

Cholesterol Modulating Properties of a Proprietary Extract from *Phyllanthus* spp on Hypercholesterolaemic Mice Models

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Abstract : Introduction: Plants from the *Phyllanthus* genus have been used indigenously for the treatment of a variety of ailments for generations. A cocktail of phytonutrients prepared from a plant of the genus *Phyllanthus* has demonstrated the potential to alleviate ailments which include cardiovascular disorders. In this study, we investigated the cholesterol modulating properties of a highly purified proprietary extract of a *Phyllanthus* species in hypercholesterolaemic mice. Methods: Hypercholesterolaemia was induced in ICR mice by ad-libitum feeding of high fat diet daily for six weeks. The mice were then divided into 3 groups and force fed with 10mg/kg of atorvastatin, 200mg/kg of the proprietary *Phyllanthus* extract and water respectively. Blood samples were taken at the end of fourth week of treatment by a tail prick. At the end of the eighth week of treatment, mice were sacrificed and serum levels of total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL) and triglycerides were measured. Results: The mean cholesterol levels in the mice fed with high fat diet were 44% ($p < 0.05$) higher than the mice on normal diet thus validating the model developed. The plasma HDL was significantly elevated in mice treated with the formulation ($p < 0.05$) in comparison to the statin-treated and control mice. The total cholesterol levels in the mice treated with the proprietary extract were reduced significantly ($p < 0.05$) at the end of 4 weeks of treatment in comparison to the mice treated with atorvastatin. By the end of 8 weeks of treatment, there was no significant difference in the cholesterol levels of the mice in all groups. Conclusion: These results demonstrate that this proprietary extract from *Phyllanthus* species has the beneficial effect of reducing total cholesterol level more rapidly than atorvastatin and increasing HDL levels. Since an increase in the HDL cholesterol can reduce the risk of heart disease, this proprietary extract is a useful and safe therapeutic option compared to atorvastatin.

Keywords : high-density lipoprotein, hypercholesterolaemic mice model, ICR mice, *Phyllanthus* spp.

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