

8. SUMMARY

The Antinociceptive Effects of Gabapentin and Nitric Oxide on Neuropathic Pain Model Formed in Rats

Aim: To search the effects of gabapentin and nitric oxide on the neuropathic pain model which is made in rats.

Material and method: The ethical committee permission was obtained from The Genuine Animals Ethic Committee. Wistar type 63 male rats, each of which weighed between 250-350 gr. are divided into nine equal groups (n=7). Neuropathic pain was constituted at the rats except the control group, by sciatic nerve ligation as modified form of CCI (Chronic Constriction Injury) model. Group 0 was the control group. Physiological serum was administered to Group SF. Gabapentin was administered; 30 mg/kg, 100 mg/kg, 300 mg/kg to groups G30, G100, G300 respectively. Nitroglycerine was added 1 mg/kg to groups G30+NO, G100+NO, G300+NO respectively. One mg/kg nitroglycerine was administered to Group NO. Drugs were administered intraperitoneally for 21 days. At the fifth, tenth, fifteenth and twenty-first days; the von Frey test was done. At the twenty-first day of the study the hot-plate test was done.

Findings: The highest values were obtained at the G30+NO group after the von Frey test at the fifth and tenth days. At the groups in which the gabapentin was administered at higher doses the values of the von Frey test were lower. The longest time was obtained at G30 at hot-plate test.

Result: At the experimental neuropathic pain model; we found that, administration of 30 mg/kg gabapentin+1 mg/kg nitroglycerin intraperitoneally is the most effective at the treatment of mechanical hyperalgesia. Also it was found that 30 mg/kg gabapentin is the most effective at thermal hyperalgesia.

Key Words: Neuropathic pain, Gabapentin, Nitroglycerin, Von Frey test, Hot-plate test, Rat.

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