EFFECT OF LONG-TERM USE OF EURYCOMA LONGIFOLIA ON THE VITAL ORGANS IN RAT

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ABSTRACT

1.0 Introduction

In recent years, the use of Eurycoma longifolia Jack (ELJ) has spread dramatically in Southeast Asia especially Malaysia. Its consumption has become popular in daily life as a beverage to enhance energy and stamina especially among males. However, its effect on the safety of vital organs of the body is not studied properly. Hence, the main objective of this study was to determine whether or not long-term use of ELJ has side effects on vital tissues from the liver, pancreas and kidney in rats.

2.0 Materials and Methods

Three different concentrations of aqueous extract of ELJ were prepared, a total of 32 Sprague-Dawley male rats were randomly divided into three test groups and a control group. The three test groups were given different doses of ELJ aqueous extract (low 250 mg/kg bw, medium 500 mg/kg bw and high 1000 mg/kg bw) respectively. The control group was given distilled water. Doses were given orally and daily for 5 weeks. After 5 weeks, animals were sacrificed; whole pancreatic, hepatic and kidney tissues are obtained and prepared for histological examination.

3.0 Results

Histological observations showed no signs of hemorrhage, fatty changes or cell degeneration in the pancreatic, hepatic and kidney tissues in the three test groups treated with low and medium doses in comparison with control. However, a moderate degree of hemorrhage was observed in kidney tissue, moderate fatty changes and inflammation were observed in the hepatic tissue of the groups treated with high dose ELJ (1000mg/kg bw) water extract.

4.0 Discussion and Conclusion

Several studies on ELJ have been conducted on small animals in order to find out its various biological effects. However, its efficacy on the safety of bodily organs is not adequately studied. Currently, the levels of safety for the use of herbal drugs have become the center of attention. Various herbal drugs in the market are prescribed for various ailments without the inclusion of a toxicity profile. Such prescriptions may pose serious or fatal problems for the patients who are consuming such traditional medication. The major drawback of employing...
folklore herbal remedies is the lack of scientific evidence to support the level of safety, quality and toxicity related to such herbal drugs. To our knowledge, presently, there is no available data in published literature on the safety and side effects or any deleterious effect of long term use of the products prepared from the ELJ plant. Furthermore, the plant extracts used for commercial preparations might not fulfill the standard criteria regarding the concentration of the active principles, as there might be wide variations with regards to age, growth conditions, environmental effect and plant source (1). Our previous study indicated that water extract of ELJ showed moderate protection against hepatotoxicity induced by carbon tetrachloride (2). As a conclusion, the daily consumption of ELJ as a beverage has no side effect on pancreatic, hepatic and kidney tissues when taken in small quantities for a long duration. However, daily consumption in large quantities of ELJ root powder as capsules or in beverage form for long term may cause moderate to severe fatty changes and hemorrhage in some vital tissue in rats.

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References
