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Terminalia arjuna AS A CARDIAC ENDURANCE ENHANCER FOR OPTIMAL PERFORMANCE OF ATHLETES

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One in two hundred thousand of young athletes die due to abrupt onset of ventricular tachycardia or fibrillation in competitive sports era. Hence cardiovascular endurance has a significant role in performances of sports. The utility of Arjuna in various cardiovascular diseases has turned in to cardiovascular endurance enhancer in sports medicine. Terminalia arjuna, commonly known as Arjuna, belongs to the family of Combretaceae. It is considered as one of the Hrdya dravya in Ayurveda. The present review is an effort to give a detailed survey of the literature summarizing the experimental and clinical studies pertinent to Arjuna in cardiovascular endurance, which were particularly performed during the last decade. The main used part of Arjuna in cardiovascular disorders is bark, bark decoction with milk. Arjuna has Pungent taste, Lagu, Ruksha Guna, Sheetha Veerya, Katu Vipaka and Hrdya (Cardio protective) as the special action. Studies have showed active compounds of bark stem as phytosterol, lactones, flavonoids, phenolic compounds, tannins and possess diuretic, inotropic, antiischemic, hypo-lipidemic, anti-hypertrophicproperties. It increases the coronary flow, force of contraction of cardiac muscle, induces myocardial heat shock proteins and augments myocardial endogenous antioxidants which offer cardio-protection against oxidative stress. Study reveals 4.9 % increase maximum O2 consumption (vo2 max), 4.2 % decrease in systolic blood pressure, 3.6 % increase in average absolute power of lower limbs with 8 week supplementation of bark extracts. In spite of this, elevated cardiac biomarkers due to transient acute volume overload of the atria and right ventricle, transient reductions in right ventricular ejection fraction arenormalize within 7 to 10 days. These advancements in findings of Arjuna can are used as cardiac endurance enhancer in exercise. However, major lacunae of these studies include the lack of phytochemical standardization of the extract, bioavailability studies and well-designed studies to evaluate its long-term toxicity effects.

Keywords: Terminalia arjuna, Arjuna, Hrdyadravya, Cardiovascular endurance