

## TOXIC EFFECTS OF *ABRUS PRECATORIUS* EXTRACT ON LIVER AND KIDNEY OF ALBINO MICE

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**ABSTRACT :** *Abrus precatorius* L. is an important medicinal plant belonging to family Fabaceae. The present study was conducted to perform pre-clinical safety evaluation and study the pharmacological effects of the ethanolic seeds extract of *A. precatorius* in management of pain, psychiatric and neurological conditions. Acute toxicity was performed to study the general behavioural pattern of mice after treatment with the test extract (single doses of 1000, 2000, 3000, 4000, 5000 mg/kg, body weight) and sub-acute toxicity studies were performed to study the toxic effects of the test extract (1000, 2000, 3000 mg/kg, per os for 14 days) on different haematological parameters, body and organ weight and histopathology of liver and kidney. The toxicological evaluation of *A. precatorius* ethanolic extract (chiefly in dose 1000 mg/kg), were seen mononuclear cells infiltration in central vein with aggregation of degraded granular hepatocyte. Although, in higher doses (2000 and 3000) mg/kg, the lesions become congest of central vein with infiltration of inflammatory cells and enlargement of hepatocyte cells joints with Kupffer cells. In kidney sections congestion without any lesion in dose 1000 mg/kg, but with high doses 2000 and 3000 mg/kg, the lesion was augmented as side effect of herbs extract on epithelial lining of urinary tubules with severe hemorrhage accompanied by a large number of inflammatory cells with lymphocyte.

**Key words :** *Abrus precatorius*, acute, subchronic toxicity, hematology, histopathology.

### INTRODUCTION

Medicinal plants offer numerous opportunities for the development of new drugs, as extract, pure compound, or derivative. The natural origin, however, does not guarantee their safety for medicinal purposes. Most herbal products used in folk medicine have strong scientific evidence regarding their biological activities. However, the main obstruction to the use of herbal preparations is the lack of scientific and clinical data in support of better understanding of the efficacy and safety of drugs. Different toxicological study data like acute and subchronic on medicinal plants or their preparations should be obtained in order to increase the assurance of their safety in humans, particularly for use in the development of pharmaceuticals.<sup>1,2</sup>

*Abrus precatorius* L. is a vine belonging to family Fabaceae. It is originally native to India and is now found throughout the tropical and subtropical parts of the world (Morton, 1982). In West Tropical Africa the leaves of *A. precatorius* are used to sweeten foods and are also used as medicine for stomach complaints. They are also used to treat fever, cough and cold (Morton, 1981; Irvine, 1961). They are also applied on cuts, swellings and mouth ulcer and further used as an abortifacient, laxative,

sedative, aphrodisiac and nerve tonic (Qadry, 2005). The roots of the plant are used for treatment of gonorrhoea, jaundice and haemoglobinuria. The oil extracted from seeds is said to promote the growth of human hair (Samy et al, 2008). Many phyto-constituents were reported from *A. precatorius* like Glycyrrhizin (Rastogi and Mehrotra, 1998), Abrusosides A–E (Sankaranarayanan *et al*, 2010), triterpene glycosides, steroids, alkaloids like abrine, hypaphorine, cholin and precatorin, flavonoids like vitexin, toxifolin-3-glucosides (Daniel, 2006). According to the available literature the leaves of *A. precatorius* is used traditionally as a nerve tonic and also as a pain reliever, however scientific information on its analgesic and neuropharmacological properties is still not available or rather scarce. Looking at the present scenario of developing safer drugs to combat pain, psychiatric and neurological disorders, and also to establish scientific evidence of the plant's folkloric use, this work was designed to study the toxicological effects of ethanolic leaves extract of *Abrus precatorius* L. (ELEAP) and also evaluating the analgesic and neuro-pharmacological activities like muscle relaxant, locomotor, anti-epileptic and anti-depressant activities.

The aim of this study was thus based on the subchronic