Median lethal dose (LD 50) determination and evaluation of anti-depressant activity of chloroform fraction of ethanol leaf extract of *Moringa oleifera* Lam in mice

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The objective of the present study was to evaluate the antidepressant activity and median lethal dose of chloroform fraction of the ethanol leaf extract of *Moringa oleifera* Lam in mice. Depression is a significant contributor to the global burden of disease and affects individuals in all communities across the world. Most of the classical antidepressant in clinical use possesses undesirable side effects and their mechanisms of action have not yet been satisfactorily resolved. *Moringa oleifera* has been used in traditional folk medicine for treating central nervous system disorders as well as use as memory enhancing agent. In our present study, we have selected Lorke's method for the LD$_{50}$ determination and behavioral despair models for antidepressant screening namely forced swimming test (FST) and tail suspension test (TST), followed by open field test to buttress the observed antidepressant effect. The result of our LD$_{50}$ was found to be 471/kg body weight and also the result of antidepressant screening suggest that chloroform fraction of the leaf extract of *Moringa oleifera* possess antidepressant activity in mice forced swim test and tail suspension test. Chloroform fraction (CMOLE) was prepared from the freshly collected leaves of *Moringa oleifera*, the leaves were shade dried, pulverized and extracted using 70% v/v ethanol by cold maceration, the resultant ethanol extract was then partitioned with chloroform and the chloroform fraction was kept in the desiccators until use. The antidepressant effect of CMOLE-1(50 mg/kg), CMOLE-2(100 mg/kg) and CMOLE-3(200 mg/kg) was examined using FST and TST in mice. Duration of immobility was recorded with the help of trained observers in both the models. Locomotor activity was also assessed in open field test. Imipramine and CMOLE significantly reduced the duration of immobility in both experimental models as compared to the animals in the control group (distilled water). The results of our study justified the traditional use of *Moringa oleifera* as memory enhancing agent and suggests its potential for use as an adjuvant in the treatment of depression.

An approach to extract treatment/intervention details from medical case reports

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Medical case reports contain detailed information about patients, their illnesses, and the medical procedures they undergo. Such information can provide useful inputs for the study of pharmacovigilance. Because of the plain text nature in which case reports are presented; coded summarization of case reports is often complicated and demand a niche NLP approach. In the present scope, we attempt to extract treatment/intervention details from case presentations of medical case reports. We specifically focus on extracting drug usage details and medical procedures. We use a combination of ontology-based and pattern-driven extraction mechanisms. We employ a sequence tagger and supply fine-grained context features. We build a sentence-context feature that helps reduce false positives. Additionally, we explore the use of phoneme patterns occurring in drug names, learned via a rule mining algorithm, to further enhance detection accuracy. Finally, to resolve long distance dependencies between entities, we use a dependency parser. With a training corpus consisting of 80 manually annotated case reports from Hindawi and OCMR medical case report databases, we test on 10 reports and achieve precision of 83% and recall 84%.

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