

The Recovery Effect of Polyacetylene constituents from *Acanthopanax Senticosus* Extracts

on Hepatic Injury in Dogs Sung-Nam Jo, Jianzhu Liu, Hyung-kyou Jun, Chang-Seok Lee,
Kyu-Seop Chang¹ and Duck-Hwan Kim*

College of Veterinary Medicine, Chungnam National University, Daejeon, Korea

¹*College of Agriculture, Chungnam National University, Daejeon, Korea*

Introduction: To clarify the recovery effect of polyacetylene constituents from *A. senticosus* ethanol extracts on CCl₄-induced acute hepatic injury in dogs, the changes in ALT, AST, GGT activities and histopathological findings on the effect of polyacetylene constituents were examined after induction of hepatic injury.

Materials and Methods: Sixteen clinically healthy dogs (10 males and 6 females) with weight ranging from 1.4 kg to 6.3 kg, and age ranging from 5 to 24 months were used in this study. The dogs were divided into the control group (6 dogs), and experimental group I (3 dogs), II (3 dogs) and III (4 dogs). Acute hepatic injury was induced by means of a single intraperitoneal injection of 1 ml/kg CCl₄ solution (CCl₄: olive oil=1:1) after sterilization. The control group was orally administered with 10 ml of corn oil and experimental groups I, II and III were orally administered with extracts of *A. senticosus* at the dose of 5, 10, 30 mg/kg in 10 ml corn oil for seven consecutive days at 24 h after CCl₄ injection. We assessed changes occurring in serum ALT, AST, GGT activities on the pre, 0, 1st, 2nd, 3rd, 5th, and 7th day, together with the histopathological findings.

Results: In experimental group I the significant changes in serum ALT activities were found on the 5th ($p<0.05$) and 7th day ($p<0.05$) when compared to those in the control group. However, significant differences were not found with the changes in serum AST and GGT.

In experimental group II significant changes in serum ALT activities were found on the second ($p<0.05$), third ($p<0.05$), fifth ($p<0.05$) and seventh day ($p<0.05$), while in serum AST, significant differences were noted on the first day ($p<0.05$), and in serum GGT, significant differences were found on the second ($p<0.05$) and third day ($p<0.05$). In experimental group III the changes in serum ALT, AST and GGT activities were not significant. In the histopathological evaluation, experimental groups I and II showed much improvement, while, experimental group III became worse when compared with the control group. In conclusion, a low dose administration of polyacetylene constituents from *A. senticosus* extracts was effective for the recovery of acute hepatic injury induced by CCl₄ in dogs.

Clinical relevance: Recovery effect of polyacetylene constituents from *A. senticosus* on induced hepatic injury in dogs was elucidated.

* Corresponding author:

Duck-Hwan Kim, College of Veterinary Medicine,
Chungnam National University(e-mail: dhkim@cnu.ac.kr)