Tissular alterations induced by indium in the testicular tissue. A study using Conventional Transmission Electron Microscope.

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Recent studies showed that indium is toxic since it induced pulmonary irritations and asthma on human beings. In the animals, splenic and hepatic alterations were noticed in adult rats. Moreover, embryotoxicity and teratogenecity were observed on embryos of indium treated females [1]. No studies of indium effect on the testicular tissue were published. The purpose of this work was to study the effect of this element on the wistar male rats testicles, after intraperitoneal administration under soluble form, using the conventional transmission electron microscope.

Eight male wistar rats weighing approximately 200g received, for two weeks, 7 intraperitoneal administrations of indium sulphate soluble solution. The control group received a physiological serum solution in the same experimental conditions. During this period their food intake and their body weight were daily measured. 24 Hours after the last injection, rats were sacrificed and testicles were removed.

Results obtained from this study showed a significant decrease in food intake and body weight of the indium treated rats comparatively to the control group. Moreover, the ultrastructural investigations of the testicular epithelium sections of treated rats showed several alterations like vacuolization in nucleus (N) and disorganization of chromatin of germinal cells. Cell sufferance was noticed by the important number of necrotic cells (NC) in the seminiferous tubes of the indium treated rats (figure 1). No ultrastructural lesions were noticed in the testicular sections of control rats (figure 2).

Our study showed the indium toxicity on the germinal tissue after its intraperitoneal administration to male wistar rats.

These results will be completed by sperm density and motility studies to evaluate the indium impact on the rat wistar fertility.

1. M. Nakajima. Teratology. 63 (4) (2001) p 24A

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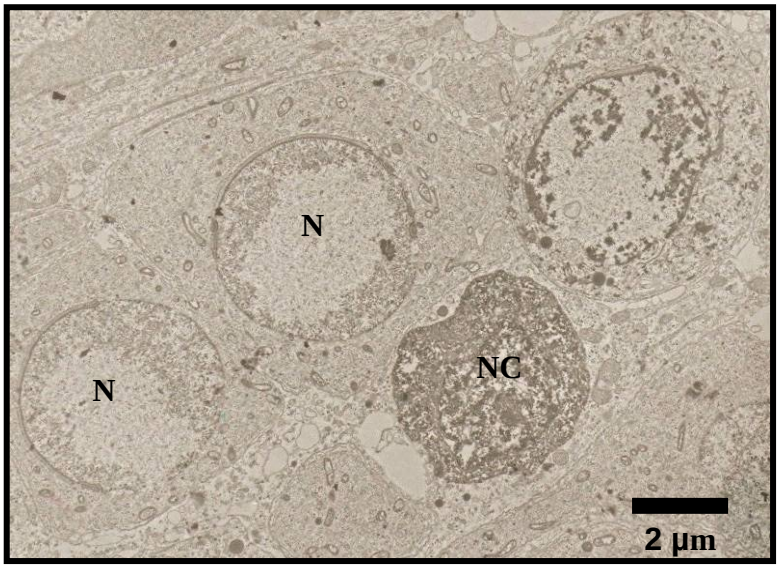

Figure 1. The ultrastructural study of indium treated testicular sections showed vacuolization in nucleus (N), chromatin disorganization of germinal cells and presence of necrotic cells (NC). Magnification: x 2500.

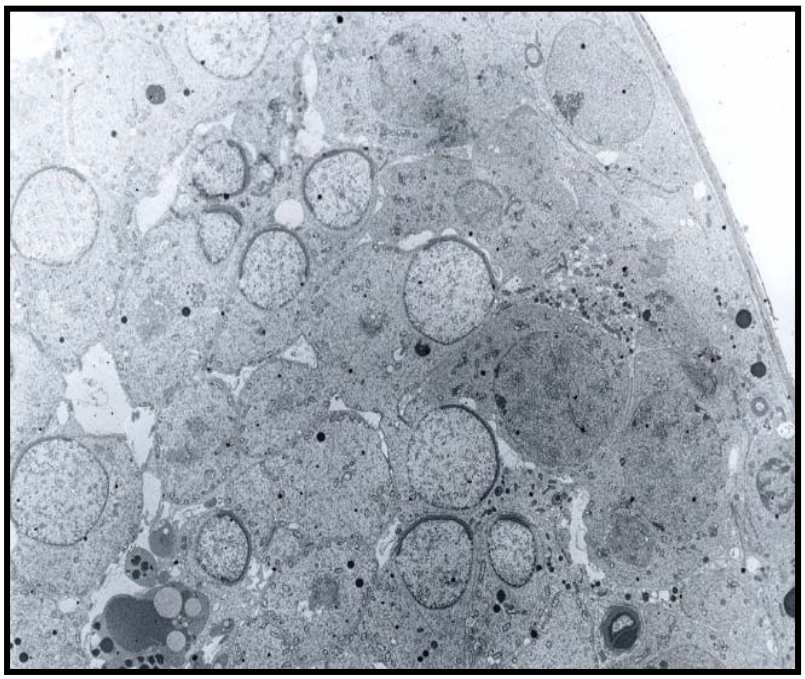

Figure 2. No ultrastructural lesions were noticed in the testicular sections of control rats. Magnification: x 800.

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