



The Effect of *Terminalia Arjuna* in Management of Cardiovascular Disease- A Medicinal Plant Review

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ABSTRACT

Terminalia Arjuna, is the botanical name of Arjuna, belongs to Combretaceae family. *Terminalia Arjuna* bark powder is astringent, diuretic and cardio protective property in bark. Bark decoction of *Terminalia Arjuna* is used for Angina pain, Congestive heart failure, Hypertension and Dyslipidemia. Both clinical and experimental studies, have suggested that the drug possesses anti ischemic, hypolipidemic, antioxidant and antiatherogenic activities. The drug has shown promising effect on Ischemic cardiomyopathy. So far, no serious side effects of *Terminalia Arjuna* have been reported. Its useful phytoconstituents are: β -sitosterol, Triterpenoids, flavonoids, and glycosides. Triterpenoids and flavonoids are responsible for its beneficial antioxidant cardiovascular properties. However; its long-term safety still remains to be elucidated. Though there have been seen very beneficial results in mild hypertension, angina pectoris and dyslipidemia.

Keywords- *Terminalia Arjuna*, Cardioprotective, Antioxidant, Cardiovascular disorders, Bark.

Introduction

Terminalia Arjuna also called Arjun Tree and Botanically *Terminalia arjuna* is medicinal plant mainly used for heart diseases due to its cardio protective and cardiostrengthening properties. It strengthens cardiac muscle and normalizes (mainly reduce) heart beat. In addition, it is a good source of minerals, which helps to prevent bone loss and improve bone mineral density. The use of *Terminalia Arjuna* bark in cardiovascular diseases has attracted considerable attention in recent years. A number of clinical studies have also reported beneficial effects in patients of chronic stable angina (chest pain or discomfort that usually occurs with activity or stress. Angina is chest

discomfort due to poor blood flow through the blood vessels in the heart.), endothelial dysfunction (a condition in which the endothelium or inner lining of blood vessels does not function normally) and heart failure¹.

Explanation of plant-

Terminalia Arjuna tree is about 60-80 ft in height, and is seen along, streams, rivers, and dry water bodies throughout the Indo-sub-Himalayan tracts of Madhya Pradesh, Delhi Uttar Pradesh, southern Bihar, Burma, and Deccan region. It is also found in the forests of Mauritius and Sri Lanka. It grows almost in all types of soils, but prefers humid, fertile loam and red lateritic soils. It can also grow in shade. It can tolerate half submergence for a few weeks. Terminalia Arjuna is propagated by seeds; Germination takes 50-70 days with 50-60% germination. It is a deciduous riparian tree and it can grow up to a height of about 20-27 m.²

MEDICINAL PARTS

The bark of Terminalia arjuna is the main medicinal part. It is well-known for cardioprotective action.

CHEMICAL COMPOSITION³

Terminalia Arjuna bark contains minerals like magnesium and calcium.

The following phytochemicals are found in the Terminalia Arjuna bark-

1. Phenolic Compounds – terminic acid and arjunolic acid.
2. Flavones
3. Glycosides: arjunetin and arjunosides
4. Tannis
5. Oligomeric Proanthocyanidins.

MEDICINAL PROPERTIES⁴

- Antiarrhythmic
- Cardiac Stimulant
- Antianginal
- Anti-osteoporotic
- Cardioprotective

- Anti-arthritic
- Anti-inflammatory
- Antacid
- Antiulcerogenic

DOSAGE AND ADMINISTRATION⁵

- Terminalia arjuna bark is used in different forms like bark juice, powder, decoction etc.
- Generally, stem bark, fruits and leaves of Terminalia Arjuna are used in the therapeutics.
- The therapeutic human dose of juice is 10-20 ml; powder 3-6 gm; decoction 50-100 ml, kshirpaka 10-12 ml.

Role in Cardiovascular system:

Terminalia Arjuna is one of the best cardio-protector agents. Since time immemorial, Terminalia Arjuna has been an herb of choice in dealing with various forms of heart related problems. It is highly effective in nurturing the heart and its muscles. It is very helpful in proper contraction and relaxation of the heart muscles. Improvement of cardiac muscle function and subsequent improved pumping activity of the heart seems to be the primary benefit of Terminalia. It is thought the saponin glycosides might be responsible for the inotropic effect of Terminalia, while the flavonoids and OPCs provide free radical antioxidant activity and vascular strengthening. The main action of these cardenolides is to increase the force of cardiac contraction by means of a rise in both intracellular sodium and calcium.

Local action: Terminalia Arjuna, is one of the best blood coagulants. It is wide used in stopping external hemorrhages as it has the power to coagulate blood and constrict the blood vessel locally to stop the blood let. It is applied on the wound to get the instant results. Terminalia Arjuna is also one of the most powerful herbal supplements that is known for its healing power⁶.

The Many Uses of Terminalia Arjuna⁷

Timber: Sapwood (peripheral wood in which living cells are active, and the sap still flows) is pinkish white; heartwood (core part which has no living cells, and in which the sap has stopped flowing) is dark brown, very hard, lustrous and coarse-textured. Timber is mainly used locally for carts, agricultural implements, water troughs, boats, tool handles etc.

Fuel: Wood makes excellent firewood and charcoal, with calorific value of 5030 kcal/Kg (sapwood) and 5128 kcal/kg (heartwood).

Tannin: The bark (22-24%) and fruit (7-20%) are sources of tanning and dyeing material.

Sericulture: Terminalia Arjuna leaves constitute one of the major feeds for the tropical tasar silkworm.

Medicine: The bark is highly valued as a cure for a range of ailments including heart-associated problems.

The Protecting Bark - Medicinal Importance of Terminalia Arjuna the dried stem bark of Terminalia Arjuna has been used widely in medicine as a cardi tonic.⁸

CONCLUSION

On the basis of above review, it is fairly seen that Terminalia Arjuna is very useful as a cardio protective agent, antioxidant and anti inflammatory. Its molecular actions in different cells of the cardiovascular system are also reported.

SOURCE OF SUPPORT: NIL

SOURCE OF INTEREST: NIL

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