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EFFECTS OF DRY HYDROALCOHOLIC EXTRACT OF *Tagetes erecta* L. FLOWERS ON CHEMOTHERAPY-INDUCED PAIN

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INTRODUCTION

Tagetes erecta L. is a species native from Mexico, widely distributed throughout the world and popularly known as marigold. It is used as a source of natural dyes,food and as folk medicine.

This study aimed to investigate the effect of *T. erecta* flower extract (TE) on the mechanical hypersensitivity of animals subjected to the chemotherapy-induced hypersensitivity in mice.

MATERIAL AND METHODS

The viability of B16F10 cells was assessed by MTT and neutral red on cells treated with paclitaxel or TE for 24 hours. For the in vivo experiments, C57BL/6 mice were divided into 5 groups with 6 animals each. Paclitaxel (2 mg/kg) was dosed intraperitoneally for 5 consecutive days. The TE-treated groups received doses of 30, 100, or 300 mg/kg for 15 days, beginning 5 days prior to paclitaxel induction. Mechanical sensitivity in the right and left hind paws was assessed using the von Frey test (VFH, Stoelting, Chicago, USA). The mechanical withdrawal threshold was measured prior treatment and on days 6, 10, 14, 21, and 28. The von Frey test was used to evaluate the mechanical sensitivity on the right and left hind paws (VFH, Stoelting, Chicao, USA). After the experiment, the animals were euthanized and the spinal cord and DRG were collected to evaluate the TNF and IL-10 cytokines according to the manufacturer's instructions (DuoSet R&D Systems – Minneapolis, MN, USA). CEUA-UNIVALI 016-21.

RESULTS

The treatment with TE, at concentrations of 1, 10 or 100 µg/mL, was not cytotoxic to B16F10 murine melanoma cells. All results were similar in both cytotoxicity methods. Pretreatment with TE at the dose of 30 mg/kg was not effective in reversing mechanical hypersensitivity in the paws of mice injected with paclitaxel. However, the doses of 100 or 300 mg/kg were effective in reducing the mechanical hypersensitivity after 15 days of treatment. Furthermore, a decrease of TNF and an increase of IL-10 levels were observed in the spinal cord and DRG of animals treated with TE at the dose of 100 mg/mL.

CONCLUSIONS

The obtained data demonstrate that the TE did not interfere with the cytotoxic effect of paclitaxel in B16F10 cells, and prior treatment with the extract at doses of 100 or 300 mg/mL was able to reduce the mechanical hypersensitivity of C57BL/6 mice after therapy with paclitaxel. In addition, the decreasing TNF and increasing IL-10 levels in the DRG and spinal cord of animals treated with the 100 mg/mL indicate an interference on the neuroinflammation induced by paclitaxel and consequently, the relief of neuropathic pain.

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