



A Review of Various Therapeutic Activity of Emblica Officinalice in Human Body

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ABSTRACT

The avoidance of effectiveness and safety of Emblica officinalis (Amla) a most important and highly studied plant in the traditional Indian Ayurvedic system of medicine are presented. The success parameters evaluated were the vascular function blood hematology, oxidative and inflammatory biomarkers. glucose and lipid profiles Urinalysis and liver hepatotoxicity. Qualified healthy adult subjects (n = 15) were randomized to receive either amla or placebo (500 mg per day) during an high improvement in 18-week study. The amla consumption shows high improvements in the primary efficacy parameter of blood fluidity. There also improvements in the Secondary endpoint including lowering of we vonwille brand factors(vwf). reduced 8-hydroxy-2'-deoxuguanosine as well do thrombin molecular marker of oxidative stress along with a high improvement in HDL-cholesterol and lowering the LDL-cholesterol levels. No considerable change were observed in liver hepatotoxicity, hematology, & and urinalysis after intake of amla compared to baseline. In addition no adverse events, changes safely parameters or tolerance issues were observed after intake of amla. In conclusion amla supplementation showed acceptable taste, improved endothelial functions and reduce oxidative stress.

->**Keywords:** → Emblica officinalis (Amla), therapeutic activity.

INTRODUCTION:

Emblica officinalis (EO)

1. SYNONYM -> Phyllanthus emblica or Indian gooseberry
2. it is commonly known as amla, nelli and amalaki
3. family - Euphorbiaceae. –
4. The species is native to india and also grows in tropical and subtropical regions including Pakistan ,Uzbekistan, srilanka, south east asia, china, malayasia. -it is a deciduous tree. Hight - 8-15 m tall
alternate sessile leaves & greenish to creamy – yellow, unisexual, actinomorphic trimerous flowers.
5. Varieties of EO :
There are 3 varieties of EO,
 1. Francis Amla
 2. Chaikaya Amla
 3. Banarasi Amala.
 - The plant is known to possess anti-viral anti-bacterial, anticancer, anti allergic & anti mutagenic properties.
 - fruit are reported to exhibit anti inflammatory, analgesic, antidiarrhoeal anti pyrelic properties.
 - If also reported to have antioxidant quateroprotective & memory enhancing properties.
 - it used in treatment of of thalamic disorder, liver diseases, lowering cholesterol level.
 - EO :also shows polent antibacterial activity

- The EO fruit has traditionally been considered as a cardioactiv medication and remarkable cardiovascular effects in pharmacological literature.
- Active ingredients of EO : –

The active ingredients of EO which are protective against microbes include following

