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Review Article

**A SIDDHA POLYHERBAL FORMULATION FOR BRONCHIAL ASTHMA:
A REVIEW****Jiji Mol. V. C¹, P. Shanmuga Priya², R. Madhavan², S. Murugesan², V. Manjari², M. Murugesan³**

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Abstract:

In Siddha system of medicine various polyherbal formulations proved to be effective for the treatment of various respiratory ailments including asthma. poly herbal formulation employed in asthma are proved to provide symptomatic relief and further recurrence of disease also. Vellerukkam poo mathirai is one of such combination drug containing calotropis gigantea flower, piper nigrum, schizigium aromaticum which is indicated for chronic asthma conditions. For supporting the efficacy of the formulation in asthma explained based on the review of the pharmacological activity of individual drugs used in this formulation. It will be supportive data for the further study on this formulation.

Key words: Siddha, Vellerukkam poo mathirai , Bronchial asthma

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INTRODUCTION

Asthma is a chronic respiratory disease in which airway constricts, become inflamed, and is lined with excessive mucus, often response to one or more triggers. These episodes are being triggered by allergen, cold air, warm air, exercise or exertion and stress. Both prevention of inflammatory response and bronchial hyperactivity are important in long control of asthma [1]. The drugs used in the treatment of asthma mainly acts through any one of the following mechanism [2].

1. Bronchodilators
2. Anti inflammatory agents
3. Mast cell stabilizers
4. Leukotriene antagonists
5. Anti IgE antibody

As per Siddha literature bronchial asthma is classified into 12 types and so many medicines are explained vividly for the management of bronchial asthma. Vellerukkam poo mathirai [3] is one such herbal drug indicated especially for bronchial asthma. It contains ingredients such as

- a) calotropis gigantea flower
- b) piper nigrum
- c) Schyzigium aromaticum flower bud

Each of the ingredients is traditionally used for the management of respiratory ailments. Nowadays peoples want evidence based medicine. Beyond that we are in a situation to convince the world by providing supporting documents to all pharmacological actions of ingredients which are favourable the activity of particular drugs .

Pharmacological actions for Ingredients of the polyherbal formulation:

Calotropis gigantea:

Calotropis gigantea (Crown flower) is a species of *Calotropis* native to Cambodia, Indonesia, Malaysia, Philippines, Thailand, Sri Lanka, India, China and Pakistan. It is a large shrub growing to 4 m (13 ft) tall. It has clusters of waxy flowers that are either white or lavender in colour. Each flower consists of five pointed petals and a small, elegant "crown" rising from the centre, which holds the stamens.. The latex of *Calotropis gigantea* contains cardiac glycosides, fatty acids, and calcium oxalate. The whole flower extract of the *Calotropis gigantea*, was subjected to Pharmacological evaluation for its Anti-tussive, Anti-asthmatic and Expectorant activities [4]. Respiratory symptom like anti-tussive activity determined by inducing cough through ammonia, sulfur dioxide, citric acid induced for three activity respectively in mice and antiasthmatic (determined in guinea pigs) and expectorant activity (determined by Expectorant test) were carried out, following the oral administration of whole flower extract of *Calotropis gigantea* at the dose level of 250mg/kg and 500mg/kg. Aqueous extract of *Calotropis gigantea* has shown significant antitussive effect and anti-asthmatic activities when administered to experimental animals at the dose of 250mg/kg and 500mg/kg was comparable with corresponding standard drugs. The ethanol extract showed significant expectorant activity than other extract of *C.gigantea* [5].

Piper nigrum:

The fruits of *P. nigrum*, is an important as spice have been widely used since time immemorial in household spices as flavoring agents, and also in various traditional systems of medicine and has also been used in the treatment of cholera and dyspepsia, as well as a variety of gastric ailments and arthritic disorders [6]. Alkamides are particularly interesting, due to their various biological activities, ,anti-bacterial, anti-inflammatory and antioxidant activity [7]. According to Ayurvedic system of medicine, *P. nigrum* fruits are anthelmintic, antiasthmatic and used to treat pain, piles, insomnia, and epilepsy (Anonymous, 2001) [8]. According to Siddha system it has properties like carminative, antiperiodic, stimulant, antivatha, antidote, antispasmodic and expectorant also .But in this topic of interest the anti asthmatic property of piper nigrum have to be considered.

It was reported that the presence of PDE-inhibitory components in Piper nigrum rationalize its medicinal use in respiratory anomalies like asthma [9]. Piper nigrum caused inhibition of both CCh and K⁺ -induced contractions of isolated rabbit tracheal strips at the dose range of 0.3-3.0 mg/mL. Some in vitro findings conclude that the bronchodilatory action of Piper nigrum is mediated possibly through PDE-inhibition, in addition to calcium-channel blockade. The scientific rational for this interest is based upon two fundamental principles. First, inhibition of PDE activity increases the cellular content of two key second messengers, cAMP and cGMP, thereby activating specific protein phosphorylation cascades that elicit a variety of functional responses. Increases in cAMP content suppress a broad array of functions in inflammatory and immune cells. Both cAMP and cGMP mediate bronchodilation. It may justify its medicinal use in airway complaints like asthma. It was also found that piperine (1-piperoyl piperidine),an amide alkaloid found in piper nigrum has also proved for its bio enhancing property. This bio enhancing property of piperine was found to be reduced the human dose of rifampicin by about 60% when used in tuberculosis patients [10, 11, 12].

Schyzigium aromaticum

Cloves are the aromatic flower buds of a tree in the family Myrtaceae, *Syzygium aromaticum* Clove contains constituents like acetyl eugenol, Beta-caryophyllene ,vanillin Crategolic acid, tannins, gallotannic acid,methyl salicylate (painkiller), Flavonoids eugenin, kaempferol, rhamnetin, eugenitin, Triterpenoids like oleanolic acid [13]. The dried buds of cloves contain about 15- 20 percent of essential oils, and the bulkof this is eugenol. Clove is a natural antiviral, antimicrobial,antiseptic, and anti-fungal agent. It also holds aphrodisiac and circulation-stimulating capacities [14]. As per Siddha literature it has antispasmodic, carminative, stomachic actions.

The aqueous extract of schyzigium aromaticum was tested on immediate hypersensitivity [15, 16].

The result of that study was Schyzigium aromaticum flower bud dose-dependently inhibited histamine release from rat peritoneal maells (RPMC) by compound 48/80 or anti-dinitrophenyl IgE. When Schyzigium aromaticum flower bud was added, the level of cAMP in RPMC transiently and

significantly increased about 47-fold at 10 s compared with that of basal cells. These results indicated that *Schizigium aromaticum* flower bud inhibits immediate hypersensitivity by inhibition of histamine release from mast cells in vivo and in vitro.

CONCLUSION

From the above information we can conclude that Vellerukkam poo mathirai is one of the best drug which can be indicated for bronchial asthma. Besides we have to do the detailed pharmacological and phytochemical screening of the polyherbal formulation

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