

Review of activity of Pippali (Piper longum Linn) in Pranavaha strotas (Respiratory system)

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Abstract -

Pippali (Piper longum Linn) is well known medicine for the respiratory system. Its activity is mainly seen on Pranavaha strotas disorders viz-Kas, Shwasa, Hikka. Decoction of fruits is useful in bronchitis, cough & cold. Also this is useful in Rajyakshma. It is best Rasayan dravya for Pranavaha strotas. The review discusses about activity of Pippali (Piper longum Linn) on Pranavaha strotas.

Key words - Pranavaha strotas, Pippali, Respiratory disorders.

Introduction -

Pippali known as Indian long Pepper is a powerful stimulant for (respiratory system) Pranavaha Strotas. Pippali is commonly used to treat a wide range of disorders of Pranavaha Strotas from Kasa (cough), Shwasa (Asthma), Rajyakshma. It is also used to treat disorders regarding congestion to digestive issues. It is great herb due to its powerfu lung rejuvenation properties and is good to consume in spring season.

Spring season is well known for allergic irritations, congestion colds & cough. According to Ayurveda this season is the main time of year for

Kapha Dosha (Kapha Prakop). Hence adding Pippali to spring time seasonal routine will be a great addition to stay away from common issues related to Kapha during this season. It is a well established fact that Pippali is one of the most important drugs in the treatment of Tamak shwasa (Bronchial asthma)

Main objective of the review is to understand the activity of Pippali (Piper longum Linn) on Pranavaha strotas (respiratory system).

Pippali -

Latin Name - Piper longum Linn

Ras - Katu (Pungent) Veerya - Anushna, Vipak - Madhur (Sweet)
Guna - Laghu, snigdha tikshna.
Dosha - Pacifies Kapha & Vat.

*"Pippali Dipani Vrushya Swadupaka
Rasayani Anushna katuka tikta
vatshleshmahari laghu"*

Plant is a slender aromatic climber with perennial woody roots. Piper longum is a native of North East India.1) It is found in hotter parts of India from Central Himalayas to Assam, Lower hills of west Bengal, and evergreen forests of western ghats from Konkan2) to Travancore. Globally it is distributed in Indo Malesian region & Srilanka In Ayurvedic literature Rajanighantu it is mentioned there are four types of Pippali viz Pippalli, Vanapippali, Saimhali and Gajapippali (Sivaraj & Balachandran 1994). Sharma has equated first three with Piper longum, Piper sylvaticom Roxb. and P. retrofractum Vahl, P. Sylvaticum is a Himalayan species. But there is no distinction between three and Piper longum is accepted for all Gajapippali4) is considered as a different drug but its identity is highly controversial. Some physicians in Kerala equate this with a different drug chavya.

Effects on Pranavaha Strotas (Respiratory System)

Pipalli is useful in various disorders of Pranavaha Srotas. It is main content of sitopaladi churna which is useful in Kasa, Shwas, Rajyakshma. It is main content of Lavangadi churna & Talisadi churna. Chakradatta has mentioned uses of Pippali in various disorders in following Kalpas (Preparations)

It is main content of Sitopaladi Churna useful in Shwas, Kasa, Parshwashool.

*Sitopalagudaksiri Pippali
bahulatwacha.....Chakradatta
Rajyakshama chikitsa (16-18)*

Pippal Ghrita is useful in Kasa & Rajyakshma. Kasa decreases due to this. Agnivardhan also takes place.

*"Pippaligudsamsiddham
Chhagkshirayutam Ghrutam
Etadagnivridhyartham Sarpishcha
Kshayakasinam" (Chakradatta
Rajyakshama chikitsa -64)*

Brihat Panchmul Kwath & Pippali Churna if taken together it is useful in Vataj Kasa.

