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MEETING ABSTRACT

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Influence of apigenin on the biochemical serum parameters and histological changes of liver tissue in rats exposed to oxidative stress

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Background: With the high beneficial potential of flavonoids, today's modern medicine focuses on the effects of apigenin, which is present in everyday food ingredients. In several researches conducted on laboratory animals, apigenin was found to have certain antioxidative effects by reducing liver damage in laboratory animals exposed to oxidative stress. The research confirms the influence of apigenin on biochemical parameters, on indicators of hepatic and renal function, as well as on alterations in liver structure in white mice exposed to oxidative stress induced by toxic doses of paracetamol.

Methods: The research was conducted on sexually mature white male Wistar laboratory rats, divided into four groups of 6 animals each. During 6 days, the animals were orally pretreated with apigenin and physiological saline (10 mg/kg). The rats were decapitated, completely autopsied and the collected blood was further used in the assessment of biochemical parameters.

Results: The application of toxic doses of paracetamol increased the activity of hepatic transaminases in serum compared to controls ($p < 0.05$). In animals pretreated with apigenin, the serum activity of aspartate transaminase was a quarter lower as compared to controls, while the activity of alanine transaminase was 5 times lower compared to controls. The direct bilirubin concentration was significantly lower in rats pretreated with apigenin compared to controls ($p < 0.05$). The serum urea level in rats treated with paracetamol was significantly lower when compared to other groups ($p < 0.05$).

Discussion: The application of toxic doses of paracetamol leads to a significant disorder of biochemical parameters, indicators of hepatic and renal function, in the serum of laboratory rats. Pathohistological liver tissue changes induced by toxic paracetamol doses were less present in those animals pretreated with apigenin. Observed hepatoprotective and nephroprotective properties of apigenin provide insight into potential beneficial effects of apigenin.

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