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PC-21

Protective Effect of L-carnitine on Liver, Kidney and Intestine Toxicity of Cadmium in Prepubertal Female Rats

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AIM: Cadmium is a toxic element with a half-life of more than 10 years that accumulates in tissues, especially in kidney and liver. Nickel-cadmium mixture taken into body with batteries, accumulators, cigarettes, water and food. Aim of this study was to investigate the effect of L-carnitine against cadmium-induced changes in liver, kidney and small intestine tissues in prepubertal female rats.

METHODS: 21-day-old female Wistar Albino rats were used in study. Control, CdCl2 (2mg/kg CdCl2 intraperitoneally), L-carnitine (LC) (300 mg/kg orally) and CdCl2+L-carnitine groups were formed. Sections were stained with H&E and Masson Trichrome. Histological scoring was performed in liver. Results were statistically evaluated with one-way analysis of variance using Graphpad Prism (Version9) program.

RESULTS: Necrosis, increase in connective tissue around the portal area, bile duct proliferation, sinusoidal congestion, increase in inflammatory cells were observed in the liver of the Cd group. Congestion in intertubular capillaries in kidneys, dilatation in tubules and also irregularity in villi structures in small intestines were detected. Structural changes in organs were found to be alleviated in cadmium group treated with L-carnitine. In inflammatory cell scoring of the liver, Cd with control(p:0.009), Cd with LC(p:0.004), in fibrosis scoring, Cd with control(p:0.002), Cd+LC with control(p:0.03), Cd with LC (p:0.006), also in necrosis scoring between control and Cd(p:0.001), LC and Cd(p:0.001), and between control and Cd(p:0.001), LC and Cd(p:0.02) groups in bile duct proliferation statistically significant increase was observed.

CONCLUSION: In conclusion medium-dose cadmium has toxic effects in liver, kidneys and small intestines of prepubertal female rats in subacute period, these effects are alleviated with L-carnitine. It is necessary to examine the effects of cadmium with advanced laboratory techniques to support the results.

Keywords: Cadmiyum, Intestine, Kidney, L-carnitine, Liver.

PC-22

The Effects of Irisin Hormone on Seminal Vesicle Fluid in Male Rats Administered Paroxetine

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AIM: It is known that antidepressants cause some negative effects in the reproductive system and especially in sperm parameters. It is stated that exercise is an effective factor on the transition to puberty, reproductive system and sexual dysfunction. Fructose, ions and molecules in the seminal vesicle fluid excreted the nutrition and mobility of the sperm. The aim of this study was to investigate the possible effect of irisin hormone on certain components of seminal vesicle fluid in male rats treated with paroxetine (antidepressant).

METHODS: In the study, 32 adult male Spraque Dawley rats were used. Rats were randomly divided into 4 groups as Control (C), irisin (I), paroxetine (P), and paroxetine+irisin (PI) (n=8). Paroxetine was given to the P and PI groups by oral gavage at a dose of 20mg/kg for 8 weeks. In the 4th week of the applications, irisin (100ng/kg/day) was administered to the I and PI groups by an osmotic pump as a subcutaneous infusion. At the end of the experiment, seminal vesicle fluids of sacrified rats were taken and analyzed (Advia 2400 analyzer and HPLC).

RESULTS: Calcium, magnesium and fructose levels were significantly decreased in the paroxetine group when compared to both the control group and irisin group, respectively ($p<0.05$). However, it was determined that fructose levels increased in paroxetine+irisin group compared to paroxetine group ($p<0.05$). In the irisin group, potassium and phosphorus levels were increased significantly compared to the control group ($p<0.05$).

CONCLUSION: The positive effect of irisin on fructose and some ion levels that decreased with paroxetine application suggests that this hormone may contribute to sperm vitality and motility. The increase of potassium and phosphorus levels caused by irisin hormone compared with the control group suggests that irisin has important effects on the reproductive system.

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Keywords: Paroxetin, Irisin, Seminal vesicle, Rat.