



Anxiolytic potential of *Tamarindus indica*

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ABSTRACT

Tamarindus indica, commonly known as Imli, is a favorite condiment commonly used in south Indian dishes particularly in Rassam and Sambhar due to its rich nutritional value. The present study was undertaken to investigate the anxiolytic potential of *Tamarindus indica* in mice. A total of 150 Swiss mice divided in 25 groups were employed in this study. *Tamarindus indica* (2%, 4% and 8% w/w) was admixed in diet of mice for a period of 14 days. Elevated plus maze, Light dark model and Hole board test were used as behavioral models in this study. Effect of *Tamarindus indica* on MDA levels was also estimated. Mice prefer to stay in dark zone under normal conditions. Anxiolytics reduce this natural preference to darkness and increase the time spent in the lit compartment. *Tamarindus indica* produced significant ($P<0.01$) increase in the time spent in the lit compartment in light - dark model. *Tamarindus indica* enhanced significantly ($P<0.05$) the number of entries and time spent in the open arms, when tested using elevated plus maze model in mice. The hole-board test provides a simple method for measuring the response of an animal to an unfamiliar environment and is widely used to assess anxiety. *Tamarindus indica* significantly ($P<0.05$) increased the head dip counts in hole-board test at different concentrations (2%, 4% and 8% w/w) indicating its anxiolytic effect. *Tamarindus indica* significantly ($P<0.05$) reduced MDA levels in the brains of mice, thereby revealing its property of bringing about reduction in free radical generation. These findings reveal the anxiolytic potential of *Tamarindus indica*.

Key words : Elevated plus maze, Hole board test, Light- dark model, Tamarind

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INTRODUCTION

Anxiety is a normal human emotion in fast paced life, which encompasses behavioral, affective and cognitive responses to the perception of danger. In moderation, anxiety stimulates an anticipatory and adaptive response to stressful events. In severe form, anxiety destabilizes the individual interfering in his day-to-day activities. Anxiety is considered pathological, when it is out of proportion to the challenge and arises in the absence of stress. There are various types of anxiety disorders, such as generalized anxiety disorder (GAD),

obsessive-compulsive disorder (OCD), post traumatic stress disorder, panic disorders and phobias (Parle *et al.*, 2010). Anxiety affects one eighth of the world's population and has become a very important area of research interest in psychopharmacology due to its high prevalence (Eisenberg *et al.*, 1998). Benzodiazepines are still the most frequently used drugs for the treatment of generalized anxiety disorder despite their undesirable side effects such as skeletal muscle relaxation, sedation, physical dependence and memory impairment (Parle and Chaturvedi, 2012). In recent years, the development of new anxiolytics from plant origin has been an area of interest. Various types of herbal medicines have been used as anxiolytics in different parts of the world. The root of the kava plant from the tropical Pacific region, St. John's wort from Europe, and saponin containing fraction of the leaves of *A. lebbbeck* are known to have anxiolytic effects (Alqasoumi, 2012). Each and every part of the tamarind tree, especially the fruit is beneficial for the society. Tamarind is also reported to have significant antidepressant activity (Parle and Dhamija,

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