

Study on Influence of Apitherapy in Acrylamide Experimentally Induced Liver Disease Regarding the Hepatic Enzyme Profile in Wistar Rats

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SUMMARY

Introduction. The purpose of this experiment was to study the influence of apitherapy in acrylamide-induced liver disease in rats. The experimental study objectives were the evaluation of liver enzyme parameters (ALT, TGO, AP, GGT), in conditions of chronic liver damage induced by acrylamide. To reduce the factors that accelerate the progress of liver damage we have administered Apitherapy products.

Materials and methods. Materials: Apitherapy products *Apiregya*, *ApiImunomod*, *ApiImunostim*. The Apitherapy products were purchased from "Stupina LLC. The animals were handled under thiopental induced general anesthesia. Determining the level of investigated parameters, i.e. serum total protein was measured using an automatic analyzer (Aeroset, Abbott) and commercial kits (Abbott, USA). A total of 40 Wistar white rats were used in the study; they were divided evenly into four groups: standard diet control group (group I), apitherapy and royal jelly control group (group II), acrylamide group (group III), acrylamide-apitherapy- royal jelly control group (group IV). The animals were kept under standard light and temperature conditions with access to food and water *ad libitum*. The toxic liver disease in rats was experimentally induced by gastric gavage administration of acrylamide (in aqueous solution, 50 mg /kg body weight).

Results and discussions. Administration of apitherapy and royal jelly (RJ) products in experimental animals with acrylamide-induced hepatopathy (Group IV) produced a reduction towards normal limits of liver enzymes compared to the other studied groups, as follows: i). compared to the control group with standard diet (Group I), for ALT (93.85 ± 2.26 vs. 110.66 ± 10.52); AST (64.78 ± 1.47 vs. 57.94 ± 9.1), alkaline phosphatase (112.42 ± 4.99 vs. 86.44 ± 6.93), GGT (0.571 ± 0.07 vs. 0.233 ± 0.11); ii) compared to the group treated with apitherapy and RJ (Group IV), for: ALT (55.28 ± 1.49 vs. 110.66 ± 10.52); AST (35.35 ± 0.71 vs. 57.96 ± 9.1), alkaline phosphatase (97.28 ± 1.38 vs. 86.44 ± 6.93), GGT (0.457 ± 0.05 vs. 0.233 ± 0.11). The administration of the apitherapy + RJ to the group which received the first the acrylamide (group IV) was effective for maintaining the TGO values within close limits to the standard food group values (group II); bringing within the absolute normal limits for TGP value and bringing within limits comparable with the values of group II, which received the apitherapy and royal jelly.

Conclusions. It is recommended to administer the Apitherapy preparations *Apiregya*, *ApiImunostim*, *ApiImunomod*, for normalizing the liver enzymes in liver damage induced by toxic food.

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