CADMIUM EFFECTS ON GTH CELLS IN THE PITUITARY GLAND OF *PODARCIS SICULA*

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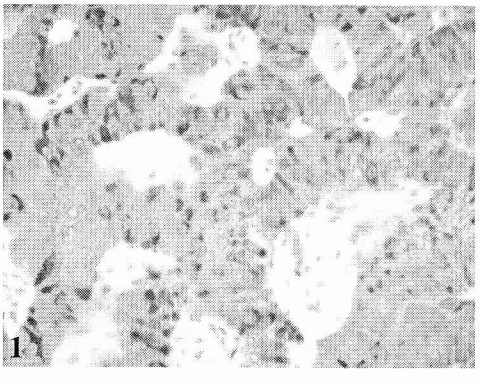
It is reported that cadmium exposure affects the activity of the endocrine system in mammals (Lafuente, Cano & Esquifino, 2003, Biometals 16:243-250). Little is known about the effect of cadmium on the adenohypophyseal cells in reptiles and particularly in snakes and lizards of which is note the utility as bioindicators. Scope of this work was to evaluate the possible morphological changes induced from cadmium on the gonadotropic cells in the lizard *Podarcis sicula.* Experiments were carried out on 25 adult females of *P. sicula*, in the period of November-February. Lizards were treated for four months with $CdCl_2$ at dose of 1mg/kg-BW in the drinking water. A separate group of lizards received cadmium–free water to use as control. At 10, 30, 60, 90 and 120 days groups of five animals were killed: after removal of the skullcap, the brains with the pituitary were fixed in Bouin's solution for 48 h and then decalcified for 25-30 days. Serial paraffin sections of 6μ were processed by Mallory stain and by the ABC immunohistochemical technique using the following antisera: anti-human FSH (Signet, 1:100) and anti-human LH (Signet, 1:100).

P. sicula pituitary gland is markedly extended in the cephalic-caudal direction in which the pars distalis (PD) is divided in a rostral pars distalis (RPD), a caudal pars distalis (CPD) and a medial pars distalis (MPD). The whole PD consisted of homogenous cellular cordons in a reticular stroma and appeared greatly vascularized. In all control specimens the gland appeared compact and lacking in dilated spaces: a basal lamina was observed all around the cellular cordons and it was clearly possible to distinguish the different adenohypophyseal cellular types.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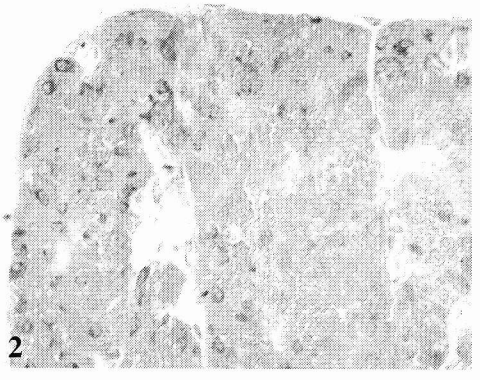
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At 10 days the presence of some dilated spaces between the cells were already evident; during the treatment these dilatations (Fig.1) increased and in the specimens at 90 and 120 days they appeared more extensive. In *P. sicula* pituitary the FSH and LH cells appeared as two distinct cellular populations: the first cells were more numerous, with a variable shape and mainly grouped in the CPD, the others indeed were rare, little and globular in shape. Both cellular types during the treatment increased in number and intensity to the immunoreaction. LH cells were just considerable increased at 10 days, with a maximum at 60 days of $CdCl_2$ exposition (Fig.2). A meaningful increase in number of FSH cells were indeed observed at 30 days (Fig.1). However it was revealed that both cells during the treatment, after a considerable increase (at 30-60 days) in

number and intensity of reaction, returned to normal values. These preliminary observations are indicative that in *P. sicula*, an oral chronic exposure to cadmium, provokes an alteration of the general morphology of the gland by the evidence of extensive dilatations between the adenohypophyseal cells. In addition both GTH cells during the treatment increase in number and in immunostaining intensity explicable by a possible inhibitory effect of cadmium on FSH and LH secretion as reported in the rat (Lafuente &Esquifino, 2002, BioMetals 15:183-187) and in the catfish (Jadhao, Paul & Rao, 1994, J.Neurosc. 6(10):2995-3005).

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