VASCULAR INJURIES IN EXPERIMENTALLY INDUCED HEART FAILURE IN WISTAR RATS TREATED WITH ADRIAMYCIN

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SUMMARY

Vascular hypertension and its associated cardiovascular diseases are the major cause of death in many countries (3, 4). Experimental models are very useful for research of pathogenesis and for establishing of new protocols of therapy (1, 3). In this context we followed if Adriamycin intraperitoneally injected induces lesions similar with those described in hypertensive disease (2), the degree of vessels injury and the manner of vascular reaction.

Animals: 9 white Wistar rats, males, weighing 200±20g, kept in conventional conditions, with no interdiction of water and food. Methods: animals were intraperitoneally injected with Adriamycin, 2,5mg/kg; 6 administrations were performed, one administration for each 2 days. Cloroform euthanasia was induced after Xylazin and Ketamin analgesia, 60 days after last administration.

Abdominal aorta, pulmonary trunk arteries, coronaries and arterioles from heart, lung, liver and kidney were investigated histopathologically. 10% formaldehyde fixed samples were paraffin embedded, histological sections being Masson trichromic stained.

Insudation, disorganized media, hypertrophy and hyperplasia of smooth muscle cells of media were the most obvious injuries of extrahepatic and intrahepatic vascular walls. In two cases concentric arrangement of connective tissue fibres and hyperplastic leiomyocytes occurred. These injuries can be associated with hialin and hyperplasic arteriolosclerosis (specific lesions for hypertensive disease). In one case, arterioles of liver and diaphragm presented endothelial cells necrosis and arteriolitis.

Coronary arteries and branches of them were affected inconstantly. Endothelial cells swelling, focal insudation of intimae and fibrous hyperplasia in the external region of media were the most serious lesions observed. Leiomyocyte nuclei swelling were noticed constantly. Same arterioles lesions occurred in mesenteric vessels, kidney and lung.

Elastic arteries presented discrete or absent modifications. Sometimes, swelling of endothelial cells nuclei or focal absence of endothelial cells occurred. Endothelial lesions are more evident in arterioles, thrombosis being observed in two cases.