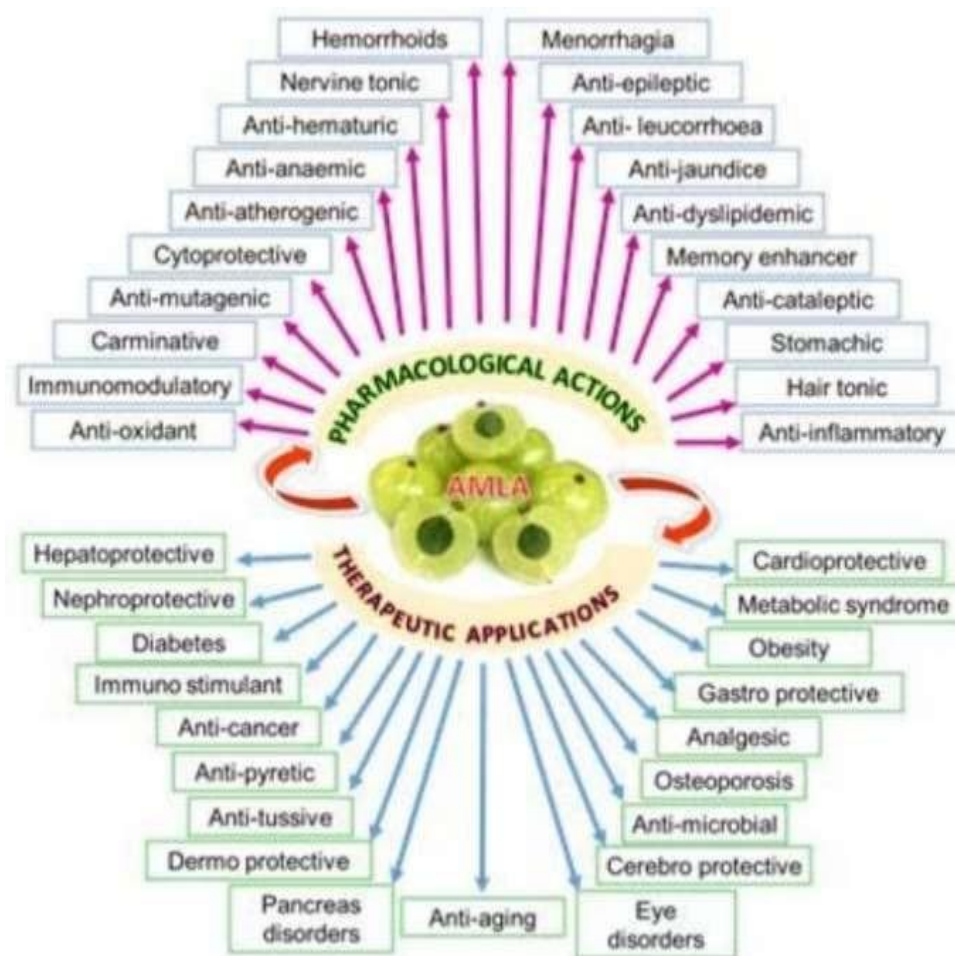
1. Flavonoids (Quercetin).
2. Gaillic Acid T
3. Ascorbic Acid
4. Alkaloida (Phyllantine Phylantidine)
5. Hydrolysable Tanning (Emblicanin A&B)
6. B-Carotene
7. High Vitamin C.

Gooseberry - Nutritional Facts per 100 g

Nutrients mg Percentage

Folates	6 mcg	1.5%
Niacin	0.300 mg	2%
Pantothenic acid	0.286 mg	6%
Pyridoxine	0.080 mg	6%
Riboflavin	0.030 mg	2%
Thiamin	0.040 mg	3%
Vitamin A	290 IU	10%
Vitamin C	27.7 mg	46%
Sodium	1 mg	0%
Potassium	198 mg	4%
Calcium	25 mg	2.5%
Copper	0.070 mg	8%
Iron	0.31 mg	4%
Magnesium	10 mg	2.5%
Manganese	0.144 mg	6%
Phosphorus	27 mg	4%
Zinc	0.12 mg	1%



>Therapeutic Activity of Emblica officinalice:**Healing options:**

- Amla is used as a cathartic to relieve contraction in piles.
- Amlais useful in hemorrhage, diarrhoea and has therapeutic value in treating diabetes.
- Amla protects cells against free radical damage and provides antioxidant protection.
- Amla is used to treat skin disorders, respiratory infections, and premature aging.

-> Anti-cancer Activity :

- Amla shows the Anti-cancer activity in human body.
- The polyphenols extract derived from amla improves the protection against cancer.
- Polyphenols inhibit oxidative stress, produce proinflammatory chemicals, prevent DNA damage and increase apoptosis through various mechanisms.
- Amla exhibits its anticancer activities through inhibition of AP-1 and targets transcription of viral oncogenes responsible for development progression of cervical cancer thus indicating it's possible utility for treatment of HRV-induced cervical cancers.

