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HAEMATOLOGICAL AND HISTOLOGICAL STUDY OF *Phyllanthus amarus* ALCOHOLIC LEAF EXTRACT ON THE ALBINO MICE

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Abstract: *Phyllanthus amarus is a herbs plant of the family Euphorbiaceae. The spices are found in tropical and subtropical countries of the world wide. It is traditionally used. Haematological studies of Albino mice on the effect of aqueous leaf extract of Phyllanthus amarus. Extract used for there treatment of kidney stone, jaundice, diarrhea and urogential diseases. Alibino mice (n=24) sexes, average weight of 250 have selected in three group I, II and III Each group contain n=8. I group is control group. II and III group have taken 250 mg/kg, 500 mg/kg body weight orally through 0-tube for 35 days, control group have taken equal amount of only water (in volume) at the same time. After 35 days Albino mice dissected and removed the kidney quickly the fixed in 10 % formaline for heamoatological study. Results indicated that the treated parts show hypertrophy of blood vessels (V.B.) mild-severe infiltrate of chronic inflammatory cells when compared with control group. We obtain indicated that the Phyllanthus amarus aqueous leaf extract has to show adverse effect on the kidney of use Albino mice. It is highly recommended for the studies attempt at correlating observations are worked out.*

Keywords: *Phyllanthus amarus, Kidney, Albino mice, urogenital diseases, chronic inflammatory cells, tubular necrosis.*

Introduction: *Phyllanthus amarus* is herbs belong to family Euphorbiaceae. It has 800 species found in tropical and subtropical countries among the world. It is traditionally used in different diseases e.g. diarrhea, dysentery, atrophy, jaundice, intermitted fever, urinogenital disorders, scabies, wounds. Kidney problem. *Phyllanthus amarus* is a branching annual glabrous herbs which is 30-60 cm in height and have slender, leaf bearing branches, elistichous leaf which are subsessile elliptic-oblong, obtuse, rounded base. Flowers are yellowish whitish or greenish auxiliary males flower in groups of 1-3 where as female are solitary fruits are depressed globose like smooth capsules present underneath branching and seeds are trigonous pale brown in parallel ribs. The historic role of medicinal herbs in the treatment and prevention of disease and their role as catalysts in the development of pharmacology do not however assure their safety for uncontrolled use by an un-informed public [1].

Phyllanthus amarus is used in tradition medicine to treat chronic disease [2]. So many toxicity reported in *Phyllanthus amarus*.[3] Phytochemical analysis show the conformation of tannins. saponins, flavonoids and alkaloids. It is earlier reported [4].

The heamatological and histological study attempt by alcoholic leaf extract on Albino mice a very few literature reports available have been collected [5]. Histopathological study confirmed the beneficial effect of *Phyllanthus amarus* with the potential antioxidant activity experiment shows haematological changes in Albino mice.

The work has aimed to investigate Haematological and histological study, effect of *Phyllanthus amarus* leaf extract on the kidney and liver of Albino mice.

Materials and Methods

Fresh leaf of *Phyllanthus amarus* were collected in December 2015 at Patna and Vaishali districts of Bihar state in India. The harvested fresh leaf were dried in sun and make fine powder with the help of grinder mixture. Fine powder in about 250 gm dissolved in 4 liters of 70 % alcohol for 56hrs at 4^0C in a refrigerator.

It was filtered with the help of whatman No 1 filter paper. The filtrate was kept in a stainless-steel tray and concentrated in air circulating hot air-oven at 65^0C. Then totally dry we finally obtained (5 gm) extract has kept in to small glass bottle and stored at 25^0C in a incubator.

The Albino mice in the treatment groups (II and III) received 250 mg/kg bodyweight and 500 mg/kg bodyweight. Aqueous extract of *Phyllanthus amarus* orally with the help of an orgastric tube on a fixed period. The control group I has taken an equal volume of distilled water without the extract of *Phyllanthus amarus* added for 35 days.

Result and Discussion

Blood samples have collected and analyzed serum urea and serum creatinin regents used commercial kits on the 35 days. We dissect the Albino mice and remove the kidney with the help of forceps and quickly fixed in 10 % formaline for heamatological and histological study.

The tissue dehydrated in ethanol then clean in xylene and embedded in paraffin was using rotary microtome for section cutting. Deparaffinized section were stained with hematoxyline and eosin method [6].

