.

Results: The results showed that apoptotic cells in the MSG group had a significant increase compared to the control group ($p = 0.001$), but the number of these cells in the MSG co-administered with Vit C and Vit C groups was significantly lower than the MSG group. Germinal epithelial thickness also decreased in the MSG group compared to the control group.

Conclusion: MSG can lead to increase apoptotic changes in the germinal epithelial of the testicle, and Vit C as an antioxidant can modify the pathological and biochemical changes induced by MSG.

Key words: *Apoptosis, Monosodium glutamate, Rat, Testis, Vitamin.*

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