→ Immunity Booster :

- Amla is the richest known natural source of vitamin c. which is known to have excellent immunity boosting and antioxidant properties.
- Consuming vitamin c regularly is associated with better performance of macrophages and other cells of the immune system.
- Multiple studies have shown significant increase in white blood cells counts, and other measure strengthened immunity in rodents given amla.
- one reason for amla's reputation as a general energy promoting,disease-preventing tonic may be it's effect on the immune system.

→ **Anti - ulcers charaders :**

- The antiulcer activity of SMEE, GA,EA, or GA + EA Was evaluated by gastric lesion models induced by absolute ethanol and indomethacin. Following this, it is capable of stimulating mucus production. antisecretory capacity, and the influence of -SH groups and Ne is the effect of SMEE.
- The amla fruit is often used as a medicinal ingredient in the ayurvedic and siddha systems medicine. It possesses antioxidant and anti-inflammatory properties, which might aid in dealing with ulcers.
- Intake of amla in the form of fruit or juice might help you manage gastric ulcers.
- A herbomineral Ayurvedic formulation called pepticare.péptic has antiulcer attitude. due to its antioxidant properties .Eo extract was tested for the treatment of ulcer. Eo has powerful curative and therapeutic impacts on the ulcer.

-> **Respiratory disorder :**

- Amla treatment exhibited a cytoprotective effect against stress and concomitantly increased oxygen consumption.
- Amla is effective in the treatment of respiratory disorder. It is specially valuable in tuberculosis of lungs, asthma and bronchitis.

->**Impact on the liver :**

- Amla is the very beneficial for the liver.
- Amla juice is also rich in antioxidants and possesses powerful anti-inflammatory properties both of which could be beneficial for liver health as well.
- Some animal studies have found that amla juice should Support liver health, which may be due to it's antioxidant content and anti-inflammatory properties.
- This fruit used in Ayurveda for the treatme- nt of the liver injury caused by hepatotoxic agent thus can prevent damage to the liver. It has been tested for hepatic rate damage due to ethanol.

-> **Anti-Diabetic Activity :**

- Emblica officinalis is an important medicinal plant in Ayurveda and unani systems of medicine.
- Amla fruit are well known for their pharmacological activities as well as anti-diabetic properties.
- Amla stimulate the isolated group of cells that secrete the hormone insulin. Thus it reduces blood sugar in diabetic patient.
- Aldose reductase engages in the growth of complications of secondary diabetes comprising cataracts. EO as verified inhibitor of Aldose reductase.

→ **Dermoprotective Activity :**

- Amla extract provide protection for human dermal fibroblast against oxidative stress due potent antioxidant properties.
- So, it is supposed to be useful for natural skin care.
- EO useful in protection of skin from the damagging effects of free radicals, non-radicals and oxidative stress.
- So,it is suitable for use in anti-aging sunscreen and general purpose skin care products.

→ **Eye disorder :**

- Amla berries are rich in vitamin A. which is Key to improving eye health. vitamin A not only improves vision, but it also may lower the risk of age-related macular degeneration.
- Amla helps to improve and preserve the eyesight. It is rich in vitamin c. thus helps you attain a better vision. This vitamin rich berry also strength the eye muscles.
- Another major benefit of amla is that it prevent eye become cloudy (cataract).

→ **Analgesic, Antipyretic :**

- In various studies of EO examined that the extract of Eo have strong antipyretic and analgesic action. There has been a substantial decrease in brewer's yeast hyperthermia in rate with just a single dose of ethanol extract and aqueous extract.

-> Aging :

- Amla is known for anti aging properties by as it has anti oxidant properties which prevents skin from damage of free radicals, thus preventing aging.
- This drink has loads of antioxidants in it that can help make your skin look better and beat ageing cells. vitamin c is found in amla and this aids in glowing skin.
- Regularly drinking amla juice will prevent premature aging, fine lines, dark spots and wrinkles.

