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Cardiovascular effects of *Calea prunifolia* HBK in wistar rats

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Aim: *Calea prunifolia* HBK (Cp) has been traditionally used in Colombia as a medicinal plant known as carrasposa. It is attributed properties such as arterial hypotensive, antipruritic, antipyretic and anti-seborrheic. The aim of the study was to investigate the cardiovascular effect, based on the evaluation of blood pressure.

Materials & Methods: A specimen of *Calea prunifolia* HBK was identified and deposited in the Colombian National Herbarium of the Institute of Natural Sciences of the National University of Colombia. Leaf extract, aqueous extract (EACp), ethanolic extract (EECp), and fractions, such as the butanolic fraction (FBCp), were obtained. It was examined in isolated aorta and isolated vas deferens, as well as changes in blood pressure with chronic oral administration of the extracts and the fraction to normotensive Wistar rats and rats Wistar with hypertension induced by L-NAME. The evaluation was also performed with acute intraperitoneal administration of extracts and fraction to normotensive Wistar anesthetized rats and acute intravenous administration of the fraction. In addition, the activity of the angiotensin converting enzyme in plasma and cytosolic calcium was measured in cardiomyocytes and uterine cells.

Results: Chronic administration by oral route does not demonstrate a hypotensive effect between the different experimental groups. Acute intraperitoneal administration showed a significant decrease in blood pressure and heart rate of ECP. FBCp lowers blood pressure in anesthetized rats in a dose-dependent manner, evaluated at a range of 1-100 mg/kg, i.v. Cp did not affect the plasma activity of the angiotensin converting enzyme or cytosolic calcium in cardiomyocytes and uterine cells. But Cp relaxes the smooth muscle and changes the vascular tone favoring the decrease of the blood pressure in rats by mechanisms related to the alpha-adrenergic inhibition.

Conclusions: In this study, the hypotensive property traditionally attributed to *Calea prunifolia* HBK was not tested with the *in vivo* experimental models of chronic oral administration, considering that traditional use is through infusions of oral administration. There is difference with the positive effect on the isolated organ assays of aorta ring and vas deferens. These results, added to the effect demonstrated by the intravenous and intraperitoneal injectable parenteral administration, where the hypotensive effect is associated to a cardiopresor effect, which leaves other questions and opens a new way to continue in the study and knowledge of this plant.

Biography

Maria Esperanza Avella Vargas is a Professor of Pharmacology and Therapeutics in Medical and Surgical Clinic Area of the Faculty of Medicine at Military University of Nueva Granada. She is the leader of the research group-Pharmacology, Toxicology and Therapeutics-UMNG and responsible for the research seminar-study of preclinical and clinical research of medicines for its development and application. As PhD student, he belongs to the research group i.e., Search for bioactive principles in Colombian medicinal plants of the Department of Pharmacy of the Faculty of Sciences, National University of Colombia in the city of Bogotá.

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