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Acute Toxicity and Lethal Dose 50 of Fenpyroximate in Mice

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ABSTRACT

Introduction: Environmental, hormonal, and genetic factors affect male infertility. Exposure to environmental or occupational toxins such as pesticides has been linked to infertility and reproductive disorders. Fenpiroximate is a pesticide that controls mites and whiteflies in citrus and palm trees. However, few studies have examined its effects on reproduction. Therefore, this study investigated the effects of the lethal dose of fenpiroximate on BALB/c mice.

Methods and Materials: In this study, 18 adult male BALB/C mice, weighing 20-25 g, were obtained from the Animal House of the Faculty of Medicine of Mashhad University of Medical Sciences. Animals had free access to food and water during the study. The animals were randomly divided into six groups. Control group did not receive any substance. The experimental groups received reapproximate doses of 16, 8, 4, 2, and 1 mg/kg of fenpiroximate intraperitoneally for 15 days. After 21 days, the mice were weighed, anesthetized with ether, and sacrificed.

Results: After seven days of injection, mice received a dose of 16 mg/kg of fenpiroximate. After 10 days, they were administered 8 mg/kg, and after 12 days, a dose of 4 mg/kg was given, which resulted in abnormalities. The mice died, and by weighing the body weight of the surviving mice and their reproductive organs on the 21st day, we concluded that the concentration of 2 and 1 mg/kg of fenpiroximate led to a decrease in body weight compared to the initial measurements, as well as a reduction in the weight reproductive organs.

Conclusion and Discussion: This study show that the pesticide reapproximate can lead to a decrease in body weight and reproductive organ health, and at high doses, it can cause deformities and death in mice. Therefore, the potential risks associated with exposure to pesticides highlight the need for increased attention to environmental pollutants, particularly in the field of reproductive health.

Keywords: Lethal dose 50, Male, Mouse

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