



# LITERATURE REVIEW OF KABA SURA KUDINEER CHOORANAM FOR THE TREATMENT OF KABA SURAM (ACUTE BRONCHITIS) IN CHILDREN

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## Abstract

The Siddha system of medicine is primarily practiced in parts of southern India. It is one of the world's oldest traditional medicine systems, treating not only the physical body but also the mind and soul. Siddha system is based on three humors (Vatham, Pitham, Kabam). When the three humors are in proper balance then the person experiences good health; any imbalance of three humors leads to disease. Acute Bronchitis is an inflammation of the large airways of the lung. It is characterized by fever, running nose, cough, polyarthralgia, shortness of breath, tiredness, constipation and vomiting. It is correlated with Kabasuram in Siddha medicine. Kaba suram is one of the types of Suram in children mentioned in Siddha literature Balavagadam. The symptoms of Kaba suram can be managed by Siddha herbal formulation Kaba sura kudineer. The main ingredients of Kaba sura Kudineer are Pirandai ver, Kandankathiri ver, Arathai ver, Sirukanchoori Ver, Vetpula Ver, Ponmusuttai Ver, Mulli Ver, Arathai, Sukku. The ingredients of this formulation possess anti-inflammatory, anti-pyretic, expectorant, bronchodilator activity. All the ingredients of trial drug are purely herbals only. It is easily prepared, palatable, assimilates quickly and also safe for pediatric usage in the treatment of Kaba suram. Hence, this article gives an insight on the efficacy of Kaba sura Kudineer for Kabasuram (Acute Bronchitis) based on review of various literatures and scientific studies. This review further focuses to improve the research on Siddha herbal medicines.

**Key words:** Siddha, Kaba Sura Kudineer Chooranam, Kabasuram, Acute Bronchitis.

## INTRODUCTION:

The siddha medical system is one of the ancient medical system of the world. Siddhars considers nature and man as essentially one. Nature is man and man is nature. Man is said to be the microcosm and Universe is the macrocosm because what exists in the world exists in man <sup>(1)</sup>. Siddha system considers a human body as a conglomeration of 3 doshas, 5 elements, and 7 basic tissues together with waste products such as sweat, feces, and urine. The food, which is the basic building material for the human body, gets processed into these body tissues, humors, and waste products to determine the balance of the doshas in the body. The equilibrium of humors ensures optimum health while any disturbance in these results in diseases <sup>(2)</sup>.

In Siddha medicine “Balavagadam” is specialized in treating diseases during childhood phases elaborately. Kabasuram is one of the commonest disease in childhood. As per siddha literature Suram is classified into 20 types<sup>(3)</sup>. It is marked by Fever, Dry or productive cough, Dyspnea, Constipation, Vomiting, Malaise, Polyarthralgia, Running nose<sup>(4)</sup>. Mostly these symptoms are correlated to Acute bronchitis. According to Mukkutram concept Kabasuram is considered as Kaba disease. In Pillaipini Maruthuvam, Kabasuram in children presents with symptoms of Acute Bronchitis, such as cough, nasal discharge, fever, diarrhea and malaise.

Acute Bronchitis is commonly preceded by a viral upper respiratory tract infection. It is more common in the winter when respiratory viral syndromes pre-dominate. The tracheobronchial epithelium is invaded by the infectious agent, leading to activation of inflammatory cells and release of cytokines. Constitutional symptoms, such as fever and malaise, follow. The tracheobronchial epithelium may become significantly damaged or hyposensitized, leading to a protracted cough lasting 1-3 week. The child 1st presents with nonspecific upper respiratory infectious symptoms, such as rhinitis. Three to 4 days later, a frequent, dry, hacking cough develops, which may or may not be productive. At first low-grade fever and upper respiratory signs such as nasopharyngitis, conjunctivitis, and rhinitis. As the syndrome progresses and cough worsens, breath sounds become coarse, with coarse and fine crackles and scattered high-pitched wheezing<sup>(5)</sup>.

