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Histopathological Examination of Cd Toxicity of Ovotestis in Lymnaea stagnalis Linnaeus, 1758 (Gastropoda: Pulmonata)

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The purpose of the work: Cadmium is the second toxic heavy metal after mercury among the heavy metals. It was decided to determine the effect of cadmium toxicity on the ovotestis of*Lymnaea stagnalis* Linnaeus, 1758 (Gastropoda: Pulmonata). In this experimental study, It was aimed to determine the histopathologic changes in the ovotestis of *Lymnaea stagnalis* exposed to sublethal cadmium concentrations for different perriods.

Materials and Methods: *Lymnaea stagnalis* specimens were acclimated to laboratory conditions for 15 days. After adaptation period, the snails were divided into 5 groups.
Group I. the snail control group not exposed to cadmium concentration
Group II. Snails exposed to 63.4 µg / l concentration of cadmium
Group III. Snails exposed to 31.7 µg / l concentration of cadmium
Group IV. Snails exposed to 15.85 µg / l concentration of cadmium
Group V. Snails exposed to 7.92 µg / l concentration of cadmium
The sublethal Cd doses were applied to all experimental groups except the control group for 30 days. In order to determine the histopathological alterations, histological preparations of ovotestis samples from snails taken from the control and experimental groups at 7th, 14th, 21st and 28th days of the experiment were prepared. Histopathologic changes were examined with light microscope and photographed.

Results: In the control group, ovotestis is covered with single-layered flat epithelium from the outside. From the oocysts in the asinus, those around them constitute egg cells and those in the center form sperm bundles. In Group I, no histopathological changes was observed in the ovotestyst. In experiment groups, at 7th day vacuolization in the cytoplasm in Group II, Group III, and Group IVand degenerated ovotestis in Group V were detected. At 14th day, vacuolization around the oocyte in Group II and Group III, changes in cellular level and picnotic cell in Group IV and large-scale cellular changes in Group V were observed. At 21st day, in Group II and Group III, while the degeneration was ongoing, amorphous oocytes separated from the asinus walls were detected. In Grup IV excessive deterioration in reproductive cells and necrosis in all of the tissues in Group V were observed. At 28th day, amorphous oocytes separated from acinus walls in Group II and Group III; necrosis in all acinus of the tissue in Group IV; amorphous oocytes separated from the walls of the acinus but distinguished hardly recognized lumen and degenerated spermatozoa in Group V were detected. It was observed that histopathological changes in ovotestis tissues increased with dose and duration of the experiment.

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Key words: *Lymnaea stagnalis*, Cd, EDTA, histopathology, snail.