Saraka Asoca Flower And It`S Using

Introduction

Anxiety and other depressive disorders are persons with or without dementia are the most communal types of human mental illness. It is associated with an unpleasant state of tension, apprehension, night-time awakenings and subordinate neuropsychological performance.

Stress, which is a crucial element of existing healthcare society and disease, also plays a significant role in the pathogenesis of neuropsychiatric disorders such as anxiety, depression, cognitive impairment, insomnia, etc. in animals and humans. Stress due to impaired anti-oxidant defense mechanism has also been shown to play role in the pathogenesis of neuropsychiatric disorders. Chronic stress can induce a series of dysfunction in CNS, such as cognitive impairment, anxiety, depression, amnesia, etc. along with altered free radical scavenging enzymes in discrete regions of brain. Exposure to acute restraint stress in rodents has been shown to alter some behavioral parameters and induce depression-like behavior in mice.

Intended for many decades, the main hypothesis to explain and treat depression has been based on the pharmacological effects of antidepressants on monoamine hypothesis (i.e., blockade of serotonin, norepinephrine, and dopamine reuptake or breakdown). However, the time lag for a therapeutic response has led to the hypothesis that cellular and molecular adaptations following therapy are necessary for their antidepressant effects. Various antidepressants, including tricyclic antidepressant therapies, increase the neurogenesis and synaptic connectivity in the cortical area such as hippocampus.

Currently available psychoactive drugs, mainly anxiolytics, and anti-depressants do not often properly meet the therapeutic demands of patients suffering from comorbid psychiatric conditions, and the drawbacks of such drugs include unwanted side effects, incredible benefits and moderate costs. So, herbal plants can be good sources to find new remedies for these disorders. In the search for an alternative, more specific and perhaps cost-effective therapy, research has been conducted to investigate natural anxiolytic drugs as well as new anti-depressant principles.

Saraka asoca belonging to the “Fabaceae” family is a well-known small to the medium-sized handsome evergreen tree. In Hinduism term, ‘Ashoka’ means “one of that relieves pain and grief” and is considered as a sacred tree. It has been widely used by folk medicine as an anti-cancer, antioxidant, anti-bacterial, anti-inflammatory, anti-fertility, anti-arthritic, cardioprotective, larvicidal, antimutagenic/genoprotective, antidepressant, etc. and is extensively used in Ayurveda, Unani and Homeopathy practices. The ethanolic extract of Saraka asoca leaves and bark have been demonstrated to possess antidepressant effect in rodent subjected forced swim test (FST) and tail suspension test (TST). Therefore the present investigation was carried out for phytochemical screening and characterization, followed by evaluation of effects of the ethanolic extract of Saraka asoca flower (Roxb.) Wilde on anxiety and depression through various screening models.

MATERIAL AND METHODS:

Plant materials and extract preparation

The fresh plant flower was collected during the months of April and May (2016) from West Bengal. It was taxonomically identified and was authenticated by the Dr.Mruthunjaya, Department of Pharmacognosy, JSS Pharmacy College, Mysuru and herbarium of the plant is preserved for future references (Specimen Voucher No. SA-10601/Pharma). The collected flower was washed and shade dried at room temperature for 7 days. The Dried flower was coarsely powdered and fine powder was separated. The coarse powder of flower (800g) was subjected to extraction with ethanol by soxhlet apparatus and the extract was concentrated to dryness by vacuum. The extract was then weighed to calculate the percentage of yield in terms of air-dried crude material. The resultants of ethanolic extract of Saraka asoca flower (ESAF) were kept in a refrigerator for further use. Before administration, the extract was freshly prepared with normal saline and three doses (50mg/kg, 100mg/kg and 250mg/kg) were selected based on the results of previous studies.

Experimental animals: Female mice weighing between 22-30gm were randomly selected from the breeding stock of the Central animal facility of JSS Medical College, Mysore. They were housed in polypropylene cages under standard condition (25±3) °C, humidity 45%–55%, 12/12hr light/dark cycle. They were given free access to food and water ad libitum. The animals were acclimatized for a period of 7 days before the study. The study was conducted according to the Indian national science academy (INSA) guidelines for the use and care of experimental animals. The experimental protocols were approved by the institutional animal ethical committee of JSS Medical College, Mysuru (JSSMC/PG/13B10601) registered under Committee for the Purpose of Control and Supervision of Experiments on Animals (261/PO/ReBi/2000/CPSCEA). All efforts were made to minimize the utility and suffering of the animals used in the experiments.

Phytochemical analysis

The extract obtained from the powdered flower of Saraka asoca was subjected to phytochemical tests to determine the presence of active metabolites using standard procedures 9.

Phytochemical characterization of ethanolic extract of Saraka asoca flower using High-Performance Liquid Chromatography

A Shimadzu HPLC (Japan) equipped with LC-10 ATVP Separation module and SPD-10 AVP UV-detector was used for chromatographic study. The column Eclipse XDB C18 (250 mm X 4.6 mm, 5 µm) thermostated at 30°C was used for the separation. Mobile phase A was 0.1% of Acetic acid- prepared by dissolving 0.25mL of acetic acid in 250mL of water and filtered through 0.45 µm membrane filter while, Mobile phase B was Acetonitrile. The analysis was carried out under gradient condition. The wavelength of the chromatographic study was 325 nm.