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Oral Presentations

O-3

The effect of Diazinon on cell proliferation and apoptosis in testicular tissue of rats and the protective effect of vitamin E

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Background: Diazinon (DZN) is an organophosphate pesticide, and nowadays this pesticide is mostly used in agriculture. In this study, we analyzed the effects of DZN and vitamin E (Vit E) on apoptosis and the proliferation of germ cells in rat testis.

Objective: This study aimed to examine the effect of diazinon on apoptosis and the proliferation of germ cells in rat testis and the protective effect of vit E.

Materials and Methods: In this experimental study, 30 male Wistar rats were divided into five groups (n = 6 per group) consisting of control, sham (received olive oil), experimental group I (60 mg/kg DZN),

experimental group II (60 mg/kg DZN and 200 mg/kg Vit E), and experimental group III (200 mg/kg Vit E). After six wks, left testis of rats was removed for the detection of proliferative cell nuclear antigen (PCNA) and terminal deoxynucleotidyl transferase end-labeling (TUNEL).

Results: Compared with the control group, DZN in the experimental group I decreased the number of PCNA positive cells and increased the number of TUNEL-positive cells ($p < 0.001$). Vit E improved detrimental changes by the decrease in the rate of apoptosis and the increase in the proliferation of testicular germ cells ($p < 0.001$).

Conclusion: Vit E can decrease the number of TUNEL-positive cells and increase the number of PCNA-positive cells by the neutralization of the toxicity caused by DZN in the testicular tissue.

Key words: Apoptosis, Diazinon, Proliferation, Testis, Vitamin E.

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