→ osteoporosis :

- The bone loss caused due to numerous pathologies and in rheumatoid arthritis various osteoclasts are involved.
- Amla is rich in calcium which is vital to building and maintaining strong bones. The anti-inflammatory properties of amla can help reduce inflammation, and relieve pain and swelling in the joints associated with arthritis.
- Amla is also used in the treatment of bone disease like osteoporosis.

→ Hypertension :

- Amla also called Indian gooseberry is extremely powerful when it comes to high blood pressure. Mixing even half teaspoon of amla powder in water can help you control blood pressure. You can also mix it with a teaspoon of raw unpasteurised honey. Honey is also beneficial for your blood vessels and blood circulation.
- It has vitamin C which helps reduce blood cholesterol levels and widens blood vessels. If you have amla juice every morning on an empty stomach it can control hypertension and other ailments too.

-> Antimicrobial Activity :

- Amla extracts exhibited potent antibacterial and antifungal activity against all the selected bacterial and fungal species. The extracts exhibited the growth inhibitory activity in a dose-dependent manner.
- The 5% aqueous extract of amla has been reported to exhibit the highest zone of inhibition, indicating potent antibacterial activity. The potent antibacterial activity of Amla against several microorganisms can be credited to tannins present in its fruits.
- The ethanolic extract of amla exhibited maximum antimicrobial potential against *E.coli* (16.7 ± 0.34 mm) and least towards *Serratia* (15.1 ± 0.16 mm) while the aqueous extracts exhibited maximum activity against *Alcaligenes* (14.1 ± 0.18 mm) and least towards *Serratia* (9.7 ± 0.15 mm).

→ Natural cure for Anemia :

- Amla is a superfood for it is extremely rich in nutrients like vitamin C, Iron and calcium. Due to the abundance of iron present in it, amla can help cure anaemia.
- Amla increases your hemoglobin level, red-blood cells count and thus purifies blood. Amla is also rich in anti-oxidants, which help fight free radicals that are responsible for early ageing. Amla aids digestion and cures acidity.
- As a dietary supplement that enhances iron absorption and uptake, amla fruit can be explored further as a low-cost intervention in the management of iron deficiency anaemia.

-> Neurological Protection :

- *Emblica officinalis* is commonly known as amla. It has been used in traditional systems of medicine for the treatment of diseases of the nervous system, epilepsy, for enhancement of memory and intelligence, headache.
- Amla works as a brain tonic. Its cooling property balances emotions, improves memory and cognitive abilities.
- The phytonutrients and antioxidants in amla can benefit memory by fighting against free radicals that can attack and damage brain cells. Amla's high concentration of vitamin C helps your body produce norepinephrine, a neurotransmitter believed to improve brain function in people with dementia.

→ Antioxidant :

- Amla is rich in antioxidants such as gallic acid, ascorbic acid and phenolic compounds and thus helps the body's immune system and digestion.
- Antioxidant activity can be defined as a limitation or inhibition of nutrient oxidation by restraining oxidative chain reactions.

- Amla often functions as a potent antioxidant due to the high level of ascorbic acid. ranging from 1.100 to 1.700 mg / 100g of fruit) in the fruit.
- Amla berries are the world's highest antioxidant rich food and highest orac value product.

