

Green Chiretta – A Wonder Medicine

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Andrographis genus belongs to the family Acantheace comprises of about 40 species and it is commonly known as the King of Bitters, is named for its intensely bitter tasting leaves. Only a few are popular for their use in folk medicine for assorted health concerns. Of these few, *A. paniculata* is the most important. It contains diverse compounds including labdane diterpenoid lactones, flavonoids and miscellaneous compounds. It has been shown to possess wide spectrum of pharmacological properties. This common weed in the tropics and subtropics grows well in most soil types in semi-shade. Its white flowers have purple streaks and can self-pollinate. It is an annual, branched, erect handsome herb running half to one meter in height. It is native to peninsular India and Srilanka and is also distributed in different regions of Southeast Asia, China, America, West Indies and Christmas Island. It is cultivated because of its well known medicinal value and it grows well in most soil types thus it is widely distributed. The aerial parts and roots of the plant have been widely used as traditional medicine in China, India, Thailand and other Southeast Asian countries to treat many maladies. It is known as King of Bitters, Green chiretta(English), *Mahatikta* (Sanskrit), *Kiryato* (Gujarati), *Mahatita* (Hindi), *Kalmegh* (Bengali), or *Fah Talai Jone* (Thai).



Medicinal properties of *A. paniculata*

The plant is claimed to possess immunological, antibacterial, antiinflammatory, antithrombotic and hepatoprotective properties. In Malaysia, the plant is used in folk medicines to treat diabetes and hypertension. The contents of diterpenoids like andrographolide, neoandrographolide and dehydroandrographolide are the chief criteria for monitoring the quality of *A. paniculata*. Andrographolide, though found in all plant parts, is most concentrated in the leaves. It has multiple pharmacological properties such as protozoacidal, antihepatotoxic, anti-HIV, anticancer, antitumor, hypoglycemic and hypotensive activities. Andrographolide is an interesting pharmacophore with anticancer and immunomodulatory activities and hence has the potential to be developed as an anticancer chemotherapeutic agent as well. The list of *A. paniculata* plant parts and their medicinal uses are given below.

Andrographis Paniculata plant parts and their medicinal uses

Part	Medicinal uses
Whole Plant	Snakebite and insect sting treatment, dyspepsia, influenza, dysentery, malaria and respiratory infections.

Leaf	Fever, colic pain, loss of appetite, irregular stools and diarrhea, common cold, cough, fever, hepatitis, tuberculosis, mouth ulcers, bronchitis gastro-intestinal disorder and sores.
Aerial part	Common cold, hypertension, diabetes, cancer, malaria and snakebite, urinary tract infection.
Root	Febrifuge, tonic, stomachic and anthelmintic.

It is an important constituent of at least 26 Ayurvedic formulas in Indian pharmacopoeia. In traditional Chinese medicine, it is seen as the cold-property herb used to rid the body of heat and fever and to dispel toxins from the body. In Ayurvedic medicinal system, tribals of Tamilnadu, India use this herb for a variety of ailments like dysmenorrhoea, leucorrhoea, pre-natal and post-natal care, complicated diseases such as malaria, jaundice, gonorrhoea and general ailments like wounds, cuts, boils and skin diseases. The different modes of usage of *A. paniculata* by the tribals are described in below.

A folk medicine in Tamil Nadu, India

Malaria	About 20 g of the whole plant is pounded, mixed in water, filtered and given internally. Alternatively, the plant is cut into small pieces and kept overnight in 100 mL of Water. About 40 mL of the cold infusion obtained is given internally, twice a day (Shevaroy Hills, Malayali).
Post-natal care	About 25 g of powdered herb is boiled in 400 mL of water, reduced to 50 mL. cooled filtered and given internally to arrest unusual thirst. This decoction is also given to alleviate burning sensation in the palm and foot of the subject (Shevaroy Hills, Malayali).
Dysmenorrhoea	About 10 g of leaf together with 3 black peppers is grounded well and given once a day for 7 d (Kolli Hills, Malayali).
Intestinal worm infestation	A total of 2 g each of root and stem along with 7 mustard are made into paste, mixed in mother's milk and given internally. Alternatively, paste made of 5 fresh leaves or juice extracted from 5 g of root is mixed in hot water and given internally (Kolli Hills, Malayali).
Eczema	Powdered herb is mixed in oil and applied on the lesions. About 2 g of powder is also given internally once a day for 40 d (Pachamalais, Malayali).
Leucoderma	A total of 2 g of powdered herb is given, once a day for 40 d (Panchamalais, Malayali).
Jaundice	Water extract of 10 g of the herb together with equal quantities of stem bark extracts of <i>Azadirachta indica</i> and <i>Holarrhena antidysenterica</i> , which is heat treated by dropping a hot sante, is given 3 times a day for 6 d, in dose of 30 mL (KolliHills, Malayali).
Abscess	About 10 g of leaf paste is given internally. Some paste is also applied externally (Shevaroy Hills, Malayali).
Gonorrhoea	Powdered herb mixed in oil is applied externally. Alternatively, plant juice is applied on the wounds. In addition 2 g of the powder is also given internally (Shevaroy Hills, Malayali).
Infected wounds	The herb is grounded into paste together with turmeric and applied externally. Alternatively, the leaf paste is smeared on the affected parts and kept for two days (Kolli Hills, Malayali). Juice extracted from 100 g of herb is given internally (Shevaroy Hills, Malayali).

Pharmacological effects of *A. paniculata*

- Abortifacient (can abort pregnancy; although Ayurvedic tradition allows it to be taken for short duration during pregnancy thus all women are advised to avoid its use during pregnancy as a precaution. In almost every other respect *Andrographis* has an extremely low toxicity.
- Analgesic (pain killer) reduces swelling and cuts down exudation from capillaries; anti-inflammatory action probably mediated, in part, by adrenal function)
- Antibacterial (fights bacterial activity; although *Andrographis* appears to have weak direct antibacterial action, it has remarkably beneficial effect in reducing diarrhea and symptoms arising from bacterial infections.)
- Antiperiodic (counteracts periodic/intermittent diseases, such as malaria)
- Antipyretic (fever reducer - both in humans and animals, caused by multiple infections or by toxins)
- Antithrombotic (blood clot preventative)
- Antiviral (inhibits viral activity)
- Cancerolytic (fights, even kills, cancer cells)
- Cardioprotective (protects heart muscles)
- Choleric (alters the properties and flow of bile)
- Depurative (cleans and purifies the system, particularly the blood)
- Digestive (promotes digestion)
- Expectorant (promotes mucus discharge from the respiratory system)
- Hepatoprotective (protects the liver and gall bladder)
- Hypoglycemic (blood sugar reducer)
- Immune Enhancement (increases white cell phagocytosis, inhibits HIV-1 replication, and improves CD4+ and T lymphocyte counts)
- Laxative (aids bowel elimination)
- Sedative (relaxing herb, though not with the same effect as the accepted herbal sedatives, valerian root, hops, skullcap, etc.)
- Thrombolytic (blood clot buster)
- Vermicidal (kills intestinal worms)

References

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