

Terminalia arjuna: A Traditional Cardiac Tonic with Modern Therapeutic Potential

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The *Terminalia arjuna* tree, commonly referred to as the Arjuna tree, is a tall, majestic, evergreen to deciduous plant native to the Indian subcontinent. Found predominantly along riverbanks, dry streambeds, and in moist deciduous forests across India, Sri Lanka, and parts of Southeast Asia, this tree is easily identified by its thick, smooth, white to pinkish-gray bark and wide-spreading crown. In addition to its ecological importance, Arjuna holds significant value in the ancient healing traditions of Ayurveda.

In Ayurvedic medicine, Arjuna has been revered for over 2,500 years as a “Hridaya Roganashini”—the destroyer of heart diseases. Ancient texts like the *Charaka Samhita* and *Sushruta Samhita* mention its use in managing heart ailments, circulatory disorders, and other chronic conditions. With time, this traditional wisdom has gained scientific validation, particularly in the context

of cardiovascular health. Today, *Terminalia arjuna* is considered a botanical treasure that effectively bridges ancient healing practices and modern pharmacological science.

Botanical Profile

Belonging to the Combretaceae family, the Arjuna tree typically grows up to 60–80 feet tall. It thrives in moist, well-drained soils and is commonly found in the wild near water bodies. The tree's bark is its most valued component in both traditional and modern medicine. Although the leaves and fruits also possess therapeutic properties, they are used less frequently. Known by various regional names across India, "Arjuna" remains the most universally recognized, particularly in Ayurvedic texts.

Phytochemical Composition

The therapeutic potential of Arjuna lies in its rich phytochemical profile. The bark, in particular, is a



repository of biologically active compounds, including:

- 1. Tannins:** Polyphenolic compounds with strong astringent and antioxidant properties that aid in tissue repair, reduce inflammation, and protect against oxidative stress.
- 2. Flavonoids (Arjunone, Arjunolone):** These potent antioxidants combat free radicals, reduce oxidative stress, and exhibit anti-inflammatory and vasodilatory effects, thereby supporting vascular health.
- 3. Glycosides (Arjunetin, Arjunic Acid):** Known for their cardiogenic effects, these compounds strengthen the heart muscle, regulate blood pressure, and help reduce arterial lipid accumulation.
- 4. Saponins:** Plant-based steroids that lower LDL cholesterol, raise HDL cholesterol, and boost immune function, contributing to cardiovascular protection.
- 5. Essential Minerals (Calcium, Magnesium, Zinc):** These minerals support heart rhythm regulation, muscle contraction, nerve function, and enzymatic activity, further enhancing Arjuna's overall therapeutic efficacy.

Medicinal Uses

1. Cardiovascular Health

The primary medicinal application of Arjuna lies in its cardioprotective capabilities. It strengthens cardiac muscles, improves pumping efficiency, and reduces cardiac workload. Clinical and traditional evidence supports its use in managing conditions such as congestive heart failure, angina, and hypertension.

Arjuna acts as a natural beta-blocker, reducing heart rate and blood pressure without the side effects of conventional medications. Its mild diuretic properties also help reduce fluid retention and cardiac strain.

2. Antioxidant and Anti-inflammatory Effects

Rich in tannins and flavonoids, Arjuna combats oxidative stress and inflammation—both major contributors to chronic diseases. These properties make it beneficial not only for cardiovascular health but also for supporting immunity and mitigating degenerative conditions.

3. Wound Healing and Skin Care

Arjuna bark, when applied externally as a paste or decoction, accelerates wound healing. Its astringent and antimicrobial properties help stop bleeding, prevent infections, and promote tissue regeneration, making it useful for treating cuts, ulcers, and skin rashes.

4. Gastrointestinal Benefits

Traditionally used to treat diarrhea, dysentery, and inflammatory bowel conditions, Arjuna's tannins soothe the intestinal lining, reduce irritation, and help control fluid loss, offering natural gastrointestinal relief.

5. Lipid Regulation

Arjuna has been shown to lower LDL and triglyceride levels while boosting HDL cholesterol. This lipid-lowering effect, primarily due to its saponin and flavonoid content, helps prevent atherosclerosis and coronary artery disease.

6. Liver and Kidney Support

Arjuna supports liver detoxification, improves hepatic cell regeneration, and protects against damage from

toxins. Its diuretic properties also aid kidney function, urinary flow, and management of kidney stones and infections.

Forms of Use

Arjuna's therapeutic versatility is matched by the range of forms in which it is consumed:

- **Churna (Powder):** Traditionally consumed with water, honey, or milk to support heart health and digestion.
- **Decoction (Kwath/Kashayam):** Prepared by boiling the bark to extract active compounds, commonly used in managing heart and liver disorders.
- **Capsules/Tablets:** Offer standardized dosages and convenient administration, particularly for heart and cholesterol management.
- **Arjuna Tea/Juice:** Popular as a heart-friendly beverage that supports circulation and reduces fatigue.

Dosage and Safety Considerations

The recommended dosage varies based on the form and individual health conditions:

- **Powder:** 3–6 grams per day, divided into two doses.
- **Decoction:** 30–50 ml once or twice daily.
- **Capsules/Tablets:** As per manufacturer's instructions or physician's guidance.

Arjuna is generally well-tolerated when used under the supervision of a healthcare provider. However, due to its cardiotonic and blood pressure-lowering properties, it may interact with medications like beta-blockers,

diuretics, or calcium channel blockers, potentially leading to excessive reductions in heart rate or blood pressure. Monitoring is advised, particularly in patients already on cardiovascular drugs or those with hypotension.

Special caution should also be observed in pregnant or breastfeeding women and individuals scheduled for surgery. Self-medication is not recommended, and usage should always be guided by a qualified medical or Ayurvedic practitioner.

Conclusion

Terminalia arjuna stands as a powerful testament to the enduring relevance of traditional medicine in contemporary healthcare. With a rich history rooted in Ayurveda and increasing validation through modern research, Arjuna offers a natural, effective remedy for a wide range of health issues—chiefly cardiovascular diseases. Its complex phytochemical profile supports heart health, reduces inflammation, regulates lipids, and enhances overall well-being.

Available in various forms to suit modern lifestyles, Arjuna provides a holistic approach to managing chronic conditions and maintaining wellness. However, responsible use under expert supervision is essential to ensure safety and optimize benefits, especially when used alongside modern pharmaceuticals. As the global search for safe and effective plant-based medicines continues, *Terminalia arjuna* shines as a beacon of botanical efficacy with deep cultural and medicinal roots.

References

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