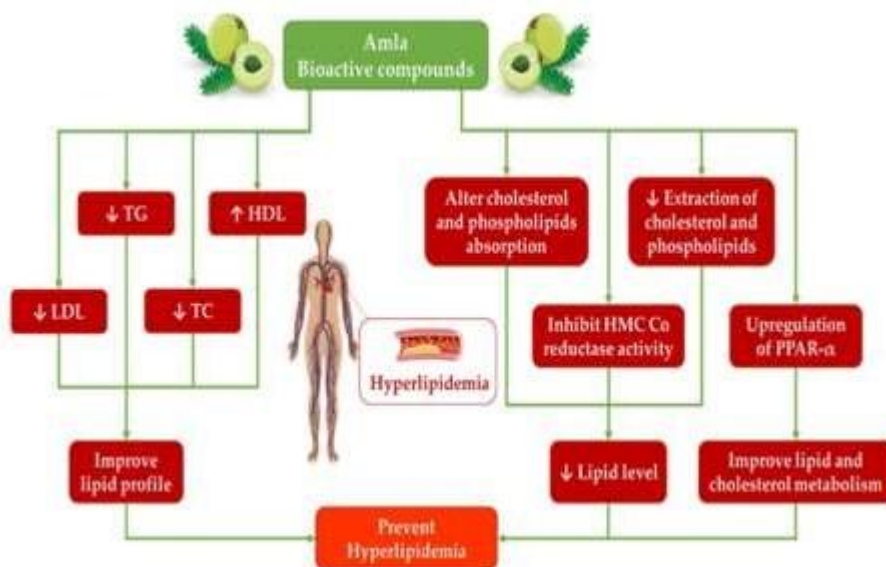
→ **Anti-Inflammatory Activity :**

- Indian gooseberry, also known as Amla is one of the oldest edible fruits known in india.
- It has also traditionally been used to treat inflammation and as an analgesic to treat wounds.
- oral administration of the amla fruit extract (50 mg/kg body weight) significantly decreased the concentration of pro-inflammatory cytokines, TNF- α and IL-6 in serum. These results suggest that amla fruit extract may be an effective anticoagulant and anti-inflammatory agent.

-> **Enhance Food Absorption :**

- Amla act as a better digested in the digestion process. The fiber in amla regulate bowel movements and may help to relieve symptoms From conditions like irritable bowel syndrome. High levels of vitamine c in Amla berries helps your body absorb other nutrients, so they may be helpful if you take iron and other mineral supplements.
- Amla helps improve digestion and relieve acidity. It is also effective for diabetics.
- Amla is known to trigger your metabolism. Metabolism is the process by which your body converts what you eat and drink into energy go faster the metabolism. the faster you use up all your calories.

-> **Anti Hyperlipidemic :**



- In a clinical study, lipid lowering action of amal has been reported in patients aged 35-55 years when raw amla was administered for 28 days. In our study Amla showed a reduction of TC, LDL and IG and increase in HDL.
- Flavonoids present in amla significantly lowered lipid levels in serum and tissues by its inhibitory action on HMG co-A reductase pathway. Also, standardized extract of amla fruit increases cardiac glycogen levels and decreases LDL level.

-> **Balance stomach Acid :**

- Amla helps to beat symptoms of acidity chew, dried amla or drink a teaspoon of freshly prepared amla juice on an empty stomach to fight acidity.
- Eating amla on an empty stomach with a history of hyperacidity can irritate the lining of the stomach and can trigger acidity.
- Amla is basically an alkaline food, so it helps to balance the stomach acid levels and make the gut alkaline. An alkaline gut essential for overall health and Vitality.

-> Dental Implications :

- In Ayurveda, the well-known Rasayana herb, amla is considered a general builder of oral health. Amla works well as a mouth rinse as a decoction. one to two grams per day can be taken orally in capsular form for long term benefit to the teeth and gums.
- Amla is a rich source of vitamin C. vitamin C prevent bleeding of gums. It helps the lining of gums to stay healthy, despite the bacteria that inhabit the mouth.
- Amla helps keeping gum infections like gingivitis and periodontitis away. Excess consumption of Amla could lower the pH in the mouth and the acidic nature could erode your teeth over a period of time causing teeth sensitivity. Consuming Amla in moderation is the key to keeping your gums healthy.

-> Nourishes the Brain and mental functioning :

- The phytonutrients and antioxidants in amla can benefit memory by fighting against free radicals that can attack and damage brain cells. Amla's high concentration of vitamin C helps your body produce norepinephrine, a neurotransmitter believed to improve brain function in people with dementia.
- Amla in the powdered or decoction form shows improved memory, reasoning, problem solving, and other cognitive abilities. It also helps treating epilepsy, memory loss, stress depression, Alzheimer's, anxiety, and other neurodegenerative disorders.