Acute bronchitis is usually caused by a viral infection. This is most often the same viruses that cause colds and the flu. It may also be caused by a bacterial infection, or by physical or chemical agents that are breathed in. These may include dusts, allergens, and strong fumes, including those from chemical cleaning compounds or tobacco smoke.

Acute bronchitis may come after a common cold or other viral infections in the upper respiratory tract. It may also occur in people with chronic sinusitis, allergies, or those with enlarged tonsils and adenoids. It can be serious in people with lung or heart diseases. Pneumonia is a complication that can follow bronchitis<sup>(6)</sup>.

The Kaba sura kudineer is a specific medicine indicated for Kabasuram in the Siddha text book Aathmaratchamirtham ennum vaithiya sara sangiragam<sup>(7)</sup>. Kaba sura kudineer is used in the effective management of Kabasuram (Acute Bronchitis). In the textbook of Pothu Maruthuvam the humoral changes of Kabasuram is quoted as “Suramathe Kabamathagum”<sup>(8)</sup>. From this it is clear Iyam humor is increased in this disease. Taste such as Kaarppu (pungent), Kaippu (bitter), Thubarppu (astringent) is said to balance the Iyam humor<sup>(9)</sup>.

Most of the ingredients in Kaba sura kudineer have Kaarppu (pungent), Kaippu (bitter) taste which helps in decreasing the Iyam humour **(10)[8]**. It is easily prepared, palatable, assimilates quickly and also safe for pediatric usage in the treatment of Kabasuram. Most of the ingredients have expectorant, antipyretic, anti-inflammatory, antioxidant and antimicrobial action which helps in relieving the symptoms of Kabasuram. All the ingredients of trial drug are herbals and Kudineer form is easily consumable medicine for children. If this medicine is proved to have a good prognosis on this condition, it will also help to children to treating Acute Bronchitis.

## INGREDIENTS:

1. Pirandai ver (*Cissus quadrangularis*)
2. Kandankathiri ver (*Solanum surattense*)
3. Arathai ver (*Alpinia officinarum*)
4. Sirukanchoori Ver (*Tragia involucrate*)
5. Vetpula Ver (*Flueggea leucopyrus*)
6. Ponnusuttai Ver (*Cissampelos pareira*)
7. Mulli Ver (*Solanum anguivi*)
8. Arathai (*Alpinia officinarum*)
9. Sukku (*Gingiber officinale*)

S.No	Drug Name	Botanical name	English Name	Family	Part used
1	Pirandai ver	( <i>Cissus quadrangularis</i> )	Veldt Grape , Four-angled vine	Vitaceae	Root
2	Kandankathiri ver	( <i>Solanum surattense</i> )	Wild Egg plant , Yellow – Berried Night –shade	Solanaceae	Root
3	Arathai ver	( <i>Alpinia officinarum</i> )	Lesser galangal	Zingiberaceae	Root
4	Sirukanchoori Ver	( <i>Tragia involucrate</i> )	Indian Stinging Nettle	Euphorbiaceae	Root
5	Vetpula Ver	( <i>Flueggea leucopyrus</i> )	Bushweed, Cool Pot, Indian Snow Berry, Thermacole Plant, Shivano	Phyllanthaceae(amla family)	Root
6	Ponmusuttai Ver	( <i>Cissampelos pareira</i> )	Velvet leaf,Wound Plant , A buta, Pereira Root, Barbasco.	Menispermaceae	Root
7	Mulli Ver	( <i>Solanum anguivi</i> )	Forest bitter berry	Solanaceae	Root
8	Arathai	( <i>Alpinia officinarum</i> )	Lesser galangal	Zingiberaceae	stem
9	Sukku	( <i>Gingiber officinale</i> )	Dried ginger	Zingiberaceae	Stem

#### PURIFICATION OF RAW DRUGS:

1. Pirandai ver - Washed in water and dried in the sunlight.
2. Kandankathiri ver - Washed in water and dried in the sunlight.
3. Arathai ver - Washed in water and dried in the sunlight.
4. Sirukanchoori Ver- Washed in water and dried in the sunlight.
5. Vetpula Ver- Washed in water and dried in the sunlight.
6. Ponmusuttai Ver - Washed in water and dried in the sunlight.
7. Mulli Ver - Washed in water and dried in the sunlight.
8. Arathai - Cleared by removing the dust with a clean cloth and dried in the sunlight.
9. Sukku -Soaked in limestone water for 3 hrs dried, and the outer layer is peeled off.

