



Allium sativum: A promising therapeutic agent

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Allium sativum L. (garlic) is a perennial herb cultivated throughout India and is quite common throughout the country. The oral administration of the garlic extract significantly decrease serum glucose, total cholesterol, triglycerides, urea, uric acid, creatinine, AST and ALT levels. Garlic seems to have anti-microbial and immunostimulating properties, has been shown to enhance fibrinolytic activity, and exert well favourable effects on platelet aggregation and adhesion. Standardised preparations guarantee exact dosing and minimize the problem that arose in context of strong odour of raw garlic. Thus, a traditional folk remedy has established its usefulness for many patients with less severe forms of cardiovascular disease as a medical drug with very few side effects. The concept of using *Allium sativum* has been widely used because of the well proven analgesic and antinociceptive properties that has been validated by numerous research studies conducted in the past.

The constituents of garlic also possess antidiabetic, antibiotic, hypocholesterolaemic, fibrinolytic and various other biological actions that have been playing a well modulatory role. In addition to free sulfoxides in alliums, there are nonvolatile sulfur-containing peptides and proteins which possess various activities and thus make these vegetables as an important source of therapeutic agents.

Constituents:

Allium sativum has been shown to contain sulphur compounds (alliin, alliein), lipids, anthocyanins, quercetin, kaempferol, glycosides, scordinins, tellurium compounds. It also contain the amino acids, volatile oil, mucilage, germanium, glucokinins, vitamins, selenium, fructo-oligosaccharides.

Actions:

Allium sativum has shown to be an effective stimulant, antispasmodic, carminative, laxative, nutritive, expectorant, bronchodilator, decongestant, alterative, immunostimulant, antimicrobial, anthelmintic, hypocholesterolaemic, hypotensive, antitumour, antioxidant, juvenative, aphrodisiac, brain tonic, circulatory stimulant, digestive, antiplatelet, vasodilator, diaphoretic, hypoglycaemic, antiseptic, rubefacient. The widespread use of *Allium sativum* in the treatment of various disorders cannot be ignored.

Indications:

Allium sativum has showed protective effects in number of morbid conditions including fevers, colds, flu, catarrh, coughs, chest infections, TB, asthma, sinusitis, hay fever, rhinitis, pharyngitis, GI tract infections, dysbiosis, various microbial actions including candida, parasites & worms, high cholesterol, hypertension,

atherosclerosis, bone fractures, low immunity, thrush, type 2 diabetes, cystitis, poor circulation, various types of viral infections , vaginal infections, low libido, impotence, low sperm count, toxicity, effects of pollution & nicotine, arthritis, sciatica, poor memory & vision, indigestion, low appetite, constipation, haemorrhoids, abscesses, boils, warts, *Tinea* infections, scabies, oedema due to cardiac disorders. The role of *Allium sativum* in the treatment of various modalities thus proves the beneficial role of the herbal drugs that has been emerging well for the therapeutic wording.

Ayurvedic potential of *A.sativum*:

The potential of *Allium sativum* in the number of ayurvedic conditions cannot be ignored. The potential can be described as given below:

Anulomana –redirectstheflowof *apanavata* downwards

Brmhana –nourishingtonic,anabolic

Dipana –enkindles *agni*

Hridaya –hearttonic

Jwaraghna –reducesfevers

Kasasvasahara –relievescoughs&breathingproblems

Krimighna –eliminatesworms¶sites

Medhya –braintonic,nervine

Rasayana –rejuvenative

Sara –easespassageofstool

Sulaprasamana –relievespain&spasminthegut

Vajikarana –aphrodisiac

Visahara – clears toxicity

Thus the uses of *Allium sativum* in the treatment of number of disorders even in Ayurveda cannot be ignored and thus play a vital role which necessitates the further intricate role in the benefit of mankind.

Introduction:

Garlic is considered to be an excellent remedy for enhancing immunity and combatting infections, having antibacterial, antiviral, anti-parasitic and antifungal properties. It exerts its all the potential effects throughout the digestive, respiratory and urinary systems. It is used for remedying coughs and colds, stomach and bowel infections, as well as cystitis along with it, it also acts as a decongestant, good for catarrh and hay fever, and an expectorant, useful when treating coughs and asthma. Garlic is a wonderful medicine for the heart and circulation, attenuation of the blood pressure and harmful cholesterol levels and reducing the tendency to blood clotting, thereby helping to reduce heart attacks and strokes. Its antioxidant properties lend garlic vascular support, neuro-protective and hepato-protective actions and help the body withstand the ageing process. It can be also known by the name of 'elixir of life'. It also increase the irritability/impatience of *pitta*. It cause clearance of *ama* and *kapha* from *rakta*, *rasa* and *medas dhatus* by encouraging sweating causars *ama* and *kapha* from *rakta*, *rasa* and *medas dhatus* by encouraging sweating. Cooking is known to

denature proteins and may inactivate the enzyme (allinase) that is necessary for converting alliin into allicin, the major bio-active constituent in garlic.

Trace form history about the uses of *A.sativum*:

The humble garlic bulb, which has a very strong and pungent odour, is a wonderful medicine and has been valued as such for thousands of years, probably by more cultures than any other plant. It originated in central Asia, but its use is not limited to only there and has been widespreadly used in found in Europe, North Africa, Asia, and North America. The ancient Egyptians around 1500 BC used it for its energy-giving properties and the Greeks and Romans, including Dioscorides and Galen, considered it a panacea and elixir of youth. In ancient times, the use of garlic has been predominantly used for the achieving the therapeutic effect in various cardiovascular disorders and also been used to combat the various negative and evil bodies according to mythology.

Traditionally garlic has been used as a remedy for a number of disorders including bronchitis, pneumonia, digestive problems, intestinal infections, tuberculosis, dysentery, earaches and infections, abnormal growths and circulatory problems. Traces from the history also reveals that the use of breads of garlic hunged from the doors and windows to keep the evil spirits out of the body and house.

Modern use of Garlic:

Garlic has been reported to lower total cholesterol, LDL cholesterol and triglycerides, and increases HDL cholesterol in laboratory studies and human trials . Garlic has been reported in laboratory studies to inhibit platelet aggregation and influence blood viscosity through its fibrinolytics. Several studies used garlic oil to treat hypercholesterolemia, which is processed by heating to extreme temperatures. Changes can occur in the active constituents when exposed to cooking or other processing which can render the garlic product virtually ineffective.

Powdered garlic supplements can lose bioactivity due to organosulfur compounds and not be effective.

Garlic extracts accentuate the increase in level of superoxide dismutase, catalase, glutathione peroxidase, and glutathione levels, and inhibiting lipid peroxidation and inflammatory prostaglandins. The precipitation of AGE in extracting out a wide array of cardiovascular benefits by reducing cholesterol synthesis, inhibition of cholesterol, LDL oxidation, and platelet aggregation, inhibition of arterial plaque formation, decreasing homocysteine, lowering blood pressure, and increasing microcirculation. It is also important in diabetes related complications and may help prevent cognitive decline by protecting neurons from Abeta neurotoxicity and apoptosis, and improve learning and memory retention .

It is suggested that the hepato-protective effects of garlic are due primarily to the organosulphur compounds. Diallyl sulfide compounds extracted from garlic were reported useful in combination with doxorubicin to protect the liver from oxidative injuries due to the chemotherapy drug and to improve the clinical efficacy of doxorubicin . Garlic may also help in the detoxification of heavy metals from the body, including lead .

The uses of garlic in the attenuation of various morbidities and mortalities cannot be ignored as it is playing a key beneficial role in the treatment. Thus garlic is playing a good agent in the treatment of many disorders.

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