SUMMARY & CONCLUSION
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In almost all the traditional systems of medicine, the medicinal plants play a major role and constitute their backbone. Indian Materia Medica includes about 2000 drugs of natural origin almost all of which are derived from different traditional systems and folklore practices. In this traditional system of medicines, a single drug or combinations in raw form are preferred over compound formulations. The system offers excellent remedies for gastrointestinal, cardiovascular and nervous disorders. Though the origins and development periods of these systems of medicine are of different there is a common thread running through these systems in their fundamental principles and practices by using the plants and plant-based formulations in the health care.

The objective of this present study was to determine the effect of EREAL (Ethanolic Root Extract of *Aporosa lindleyana*) on INH-RIF induced hepatotoxicity in rats. *Aporosa lindleyana*, a simple plant, in which roots are well known for its *in vitro* and *in vivo* antioxidant, and antidiabetic activity. Thus, this study primarily emphasized the preliminary phytochemical screening, antibacterial quantitative screening of biomolecules and invitro free radical scavenging effect of EREAL and the effect of EREAL against INH-RIF induced hepatotoxicity, oxidative stress, hyperlipidemia and histopathological alterations in experimental albino wistar rats.

The preliminary phytochemical screening revealed the presence of phenolic compounds and tannins, carbohydrates, flavonoids, triterpenoids, and reducing sugars in all the extracts. Alkaloids, steroids were absent in all the extracts. Saponin found only on chloroform extract. Xanthoprotein and aromatic acids were found on the methanol and ethanol extracts. Proteins found only on the ethanol extract.
EREAL revealed the presence of phenol and flavonoids attributes the pharmacological properties of *Aporosa lindleyana*. Thus the plant which contributes more medicinal value on the human community. Flavonoids showed antioxidant activity and their effects on human nutrition and health are considerable.

Paper and thin layer chromatographic profile of EREAL showed the presence of active phytochemicals such as phenolic compounds and flavonoids through the GC-MS analysis. GCMS analysis of EREAL exhibits the presence of active phytochemicals such as phthalic acid, squalene, which revealed the antimicrobial, antifouilative and antioxidant properties. These values contributes much effective role in the biological system. On the other hand, squalene and ferulic acid which provides the anticancer /antitumour and antidermatal effect on the human system.

The results on the antibacterial activity of EREAL was observed as the possible effective inhibition against various pathogenic bacteria showed that the EREAL was encouraging and it possessed good antibacterial activity. Quantitative screening of biomolecules carbohydrates and protein analysis of EREAL revealed the presence of glucose and the proteins indicates the EREAL possesses sufficient nutritive value.

Remarkable elevation in the activities of hepatic marker enzymes (AST, ALT, ALP and GGTP) were observed in INH-RIF induced rats, which decreased significantly upon EREAL treatment. Unconjugated hyperbilirubinemia was observed in INH-RIF induced rats, showing the functional abnormality of liver. Renal function markers (urea, uric acid and creatinine) were also elevated in the serum of INH-RIF induced rats. Near normalization of these parameters by EREAL treatment represents
its ability to maintain the normal functional status of liver and kidney in INH-RIF toxicity induced rats.

INH-RIF administered rats showed increased oxidative stress not only by increasing the lipid peroxidation but also by decreasing the antioxidant capacity in plasma, tissues of liver and kidney. Administration of EREAL effectively controlled the lipid peroxidation process in INH-RIF rats, which were manifested by the decreased levels of lipid peroxidative markers such as thiobarbituric acid reactive substances and lipid hydroperoxides in the plasma and tissues. EREAL also improved the antioxidant status of INH-RIF rats by increasing the activities of superoxide dismutase, catalase and glutathione peroxidase and the levels of reduced glutathione, ascorbic acid and α-tocopherol.

INH-RIF induced rats showed elevated levels of circulatory and tissue lipids and decreased levels of liver glycogen. Administration of EREAL resulted in the significant reduction in cholesterol, free fatty acids, triglycerides and phospholipids in the plasma, tissues and elevated levels of liver glycogen in the INH-RIF rats.

Histopathological examination of INH-RIF induced rats of liver showed the significant improvement in the structure of liver by the administration of EREAL. EREAL reversed the changes caused by the INH-RIF induced toxicity by regaining of normal central vein and sinusoid. Histopathological examination of INH-RIF induced rats of kidney showed cloudy swelling of tubules and glomerulosclerosis. Administration of EREAL showed mild condition of focal fatty infiltration of glomeruli and tubules. Such a way, EREAL have the potency to decrease the severity of INH-RIF induced toxicity.
CONCLUSION

The present study revealed that the EREAL (Ethanolic Root Extract of Aporosa lindleyana) possess good hepatoprotective, antibacterial, definite antioxidant and antihyperlipidemic effects either through stabilization of cellular membrane or antiperoxidase activity in INH-RIF induced hepatotoxic rats and these properties are comparable with the standard drug silymarin.

The present phytochemical study revealed the presence of antioxidants such as squalene, ferulic acid and phthalic acid. This report is first of its kind for Aporosa lindleyana. Recent literature survey indicated strongly that the results of the present study are entirely new one.

Further studies on phytochemistry may lead to the discovery of hitherto unreported compounds which may be useful in the development of the new potent antihepatotoxic drugs.