

ANALGESIC ACTIVITY OF *OCIMUM SANCTUM* AND ITS COMBINATION WITH TRAMADOL IN MICE

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ABSTRACT

Ocimum Sanctum (OS) is most sacred and famous plant of India because of their ability to cure various diseases. OS is broadly used as traditional medicines for its analgesic and anti-inflammatory activities. Tramadol is clinically effective and centrally acting analgesic. It is actually weak opioid and not likely to produce tolerance and physical dependence as opposed to morphine and other strong opioids. The idea of interaction refers to the potential that when two substances are given concurrently, one substance may interact with another or change its bioavailability and clinical action. Plant extract in combined use with conventional drugs may reflect in therapeutic advantages for the treatment of analgesia, by allowing the use of lower doses, and limiting the side effects. Therefore, the objective of the study is to determine the pharmacology interaction between OS and tramadol in the model of thermal hyperalgesia. The extract of OS is prepared by percolation with 70% ethyl alcohol. The study was carried out using male albino mice with weight of 18-23gm. The alcohol extract, tramadol and fixed-dose ratio OS-tramadol combination were administered systemically to mice and the analgesic activity was evaluated by Eddy's Hot Plate method. Prior to the administration of combination of OS-tramadol, ED₃₀ values for both drugs were estimated from the dose-response curve of the individual drug. The normality of data distribution were tested using Shapiro-wilk and were found to be normal. The mean of analgesic effect of 100mg/kg OS is 10.53±3.16 and 60mg/kg of Tramadol is 14.72±0.25 compared to control group 6.91±1.51 ($p>0.01$). The analgesic activity profile of combination ED₃₀ OS+ED₃₀ TRD showed a far much higher compared to OS extraction alone (12.55±1.54). The Post Hoc test (Dunnett's t-test) showed significant ($p<0.01$) analgesic activity when compared with control and other dosage groups. The results showed that all the treatments produced a dose-dependent on analgesic activity. Basically, the theoretical ED₃₀ value for the OS-tramadol combination was 61mg/kg, significantly higher than the actually observed experimentally ED₃₀ value, 5mg/kg. As a conclusion, combination of OS-tramadol can produce significant result on analgesic activity even in lower dosage which definitely limits the side effects of the drug alone.

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