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Study of Co-Relation between Antidepressant and Anxiolytic Activities Using *Cinnamomum Cassia* Bark in Rodents

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Abstract

The search for psychoactive plants possessing therapeutic potential in the treatment of depression and anxiety has attracted growing interest.

Materials and Methods: The present study is envisaged on studying the antidepressant, anxiolytic activities of methanolic bark extract of Cinnamomum cassia. The In vivo antidepressant and anxiolytic activities was performed by using forced swim test (FST) & tail suspension test (TST), elevated plus maze (EPM) & rotarod test (RRT). Seventy two mice and twenty four rats were divided into four groups of six animals in each group. Group 1 received normal saline; group 2 and 3 received methonolic extract of Cinnamomum cassia, 200 and 400 mg/kg p.o.; group 4 received Imipramine (5mg/kg i.p) Clonazepam (1mg/kg i.p).

Results:

immobility in control group was found to be higher. But in groups treated with the MECC and standard (Imipramine 5 mg/kg, i.p) the duration of immobility was found to be reduced.

Depression is a mood disorder characterized by low mood, persistent feeling of sadness, a general loss of interest on things. e mood changes may have a psychotic basis with delusional thinking or occur in isolation and induced anxiety. Depression was previously called as melancholia and now it is called as major depressive disorder or clinical depression (Rang & Dale, 2016). Anxiety is an emotion that predates the evolution of man. Children, adolescents and adults experience anxiety in di erent forms; while this is visible in some, it can be inferred in others from their physiological and psychological responses. Anxiety also varies in frequency and intensity in di erent persons, even in response to the same stimulus [1]. Anxiety-depressive diseases are among the main causes of disability in the world and contribute signi cantly to the global burden of diseases (World Health Organization, 2020). Anxiety is accompanied by a characteristic set of behavioral and physiological responses including avoidance, vigilance and arousal, which evolved to protect the individual from danger [2].

Anxiety and depression are leading psychiatric disorders. e chance of acquiring depression is higher when anxiety disorder exists and also people with depression o en feel anxious and worried. Depression and anxiety can occur at the same time. It has been estimated that 45 percent of people with one mental health condition meet the criteria for two or more disorders. Although each condition has its own causes, they may share similar symptoms and treatments.

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Preparation of plant extract Cinnamon bark was cleaned, then was milled into coarse powder using electrical blender. e powdered material was stored or taken up for extraction process.

Acute toxicity studies

Acute toxicity study was carried out in order to check the toxic e ects for methanolic extract of *Cinamommum cassia*

Conclusion

e methanolic extract of *Cinnamomum cassia* was screened for its antidepressant by using forced swim test and tail suspension test. Administration of at dose of 200 mg/kg and 400 mg/kg evoked the maximum depressant activity, as indicated by the decrease in the duration of immobility in forced swim test as well as tail suspension test.

e animals have antidepressant activity which might be due to presence of active constituents like alkaloids, aldehydes (cinnamaldehyde) and avonoids.

e anxiolytic activity was screened by elevated plus maze and