



Immune Response of Rats, Rabbits and Chickens Challenged with Sheep Erythrocytes and Pretreated with *Capparis Spinosa* and Cyclophosphamide

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Abstract : Humoral and cell mediated immune response of methanol extract of *Capparis spinosa* (*C. spinosa*) and cyclophosphamide (CY) was the aim of this study. Rats, rabbits and chickens were selected for assessment. Each species was divided into three groups: first group was challenged with sheep erythrocytes (SRBCs) at days zero and 15, second group was challenged after 3 days of CY injection and the last group was challenged after two weeks of *C. spinosa* extract administration. The results of this study showed that, in comparison to challenged group, total leukocytic count (TLC) and spleen cellular viability % was significantly decreased in CY treated animals ($P<0.05$). Neutrophils (N%) and lymphocytes (L%) were significantly lowered at days zero, 14 and 42 for rat, at days zero and 14 for rabbits and at days 14 and 42 for chickens ($P<0.05$). At day 42, TLC and L% were significantly decreased in rats and rabbits pretreated with *C. spinosa*. Rabbits pretreated with *C. spinosa* showed a significant ($P<0.05$) higher N% at days zero and 14. A significant increase of H% was obtained in chickens pretreated with *C. spinosa*. In contrast to challenged rats and rabbits, the phagocytic index and glucose consumption of lymphocytes of CY pretreated group was significantly decreased ($P<0.05$), while it was elevated in *C. spinosa* pretreated rats and chickens ($P\leq 0.05$). It can be concluded that pretreatment of animals with *C. spinosa* extract enhanced the immune system. Therefore, the results of this study may encourage the use of *C. spinosa* extract in reducing the immune depression of CY in animal models.

Key words : *Capparis spinosa*; Cyclophosphamide; Immune responses; Phagocytic index.