*"Panchamulikruta kwatha pippalichurna
sanyuta Rasannamashnato nityam
vatkasamudsyati" (Chakradatta
Rajyakshama chikitsa - 4)*

It is content of Drakshadi Churna. Amalaki, Pippalli, Manuka, Miri all these powders if consumed with Ghee & Honey it helps to decrease Pittaj Kasa.

"Drakshamlakakharjuram pippali
marichanvitam Pittakasapham
hyetadlihyanmakshisarpisham"
(Chakradatta kas chikitsa – 13)

5) Pippali churna consumed with sugar helps in decreasing Hikka.

Hikkaswasastrayo yoga –

"Madhukam madhusanyuktam Pippali
sharkaranvita
Nagaramgudasanyuktam
hikkaghanam navantrayam" -
(Chakradatta Hikka / Shwash
chikitsa/4)

Its effects on Respiratory disorders is seen. Decoction of immature fruits is used in chronic bronchitis, cough. Clinical studies have shown that Pippali is very effective in treating bronchial asthma in children. Studies conducted on children have shown that long term use of fruits decreased severity of bronchial asthma attacks.

Effect on respiratory system:

Isolated piperine showed a central stimulant action in frogs, mice, rats and dogs along with increased hypnotic response in mice. It antagonized respiratory depression induced by morphine or pentobarbitone in anesthetized dogs. A petroleum ether extract of the fruits antagonized morphine-induced respiratory depression in mice. A comparative study conducted with piperine and nalorphine, for effects

against orphine-induced respiratory depression and analgesia, revealed that both reversed morphine-induced respiratory depression but, unlike nalorphine, piperine did not antagonize morphine induced analgesia in rats. Petroleum ether extract of P. longum produced respiratory stimulation in smaller dose but higher dose cause convulsion in laboratory animals.

This may be due to presence of some medullary stimulant factors in the extract . The crude extract of P. longum as well as piplartine, one of its alkaloids, suppressed the ciliary movements of the oesophagus of the frog, which may be due to the suppression of cough reflex".

Antiasthmatic activity:

An extract of the fruits in milk reduced passive cutaneous anaphylaxis in rats and protected guinea pigs against antigen-induced bronchospasm.

Anti-cancer activity :

Piper Longum reported to exhibit significant anti- tubercular activity. The effect of piperine on the inhibition of lung metastasis induced B16F-10 melanoma cells was studied in C57BL/6 mice. Simultaneous administration compound with tumor induction produced significant

reduction (95.2%) tumor nodule formation along with reduced lung collagen hydroxyproline, uronic acid hexosamine content the piperine-treated animals. Piperine, an alkaloid present in plants such as P. nigrum P. longum showed significant anti-metastasis activity". Piperine has chemopreventive effects when administered orally on **lung cancer** bearing animals". Piperlongumine showed an inhibitory effect on α MSH induced tyrosinase synthesis". It was found that oral administration ethanolic extract protected cell surface and maintained the structural integrity of the cell membranes during DMBA induced hamster buccal pouch carcinogenesis. The two active principles, ethyl 3', 4' 5' trimethoxycinnamate and piperine were isolated and characterized from

the combined hexane and chloroform extracts of Piper longum. The extracts significantly blocked the adhesion of neutrophils to endothelium in a time and concentration-dependent manner. Piplartine and piperine alkaloidal amides were isolated from Piper. It showed cytotoxic activity towards several tumor cell lines. The study clearly demonstrated that piperine has

the anti-oxidative, anti-apoptotic, and restorative ability against cell proliferative mutagenic response and phenotypic alterations by piperine, suggesting its therapeutic usefulness in immunocompromised conditions.

Conclusion :-

Here an attempt was made in the review to see the activity of Pippali (Piper longum) in Pranavahastrotas (Respiratory System). This is the main Ingredient in most of the ayurvedic preparations for Pranavaha strotas disorders. The review reveals the activity of Pippali on Pranavaha Strotas and its disorders. From the above review we can say Pippali is very useful drug in disorders of Pranavaha strotas (Respiratory System)

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