Blood sample collect for haematological study (R.B.C., W.B.C. and platelets). Thirty five days after the treated albino mice showed than control significant reduction in their body weight (Group I and Group II). No change in body weight of untreated albino mice means group III. Also treated group reduced the blood glucose level. Treated group showed significant reduction in serum insulin level, number of R.B.C., number of W.B.C. and platelets compared to control group.

Also the concentration of serum malondialdehyde compared to control reduced. Significant showed according to dose and body weight control section of kidney show cortical parenchyma dense and rounded structure. Treatment of 200 mg/kg body weight of *Phyllanthus amarus*, albino mice revealing level of cyto-architeclural distortion. Treatment of 800 mg/kg body weight revealing moderate cyto-architeclural distortion, degenerative and atrophic changes and vaculations appearing in strome.

In the present study in case of Haematological study partial distortion of cell (R.B.C., W.B.C.) and β-cells causes a decrease in insulin secretion which is materialized by a chronic hyperglycemia [7]. There are several diffuse degeration and necrosis of the tublar epithelial cell in the kidney of the treated albino mice [8]. The degenerative and atrophic changes where observation in the kidney of albino mice that received the higher dose (800 mg/kg).

The importance of this reports indicates in the potential adverse effect of *Phyllanthus amarus* on the microtone slide and organs and tissue. In the kidney indication show necrosis and protein [9, 10]. The necrosis observed is probably due to the high concentration of (800 mg/kg) *Phyllanthus amarus* on the kidney.

Conclusion

Present results show the rate of malondialdehyde a marker of lipid perozeidation decreased in the treated group with alcohol (70 %) compared to untreated group. *Phyllanthus amarus* affect the histology of the kidney of albino mice cawing disruptions and distortions of the cyto-architecture. The results suggest the function of kidney, in case of histology affected. In case of haematology adversely affected in the blood constituent.

References

1. Matthews, G., Campbell, S.E., Falconer, S., Joyner, L.A., Huggins, J., Gilliland, K., Grier, R., Warm, J.S. (2002). Fundamental dimensions of subjective state in performance settings: task engagement, distress, and worry. *Emotion.* 2(4):315-40.
2. Liu Z, et al. (2003). Retrograde signaling is regulated by the dynamic interaction between Rtg2p and Mks1p. *Mol Cell,* 12(2):401-11
3. Santos, P.R.V., Oliveira, A.C.X., Tomassini, T.C.B. (1995). Control microbiogicode productos. Fitoterapicos. Rev. Farm. *Bioquim.,* 31: 35-38.
4. Fernand, V.E. (1998). Initial characterization of crude extracts from *Phyllanthus amarus* schum and *thonn* and *Quassia amara L.* using normal phase thin layer chromatography. Louisiana State University; pp. 6–13. [Thesis]
5. Naaz, F., Javed, S., Abdin, M.Z. (2007). Hepatoprotective effect of ethanolic extract of *Phyllanthus amarus* Schum. et Thonn. on aflatoxin B_1-induced liver damage in mice. *J Ethnopharmacol.*, 113:503–509.
6. Krithika, R., Verma, R. J. (2009). Mitigation of carbon tetrachloride-induced damage by *Phyllanthus amarus* in liver of mice. *Acta Pol Pharm.,* 66(4):66(4):439–444. 2009
7. Drury, R.A.B., Wallington, E.A. and Cameron, R. (1967). Carleton's Histological Techniques. 4th Edn., Oxford University Press, NY, USA, pp. 279-280.
8. Ene, A.C., Nwankwo, E.A. and Samdi, L.M. (2008). Alloxan-induced diabetes in rats and the effects of black caraway (*Carum carvi* L.)

oil on their body weights. *J. Pharmacol. Toxicol.*, 3: 141-146.

9. Manjrekar, A.P., Jisha, V., Bag, P.P., Adhikary, B., Pai, M.M., Hegde, A., et al. (2008). Effect of *Phyllanthus niruri*Linn treatment on liver, kidney and testes in CCl4 induced hepatotoxic rats. *Indian J Exp Biol.*, 46:514–520.
10. Adedapo, A.A., Adegbayibi, A.Y., Emikpe, B.O. (2005). Some clinico-pathological changes associated with the aqueous extract of the leaves of *Phyllanthus amarus* in rats. *Phytother Res.*, 19:971–976