

Environmentally Realistic Doses of Cadmium Affects the Vascular Tonus in Wistar Testis: An Experimental Study Paralleling Human Environmental Exposure to Cadmium

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Abstract : Although industrial processes are the major contributor to increase cadmium environmental concentration, phosphate fertilizers have significantly increased its percentage in soil, making food and tobacco the main source of cadmium exposure to humans. Worldwide population surveys have shown a consistent link between environmental exposure to cadmium and several idiopathic pathologies among non-occupationally exposed subjects. Epidemiological investigations and animal experiments paralleling human chronic exposure to environmental cadmium are, therefore of major importance for establishing a relationship between cadmium and several pathologies of unspecific etiology. In the present study, Wistar rats were randomly divided into three different groups and subjected to increasing cadmium doses ranging between low to moderate environmentally realistic doses. At the end of the treatment, the testis was dissected and subjected to biochemical and histological analyses. Our data show a significant disturbance in the cellular oxidative status for all cadmium-treated group, accompanied by morphological changes in blood vessel lumen.

Keywords : cadmium, blood vessel, environmental realistic doses, oxidative stress

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