INTERNATIONAL CONFERENCE ON AGRICULTURAL, ECOLOGICAL AND MEDICAL SCIENCES

FEBRUARY 6 - 7, 2014
BALI - INDONESIA

Organized by: IICBE.Org
EFFECT OF LONG-TERM USE OF Eurycoma longifolia ON THE LIVER

(Histology Assessment)

*Hamoud Alfaqeh

Faculty of Dentistry
International Islamic University Malaysia
25200 Kuantan, Pahang DM, Malaysia

*Corresponding Author: Hamoud Hussein Alfaqeh
Email: fanousi08@gmail.com/alfaqeh@iium.edu.my
INTRODUCTION

✓ Medicinal plants have been used since the time immemorial for medical purposes with respect to benefit mankind.

✓ *Eurycoma longifolia* Jack (*ELJ*) is one of the medicinal plant that is well known among various ethnic groups in Asia including Malaysia for enhancing health (1).

✓ It has been claimed that *ELJ* improves men’s power during sexual activities(2).

✓ In the present the *ELJ* water extracts has a better market value as beverage (3).

✓ There is a lack of scientific evidence or published data on the efficacy of long-term consumption of *ELJ* as beverage among men and women for its vitality during copulation, and traditional uses for energy incited us to evaluate its effect on the safety of body organs (4)
The present study is aimed to determine if long term consumption of *Eurycoma longifolia* Jack as beverage could have any deleterious effects on the liver tissue in rats.
Materials and methods

- The study was conducted after an approval from the Research Management Center, International Islamic University Malaysia (IIUM).
- Thirty two Sprague-Dawley male rats were used and randomly divided into three test groups and control.
- Water extract of ELJ was given orally and daily for 5 weeks.
- Rats were sacrificed and full liver tissue was obtained for histology assessment.
The experiment is designed as shown in the table below.

<table>
<thead>
<tr>
<th>Gp</th>
<th>Rat</th>
<th>Treatment for duration of 5 weeks</th>
<th>Doses intake</th>
<th>Doses duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>8</td>
<td><em>ELJ</em> water extract 250 mg/kg bw</td>
<td>Orally</td>
<td>Daily for 5 weeks</td>
</tr>
<tr>
<td>II</td>
<td>8</td>
<td><em>ELJ</em> aqueous extract at 500 mg/kg bw</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>III</td>
<td>8</td>
<td><em>ELJ</em> aqueous extract at 1000 mg/kg bw</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>IV</td>
<td>8</td>
<td>Distilled water (control)</td>
<td>------</td>
<td>------</td>
</tr>
</tbody>
</table>
The Result
Clinical observations

There was no evidence of infection or mortality among rats was observed in any of the animals before and during the experiment.
Microscopic observations
Group I: ELJ water extract 250 mg/kg bw. shows mild hydropic, fatty changes and mild haemorrhage and mono nuclear infeltration 20x

Group control (Distilled water alone showed normal liver tissue, magnification 20x.

In- inflammation, CV-central vein, PA-portal area, FC-fatty changes and BiD- Bile duct.
Liver tissue from group II, treated with ELJ medium dose (500 mg / kg, bw) Shows moderate fatty changes and inflammation 20x

Liver tissue from group control (Distilled water alone showed normal liver tissue, magnification 20x

In- inflammation, CV-central vein, PA-portal area, FC-fatty changes and BiD- Bile duct.
Liver tissue group 3 treated with ELJ high dose (1000 mg / kg, bw) shows severe degeneration of hepatocytes, fatty changes, degeneration of hepatocytes and haemorrhage 20x.

Group control (Distilled water alone) showed normal liver tissue, magnification 20x.

In- inflammation, CV-central vein, PA-portal area, FC-fatty changes and BiD- Bile duct.
Discussion

✓ The levels of safety for the use of herbal drugs have become the center of attention now.

✓ Various herbal drugs in the market are prescribed for various infirmities **without including** any toxicity profile.

✓ Such prescriptions may cause serious or fatal problems for the patients who are dependent on such traditional medications.

✓ To our knowledge at present there are no available data in the literature on the safety and on the side effects or any deleterious effects of long term use of the products prepared from the ELJ plant.

✓ The study of long-term consumption of ELJ as daily beverage and its potential efficacy on the safety of some vital organs such as liver are not fully studied yet.
Conclusion

- It is strongly suggested that Regular use of *Eurycoma longifolia* Jack (*ELJ*) at low doses does not appear to cause any toxic effect on liver and could be considered safe herbal supplement as far as the safety of liver in human being is concerned.

- The long-term daily consumption of *ELJ* when taken in large quantity either as beverage or capsules may cause fatty changes, haemorrhage and hepatocytes degeneration in the liver tissue.
ACKNOWLEDGEMENTS

This study was financially supported by the Research Management Center (RMC), International Islamic University Malaysia, fund no EDW B11-249-0727.

I am thankful to the Kulliyyah of Pharmacy, IIUM for providing all research facilities to accomplish this research.
Publications


References


Thank you for listening