

Study On The Influence Of Apitherapy In Acrylamide Experimentally Induced Liver Disease Regarding The Protein Profile In Wistar Rats

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Keywords: Apitherapy products, aspartataminotransferase (TGO), alaninaminotransferase (ALT), alkaline phosphatase (FA), gamma-Glutamyl Transferase (GGT).

SUMMARY

Introduction. The purpose of this experiment was to study the influence of the apitherapy in acrylamide-induced liver disease in rats. The experimental study objectives were the evaluation of serum protein electrophoresis parameters (albumin, globulin, alpha-1-globulin, alpha-2 globulin, beta globulin, albumin ratio/globulin), in conditions of chronic liver damage induced by acrylamide. To reduce the factors that accelerate progress of liver damage we have administered Apitherapy products.

Materials and methods. Materials: Apiregya Apitherapy products, *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. In comparison to the other treated groups, administration of apidiet and royal jelly (RJ) in experimental animals with acrylamide-induced hepatopathy (Group IV) produced: i) an increase in total proteins compared to the Control Group [Group I] (6.15 ± 0.03 vs. 7.33 ± 0.01) and a reduced value for this parameter compared to the Group II (7.33 ± 0.01 vs. 6.28 ± 0.33), ii) an increased level of albumin compared to the Control Group [Group I] (30.14 ± 0.69 vs. 41.7 ± 1.34), Group II (40.71 ± 0.95 vs. 41.7 ± 1.34), iii) an increase of albumin/globulin ratio compared to Group I (0.432 ± 0.01 vs. 0.720 ± 0.04), and a maintaining of this ration compared to Group II (0.6 ± 0.03 vs. 0.720 ± 0.04), iiiii) a reduction of levels of globulins compared to the Control Group [Group I] (69.85 ± 0.69 vs. 58.41 ± 1.12), with similar results for globulins as those obtained for Group II (59.14 ± 1.06 vs. 58.41 ± 1.12). Regarding the globulins fractions, we can remarks these are returned to normal values in the animals with acrylamide-induced hepatopathy and treated with apidiet and royal jelly.

Conclusions. It is recommended to administer apitherapy preparations *Apiregya*, *ApiImunostim*, *ApiImunomod* for normalizing the parameters of serum protein electrophoresis in liver damage induced by toxic food.

Acknowledgments. Financing was done by Human Resources Development Operational Programme "(PERFORM-ERA) ID 57649.