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- 10.1093/ecam/neq003



**eCAM Advance Access published online on January 28, 2010**

eCAM, doi:10.1093/ecam/neq003

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## Anti-atherogenic Activity of Ethanolic Fraction of *Terminalia Arjuna* Bark on Hypercholesterolemic Rabbits

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Atherosclerosis which results from gradual deposition of lipids in medium and large arteries is a leading cause of mortality worldwide.

*Terminalia arjuna* is a herb of Combretaceae family which contains hypolipidemic compounds and flavonoids with high antioxidative properties. This study was conducted to determine the effect of ethanolic fraction of *T. arjuna* on blood lipids and atherosclerosis in rabbits fed with high fat diet (HFD). Twenty New

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Zealand rabbits of either sex were randomly divided into five groups: the first two were normal diet group and HFD (21% fat) group and the remaining three groups received high cholesterol diet supplemented with standard drug (Atorvastatin 10 mg kg<sup>-1</sup> body weight), *T. arjuna* ethanolic fraction (100 and 200 mg kg<sup>-1</sup> body weight), respectively. The concentration of total cholesterol (TC), low density lipoprotein (LDL) cholesterol, triglycerides (TGs), very low density lipoprotein (VLDL) cholesterol and high density lipoprotein (HDL) cholesterol was determined in rabbits at the start of the experiment, at the 14th, 30th days and at the end of the study. Anti-atherogenic index was calculated from the lipid profile of the rabbits before sacrifice. At the end of the experimental period, the aorta was removed for assessment of atherosclerotic plaques. Results show that *T. arjuna* significantly decreases TC, LDL and TG levels and increases HDL and lessens atherosclerotic lesion in aorta ( $P < 0.05$ ). Hence *T. arjuna* extract can effectively prevent the progress of atherosclerosis. This is likely due to the effect of *T. arjuna* on serum lipoproteins and its antioxidant and anti-inflammatory properties.

**Keywords:** atherogenic index – atherosclerosis – high fat diet model – *Terminalia arjuna*

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Received July 17, 2009; accepted December 27, 2009

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Online ISSN 1741-4288 - Print ISSN 1741-427X

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