

***Karwinskia humboldtiana* (buckthorn) fruit causes Central Nervous System damage during chronic intoxication in the rat**

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Abstract

Karwinskia humboldtiana fruit (Kh) causes a neurological disorder 3–4 weeks after ingestion, characterized by flaccid, symmetrical, ascending paralysis, similar to the Guillain–Barre syndrome. In this polyneuropathy the lesion (demyelization) in peripheral nerves has been described in several animal species, both in acute and in chronic intoxication. However, no reports exist about the presence of lesions in the Central Nervous System (CNS), in chronic intoxication. We considered it important to evaluate, with histological techniques, the possible presence of lesions in the brain, by using a model of chronic intoxication that reproduces the same stages present in the human intoxication, to better understanding of this pathological process. In our present work we fed the ground Kh fruit to Wistar rats and samples of brain, cerebellum, and pons were embedded in paraffin. Sections were stained with Hematoxylin & Eosin (HE) and special stains for nerve tissue. Histopathological changes were evaluated in the CNS through the different stages of the polyneuropathy and comparison to a control group.

With this methodology, we found lesions in the motor pathway. This is the first report about the presence of neuronal damage caused by Kh in the Central Nervous System in chronic intoxication.

Keywords: *Karwinskia humboldtiana*; Neuronal damage; Chronic intoxication; Purkinje cell loss