TEBUCONAZOLE-INDUCED DISRUPTION OF ENTERIC HOMEOSTASIS IN THE JEJUNUM OF WISTAR RATS

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INTRODUCTION: Agricultural progress in Brazil has made it one of the world's major agricultural producers. Currently, supported by public politics and weak legislation, the highly use and commerce of agrotoxics has been sustained by the ruralist movement to technological growth. Tebuconazole (TEB), a fungicide with wide application, has contaminated several sources and increased the risk of human exposure. Considering the alimentary pathway of exposure, the enteric nervous system (ENS), located in the gastrointestinal tract (GIT), contains a group of nervous cells, such as neurons and enteric ganglia, which perform vital functions and can respond to different stressful situations, enabling a better comprehension of their potential consequences on organisms. **OBJECTIVES:** Investigate the effects of subchronic exposure of TEB on myenteric plasticity in Wistar rats. **METHODS:** 36 male Wistar rats were separated into experimental groups administered for 30 days with environmental concentrations of TEB in 10 (E10), 20 (E20) and 50 (E50) mg/kg, with a control group (CON). After the experimental period, the animals were euthanized, the jejunum were collected for the histochemical analysis of neuronal density (NADH-dp and NADPH-dp). The results were analyzed using the One-way test. **RESULTS:** Results show a significant reduction in the density of NADH-d+ neurons in E50 (15.26 ± 1.67), with no difference in E10 and E20 groups. As for NADPH-dp neurons, a significant reduction in E50 (8.979 ± 0.78) compared to the other groups, which only E20 (11.92 ± 0.57) also differs from CON. In this sense, the reduction in metabolically active neurons at the highest concentration may be related to cell death events, since it is well known that cholinergic neurons are more sensitive to the toxicity of contaminants. Nitrergic neurons tend to be more resistant, their reduction may indicate a decrease in metabolic and functional activity, showing that, despite the capacity of subpopulations to modulate under stressful conditions and the neuroprotective role of nitrergic neurons, the toxicity of TEB was highly nocive which can cause an unbalance in enteric homeostasis. **CONCLUSIONS**: The exposure of TEB results in alterations in neuronal plasticity by reducing neuronal subpopulation.

KEY WORDS: Agrotoxics, Gastrointestinal tract, Biomarkers.

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