ABSTRACT

Background: Hyperlipidemia is the key factor in the development of atherosclerosis, liver disorders and oxidative stress. For treatment of atherosclerosis and various cardiovascular diseases, much attention has been focused on the use of natural products that have very few side effects. *Terminalia Arjuna (Arjuna) and Embilica Officinalis (Amla)* occupy the pride of place in the context of such medicinal values. *Terminalia Arjuna (Arjuna)* is herbal tree of combretaceae family. Bark of *Terminalia Arjuna (Arjuna)* contains hypolipidemic agents and flavonoids such as arjunolic acid, arjun glycosides, arjunone with rich antioxidative properties. It serves as a cardiac tonic.

*Embilica Officinalis (Amla)* is also known as *Amla* or Indian gooseberry acts as antihyperlipidemic and antioxidant. Its active ingredients contain tannins, gallic acids and flavonoids.

Aims and Objective: The aim of the present study was to assess the effect of ethanolic extract of *Terminalia Arjuna (Arjuna) and Embilica Officinalis (Amla)* on cardiovascular system and histological alteration of heart, elastic artery, muscular artery and coronary artery of albino rats fed with high fat diet.

Materials and methods: Extraction of *Terminalia Arjuna (Arjuna) and Embilica Officinalis (Amla)* by soxhlet apparatus using 99% ethanol at 60° temp for 22hrs and phytochemical analysis was done. Group 1 served as normal control/Iso-caloric diet. Group 2 fed with hyperlipidemic diet. Group 3 fed with hyperlipidemic diet and treated with *Terminalia Arjuna (Arjuna)* for 21 days. Group 4 fed with hyperlipidemic diet and treated with *Embilica Officinalis (Amla)* 21 days and Group 5 fed with hyperlipidemic diet and treated with *Terminalia Arjuna (Arjuna) and Embilica Officinalis (Amla)* for 21 days.
Dose of ethonolic extract of *Terminalia Arjuna (Arjuna)*: (500mg/kg body weight daily) and *Emblica Officinalis (Amla)* (100mg/kg body weight daily).

**The results:** Significant percent body weight gain in group 2 (Hyperlipidemic diet fed rats), however these changes were not observed in hyperlipidemic rats treated with *Terminalia Arjuna (Arjuna)* and *Emblica Officinalis (Amla)*. There was significant improvement in coronary arterial wall thickness and lumen diameter. Coronary artery showed early fatty changes in hyperlipidemic rats group 2, which brought back to normal in group 3, 4 and 5. (Group 3 rats fed with hyperlipidemic diet and treated with *Terminalia Arjuna (Arjuna)*, group 4 rats fed with hyperlipidemic diet and treated with *Emblica Officinalis (Amla)* and group 5 rats fed with hyperlipidemic diet and treated with *Terminalia Arjuna (Arjuna)* and *Emblica Officinalis (Amla)*).

**Conclusion:** Results indicate both these two drugs are cardioprotective against hyperlipidemia induced alteration of cardiovascular pathophysiology.