

## **Title: Effect of Flavone Derivatives on Vincristine and Oxaliplatin Induced Peripheral Neuropathy in Mice.**

### **ABSTRACT**

**Introduction:** Therapy with anticancer drugs like paclitaxel, platinum complexes and vincristine result in severe peripheral neuropathy. Very few treatment options are available to overcome this debilitating side effect. Flavone and its monohydroxy derivatives have been proved to possess anti-nociceptive and anti-inflammatory effects in animal models.

**Aim:** To investigate flavone, 5-hydroxy flavone, 6-hydroxy flavone and 7-hydroxy flavone for their effect on neuropathy induced by vincristine and oxaliplatin in mice.

**Materials and Methods:** In this experimental animal study, neuropathy was induced in mice by multiple doses of vincristine or a single dose of oxaliplatin. The manifestations of mechanical allodynia, cold allodynia and thermal hyperalgesia were measured by von Frey's hair aesthesiometer, acetone spray test and hot water tail immersion test. The data was subjected to ANOVA followed by Dunnett's test for multiple comparison and paired t-test at appropriate places.

**Results:** Flavone and monohydroxy flavones significantly reduced the paw withdrawal response scores due to mechanical allodynia and cold allodynia resulting from vincristine or oxaliplatin administration (p<sub>thermal hyperalgesia</sub> > mechanical allodynia). Opioid mediated antinociceptive effect, interaction with cation channels and anti-inflammatory effect of the investigated flavones may be suggested as possible mechanisms for their beneficial effects in neuropathy due to chemotherapeutic agents.

**Conclusion:** Various neuropathic manifestations induced by vincristine and oxaliplatin were effectively attenuated by flavone and monohydroxy flavones

**Keywords:** Chemotherapy Induced Peripheral Neuropathy, Cold allodynia, Mechanical allodynia, Monohydroxy flavones, Thermal hyperalgesia

**For more information:**

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