

Electrophoretic Changes in Testis and Liver of Mice after Exposure to Diclofenac Sodium

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Abstract : Diclofenac sodium being one of the most common non-steroidal anti-inflammatory drugs is normally used as painkiller and to reduce inflammation. The drug is known to alter the enzymatic activities of acid and alkaline phosphatase, glutamate oxaloacetate transaminase and glutamate pyruvate transaminases. The drug also results in change in the concentration of proteins and lipids in the body. The present study is an attempt to study different biochemical changes electrophoretically due to administration of different doses of diclofenac (4mg/kg/body weight and 14mg/kg/body weight) on liver and testes of mice from 7-28 days of investigation. Homogenization of the tissue was done, supernatant separated was loaded in the gel and native polyacrylamide gel electrophoresis was conducted. Diclofenac administration resulted in alterations of all these biochemical parameters which were observed in native polyacrylamide gel electrophoretic studies. The severe degenerative changes as observed during later stages of the experiment showed correlation with increase or decrease in the activities of all the enzymes studied in the present investigation. Image analysis of gel in liver showed a decline of 7.4 and 5.3 % in low and high dose group after 7 days whereas a decline of 9.6 and 7.5% was registered after 28 days of investigation. Similar analysis for testis also showed an appreciable decline in the activity of alkaline phosphatase after 28 days. Gel analysis of serum was also performed to find a correlation in the enzymatic activities between the tissue and blood.

Keywords : diclofenac, inflammation, polyacrylamide, phosphatase

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