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Dopamine urinary content and dopamine striatal levels could be relations with the disturbed dopaminergic system of the hemiparkinsonism rat model?

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The aim of the present study was to establish the relation that exists between the striatal dopamine levels and urine dopamine content in hemiparkinsonism rat model. 20 Wistar rats were used and were randomized into two groups as follows: a) control group and b) lesioned injured group induced by (6-OHDA). All animals were re-tested on the same battery of motor tests that before lesion. The rotation test behavior test was assessed and striatal DA levels and urine DA were determined by HPLC, motor behavior fine tests were done and finally immunohistochemical (Hir+) striatum was done. We found a positive correlation between the dopamine levels in the striatum and the content dopamine in urine of rats (control vs. 6-OHDA group). Respect motor performance, the 6-OHDA group showed a significant fine motor impairment (grasp and advance) vs. control group ($p < 0.01$). Immunostaining for tyrosine hydroxylase (TH) expression revealed no TH-immunoreactive (THir) neurons in any 6-OHDA animals vs. control group ($p < 0.01$). Positive correlation between the dopamine levels in the striatum and the content dopamine in urine could be talking also, about a major proportion of urinary dopamine could be derived from the renal decarboxylation of circulating dopa and not dopaminergic system disturbance. The other hand, alterations of a forelimb motor function in rats could be only due to more vulnerability of striatal dopaminergic depletion and not to low periphery dopamine levels.

Recent Publications

1. P Vergara-Aragón (2017) Is it possible to reverse the motor alterations with dopamine supply content in an amorphuous matrix in a hemiparkinsonian rat model? *Pharmaceut Reg Affairs* 6(1):53.
2. S Hernández Castro and P Vergara Aragón (2017) A PET study with [¹¹C] Raclopride in hemiparkinsonism model: Preliminary results on the effect of a TiO₂DA matrix implanted in the caudate nucleus. *Pharmaceut Reg Affairs* 6(1):52.
3. Blanca Meza Aupart and Vergara Aragón P (2017) Evaluation of the effects that produce a micro-implant with dopamine stabilized and inserted in the caudate nucleus in hemiparkinsonism rat model induced on motor activity and its relationship to the levels of dopamine. *Pharmaceut Reg Affairs* 6(1):54.
4. Velázquez-Paniagua M, Ana María Vázquez-Álvarez, María Guadalupe Valverde-Aguilary and Patricia Vergara-Aragón. (2016) Current treatments in Parkinson's including the proposal of an innovative dopamine microimplant. *Revista del Hospital General de México. Rev Med Hosp Gen Mex.* 79(2):79–87.

Biography

B Hernández-Téllez is a Biology graduate and has worked in the Faculty of Medicine UNAM in Mexico for more than 20 years. Her research is focused in the field of Tissue Engineering and collaborates in toxicity and biological implications of rotenone exposure in animal models. She is a Professor of Histology in the Biology Cellular and Tisular Department, Faculty of Medicine, National Autonomous University of Mexico, Mexico.

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