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A REVIEW ARTICLE ON POLYGALA CHINESIS LINN. IN CHRONIC BRONCHITIS.

Ayurveda

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ABSTRACT

Senega (*polygala chinesis linn*.) is a herbaceous medicinal plant described in ayurvedic texts for different properties, actions, uses. It is supposed to indicate more than one species commonly used in respiratory diseases. Chronic obstructive pulmonary disease or chronic bronchitis are very common terms used in pathological condition in respiratory system. In which chronic partial or complete obstruction of the airway at any level from trachea to smallest airway resulting in functional disability of lungs Chronic bronchitis is defined as productive cough one that produce sputum that lasts for three months or more per year for at least two year due to rhino virus and adeno virus .The most common causes of chronic bronchitis is cigarette and smoking .It may also be caused by infection or by breathing in second hand tobacco, smoke, chemical fumes, biomass fuel,high level of smoke exposure or other forms of air pollution. The cough is caused by over secretion of mucous. The condition is more common in middle aged male then females, approximately 20%of adult men and 5% of adult woman have chronic bronchitis associated features with cough expectoration ,dyspnoea, haemoptysis and fever According to world health organisation estimates 65 million people have moderate to sever COPD. More than 3 million people died due to COPD in 2005 corresponding to 5% of all deaths globally and as it estimated to be the third leading cause of death by 2030. The recent "Indian study of asthma, respiratory symptoms and chronic bronchitis study of 85,105 men and 84,470 woman from 12 urban and 11 rural sites reported the prevalence of chronic bronchitis to be 3.49% in adult more than 35 years. The national burden was thus estimated to be 14.84 million. In ayurveda, it is a disease of "Pranvaha shrotas" and the term bronchitis is corelated with "Kasnata kasha" meaning cough which caused due to vitiated kaph dosha along with aggravated pitta dosha. For the management of this condition "Bhavprakash Nighantu" explained senega extracts (polygala chinesis linn.) Because it has very rich kaphavatashamaka properties. Tikta (bitter), Kashaya ras,ushna veerya, & katu vipaka leads to chedan karma as well as prevents the formation of freeradicals and over production of mucous and specially very effective in children. The aim of this article is to gain absolute knowledge about senega extracts in the management of chronic bronchitis.

KEYWORDS

Polygala chinensis, Senega, Chronic bronchitis, COPD

INTRODUCTION

In ayurveda science senega (polygala chinensis linn.)is very attributed to kasahar and shwashara properties. Acharyas have incorporated it in many formulations used for the treatment of respiratory disease.. Polygala chinensis linn, belongs to family polygalaceae, commonly known as, meradu (milk wort), senega or seneka & at the same time the senega term is used because its roots thickness is similar to the little finger so, it is called as snake root (senega). About 20 speacies found in India. Senega is most well known for its effectiveness in treating chronic bronchitis .It is perennial herb with numerous slender, wiry extract, smooth, simple stems 6- 12 inches high shrub distributed in the warm temperature regions of the world. Leaves are very small at the base of stems, becoming larger upward, alternate, sessile, exstipulate, lanceolate, smooth margin, rough surface and pale yellow. Flowers are small, numerous, shortly stalked, crowded in a narrow terminal spike 1-2 inches long. Sepals are 5 in number of which the upper one and two lower are small, green, lanceolate and two lateral & one large winged petaloid, slightly veined, orbicular and remaining concave petals. Stamens are 8 in number lying in the lower petal, ovary is laterally compressed 2-celled by a tranverse partition with one pendulous ovule Style is large, curved into a thick blunt besk Fruit is small 2-celled capsule, partially covered by the persistent calyx wings, dehiscing loculicidal Seeds are 2, black hairy with a white caruncle extending from the hilum along the inner side almost to the other end of the seed. The embryo present in the axis of scanty endosperm. The bark Is more or less wrinkled, some what knotted, transveraly cracked so as to be partially annulated, horney, translucent and varying in colour from light yellow grey in the branches and surrounded by white central woody columns.

Senega plant is native species of the north America, extending from the northern parts of Canada, through the northern united states directed south ward, to North Carolins and found in woods, it is mainly growing in dry rocky soil. The two species are considered distinct by all Indian floras and floras of Java and Sian. It is distributed in the plains through out India. Its flowers are seen in may and June, it is quite hardy and was formerly in cultivation in our botanic gardens.

Ayurvedic View

Polygala chinensis Linn. is considerd as the most important plant in ayurveds.It is used to treat respiratory disorders and is usefull as an effective remedies.It is also useful in multiple diseases like asthama, emphysema, pllegm, diarrhea,sore throat,whooping cough,snake bite.It balances the kapha and vata dosha.

The Taxonomical Classification Are Shown In Table No. 1-

KINGDOM	PLANTAE
Family	Polygalacae
Genus	Polygala
Speacies	Polygala chinesis linn.
Common name	Senega
Hindi name	Meradu,miragu
English name	Rottle snake root
Tamil name	Cenakanankal
Bengali name	Marngri,phuntani
Gujrati name	Pilibhonyasna
Other name	Mountain,seneca

The Raspanchak Of The Plant Shown In Table No.2-

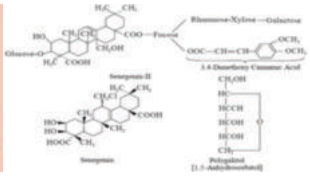
Rasa	Tikta,Kashaya
Guna	Laghu,ruksha,tikshna
Veerya	Ushna
Vipaka	Katu
Karma	Kaphavatashamaka

Chemical Constituents

There are various chemicals present in the polygala chinensis plant including polygalaic acid, volatile oil, resin, sugar, sapogenin, fatty acids, polygalitol and methyl salicylate. Among all these constituents it contains two major constituents called saponins and polygalic acid. The primary compound named sapogenine is designated as presenegenin having the structure of 2 beta, 3 beta, 27-trihydroxy-oleanone-23,28dioic acid. The roots are also containing large amount of methyle salicylate.

MODE OF ACTIONS

The saponines are irritating to mucosal membrane promoting a reflex expectorant action, meaning that it promotes the larger amount of mucus production and removal from the body. This may explain how senega work as an expectorants to loosen phlegm and make it easier to cough up. Europian physians used to treat bronchitis, whooping cough and lungs congestion with help of Senega extract.



Adulterants And Subsitutes

Senega root does not appear to be intentionally adulterated but from carelessness in collection same other root or rhizomes in small portions may be frequently found mixed with it. Indian senegs which was official in Indian pharmacopiea 1955, consists of dried roots of polygala chinesis linn. family polygalacae. It is also used for the same purpose. The dried root of Andrachne aspera, family Euphorbiacae are used as adulterants to the drug in India .It dosent contain saponin and roots are dark reddish brown.

CONCLUSION

Ayurvedic properties and available scientific evidence of the senega extract indicate that it is a potential herbal drug in relieving the symptoms of chronic bronchitis and associated airway inflammation.Chronic bronchitis is very common in smokers and those with COPD which accelerates decline in lungs function, a greater risk of acute exacerbation, worse respiratory symptoms, and possibly greater overall mortality.It is caused by excess mucus production, hypersecretion and mucociliary dysfunction resulting from persistent airway inflammation Management strategies include targeting these various pathophysiologic mechanisms .So, Senega extracts is helpful to overcome these pathophysiological mechanisms of this respiratory disease by decreasing mucus secretions.

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