

$\leq 0.05$  was considered as significant (16).

### **Results**

**In model one**, 5% acetic acid- 30% ethanol induced severe gross and microscopical damage in colon with marked increments in weight of colonic segment. Gross score and colon segment weight of zinc sulfate group were not significantly different from that of the control and of the prednisolone groups ( $p > 0.05$ ), (Figures 1, 2 and 3).

Microscopical score of zinc sulfate group was also not significantly different from that of the control group ( $p > 0.05$ ), but, it was significantly lower than prednisolone group ( $p < 0.05$ ) (Figure 4).

**In model two**, 2% acetic acid induced a less severe form of inflammation in colon; yet, it had a marked effect in reducing the body weight of rabbits and with evident gross and microscopical damage in colon.

Zinc sulfate treatment and prednisolone treatment reduced the loss of body weight of rabbits in comparison to the control group (Table 2).

The mean ( $\pm$ SEM) post-induction rectal temperature for control group ( $38.78 \pm 0.2^\circ\text{C}$ ) showed a statistically insignificant ( $p > 0.05$ ) increment from the mean pre-induction readings ( $38.55 \pm 0.14^\circ\text{C}$ ). On the other hand, post-induction readings for zinc sulfate group ( $38.73 \pm 0.17^\circ\text{C}$ ) and post-induction readings for prednisolone group ( $37.84 \pm 0.38^\circ\text{C}$ ) decreased insignificantly ( $p > 0.05$ ) from mean pre-induction readings ( $38.94 \pm 0.21^\circ\text{C}$ ), and ( $38.61 \pm 0.15^\circ\text{C}$ ) respectively.

When comparing mean post-induction rectal temperature of zinc sulfate group and prednisolone group

to the corresponding readings of control group, the differences were insignificant ( $p > 0.05$ ), while when comparing corresponding readings of prednisolone and zinc sulfate group, there was a significant decrease ( $0.01 < p < 0.05$ ) in mean post-induction rectal temperature of prednisolone group, (Figure 5).

The mean ( $\pm$ SEM) colon segment weight of zinc sulfate group ( $2.02 \pm 0.14$  mg) and prednisolone group ( $1.87 \pm 0.16$  mg) were insignificantly ( $p > 0.05$ ) more than that of the control group ( $1.76 \pm 0.10$  mg), (Figure 6).

Compared to that of prednisolone group, the mean weight of colon segment of zinc sulfate group did not differ significantly ( $p > 0.05$ ).

The means gross histological score significantly lowered in zinc sulfate group and prednisolone group in comparison to the control group ( $p < 0.05$ ) (Table 3) and (Figure 7).

The mean microscopical score was significantly lowered in zinc sulfate group and prednisolone group in comparison to the control group ( $p < 0.05$ ) (Figure 8).

The effects of zinc sulfate in regards to colonic segment weight, gross histological score, and microscopical score were comparable to those of prednisolone ( $p > 0.05$ ).

**In both models**, (1 and 2), a significant decrement in post induction mean plasma zinc level was detected ( $p < 0.05$ ); however, such decrement could be corrected by zinc sulfate therapy, on the other hand, post induction mean plasma copper concentration obviously increased when compared to the pre-induction levels, (Table 4) and (Table 5) below shows the changes in plasma concentrations of zinc and