



EFFECT OF *Tithonia diversifolia* ETHANOL EXTRACT ON THE PERIPHERAL NEUROPATHY INDUCED BY PACLITAXEL IN MICE

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INTRODUCTION

Chemotherapy-induced neuropathic pain (CINP) is the most serious adverse effect of antitumor therapy. Several types of chemotherapy drugs cause dysfunctions in the nervous system leading to hypersensitization. *Tithonia diversifolia* is a plant belonging to the Asteraceae family, native to Central America. Several studies employing *T. diversifolia* extract and isolated compounds demonstrate important biological activities, such as anti-inflammatory and analgesic effects. The aim of this study was to evaluate the effect of ethanol *T. diversifolia* extract on mechanical and cold hypersensitivity induced by paclitaxel in mice.

MATERIAL AND METHODS

C57BL/6 male and female mice were used. All tests were performed with an experimenter blinded to treatments. The chemotherapy drug paclitaxel (PTX) was used to induce neuropathic pain, being administered (2 mg/kg once a day for five consecutive days). In the preventive protocol, ethanolic extract of *T. diversifolia* was orally administered at doses of 3.0 and 10 mg/kg once a day for 5 days before the induction of neuropathy and also continued

until the 26th day. The mechanical (von Frey test) and thermal (dry ice test) hypersensitivity were evaluated for 45 days in order to verify the effect of the extract even after treatment interruption. CEUA Univali 07/22.

RESULTS

The PTX injection was able to induce mechanical and cold hypersensitivity in both male and female mice when compared to the naive group. The *T. diversifolia* extract abolished the hypersensitivity to both mechanical and cold stimuli. However, when the administration was interrupted in the 26th day the in hypersensitivity was restored.

CONCLUSIONS

The obtained results demonstrated that *T. diversifolia* is a promising tool to manage the hypersensitivity induced by PTX. More experiments are needed to determine the exact mechanisms involved in the extract activity.

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