-> Diarrhea :

- Amla helps to control diarrhea due to its Kashaya (astringent) and site (cold) properties which help reduce contraction of the smooth muscles of the gastrointestinal tract.

-> Help The Urinary System :

- Amla supports a natural diuretic action but does not force water from the body like diuretic pills. In other words, it helps eliminate waste from the body but does not over stimulate the urinary system.
- Amla contains large amount of vitamin c which is very effective in treating bladder infection. Take 60 grams of amla juice and mix it with 30 grams of honey. Mix it well and take this dose three times a day.
- The amla's vitamin C can help prevent urinary tract infection by inhibiting the growth of UTI - causing bacteria in your bladder.

-> Act As body coolant :

- According to ayurveda, amla has a cooling (shitavirya) effect on our body which helps in regulating the body temperature. It also acts as an effective remedy for fever as it helps boost immunity.
- Also Known as amalaki or Indian gooseberry it's a great choice for balancing any heat that comes your way.

→ Promotes Healthier Hair :

- Amla is considered a superfood for hair with a zillion nutrients like vitamins, minerals, amino acid and phytonutrients present in this fruit. It is a hair fall control remedy and natural conditioner. Amla is also very high in antioxidants which help in maintaining the health of the scalp.
- when applied topically "the vitamins and minerals along with the phytonutrients present in amla increases the blood circulation in the scalp, which stimulates the hair growth.". Blood circulation ensures that the scalp gets all the essential nutrients and oxygen to be healthy.

→ Good for the skin :

- Amla is loaded with antioxidants and vitamin C both of which help in brightening the skin and lightening the complexion. The best way to obtain amla benefits for the skin is to consume the juice daily or apply it as a face pack.
- High amount of collagen contents in your skin help in skin firmness and make your skin appear soft. Regular consumption of amla juice boosts vitamin C levels and helps increase the production of collagen level in your skin. This will make your skin look soft and youthful.

-> Conclusion:

Plants have provided man kind with many medicinally useful compounds from ancient time and are considered as the oldest source of pharmacologically active compounds. Many valuable drugs have found their origin from the traditional medicinal practices . Bacterial resistance to antibiotics due to resistant strains is increasingly becoming a global concern to public health .

Although, it is essential to undertake studies to analyse biological activities of medicinal plants against various pathogenic organisms and to explore new antimicrobial compounds. *E. officinalis* has found numerous applications in treating various diseases affecting human beings and it is also considered to possess potent antimicrobial activities against pathogens . In this study, extracts of *E. officinalis* were screened against selected bacterial and fungal strains affecting the oral health. The antibacterial activity in aqueous extracts of fruits, seed, stem, leaves and root of *E. officinalis*, except the root extract all other parts showed antimicrobial effect against all the eight strains of bacteria. The study also observed the superiority of extracts of *E. officinalis* against major antibacterial antibiotics. The bactericidal activity of *E. officinalis* could be attributed to the phytochemical components present in it namely flavonoids (quercetin), ascorbic acid, gallic acid, alkaloids (phyllantine, phyllantidine) and hydrolysable tannins (emblicanin A and B).

Although, the other systems of medicine are effective they come with a number of undesired effects that often lead to serious complications. Being natural, herbal medicine alleviates all these problems. *Emblica officinalis* (Amla) has an important position in Ayurveda- an Indian indigenous system of medicine. Amla due to its strong antioxidant and biological properties prevent innumerable health disorders as it contains essential nutrients and highest amount of vitamin C. It can be used as a possible food additive or in nutraceuticals and biopharmaceutical industries. Several researchers revealed that various extracts and herbal formulations of amla showed potential therapeutic benefits against various diseases and the results are similar to standard drugs. In this review, we tried to make a summary of the pharmacological action and therapeutic application of amla and tried to establish their basic mechanisms.

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