#### STANDARD OPERATING PROCEDURE:

The above mentioned raw drugs are taken in equal amount and made into a coarse powder. Decoction is prepared by adding 250ml of water to 5 gm of powder and it is reduced to 1/8<sup>th</sup> of it is volume (30ml) then the decoction is filtered <sup>(7)</sup>.

#### THERAPUTIC DETAILS OF KABA SURA KUDINEER CHOORANAM

##### Dosage :

- 4-7 years-15ml (3gm Kudineer Chooranam)
- 7-12years-30ml (5gmm Kudineer Chooranam)

##### Indication:

Kabasuram <sup>(7)</sup>.

## 1.பிரண்டை வேர் (Pirandai Ver):



Fig .No.1

### வேறுபெயர்கள்:-

வச்சிரவல்லி<sup>(10)</sup>.

### Organoleptic characters:

Parts Used	- Stem,Root (தண்டு,வேர்)
Suvai (சுவை)	- Kaarppu(கார்ப்பு)
Thanmai (தன்மை)	- Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

### Actions(செய்கை):

- உடற்தேற்றி(Alterative)
- ருதுவுண்டாக்கி(Emmenagogue)
- பசித்தீதுாண்டி (Stomachic)

### Chemical Constituents:

Potassium, calcium, zinc, sodium, iron, lead, cadmium, copper, calcium oxalate and magnesium. Other constituents of the plant are resveratrol, piceatannol, pallidol, parthenocissus, 31 methyl triacontanoic acid, taraxeryl acetate, taraxerol, iso-pentadecanoic acid, phenol, tannin, carotene and vitamin <sup>(11)</sup>.

### Pharmacological Activity:

- Antipyretic<sup>(12)</sup>
- Anti-inflammatory
- Anti-tumor
- Gastro-protective
- Antioxidant
- Antimicrobial <sup>(11)</sup>.

## 2. கண்டங்கத்தரி வேர்( Kandankathiri ver ):



Fig .No.2

### Organoleptic characters:

Parts Used	-Leaf, Flower, Fruit, Seed, Root (இலை, மலர், கனி, விதை, வேர்)
Suvai (சுவை)	- Kaarppu(கார்ப்பு)
Thanmai (தன்மை)	- Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு) <sup>(10)</sup>

### Actions(செய்கை):

- கோழையகற்றி(Expectorant)
- சிறுநீர்பெருக்கி (Diuretic)
- அகட்டுவாய்வகற்றி(Carminative)

### Chemical Constituents:

Saponins, alkaloid, phenols, solamargine, solasurine, solasonine, gum, ascorbic acid, sterols, torvoside K, torvoside L, khasianine, glycosides, flavonoids, aculeatiside A, solamargine, glycoalkaloid, steroidal compound, steroidal alkaloids, polyphenol (caffeic acid), coumarins (esculentin and aesculin), steroids (carpesterol, campesterol, daucosterol, stigmasterol, cycloortanol, and cholesterol), triterpinins, and sapogenin <sup>(13)</sup>.

### Pharmacological Activity:

- Antiasthmatic <sup>(14)</sup>
- Antioxidant activity
- Antimicrobial activity<sup>(13)</sup>

### 3.அரத்தை வேர்(Arathai ver):-



Fig .No.2

#### வேறுபெயர்கள்:

சிற்றரத்தை(10)

#### Organoleptic characters:

Parts Used	-Root (வேர்)
Suvai (சுவை)	- Kaarppu(கார்ப்பு)
Thanmai (தன்மை)	- Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

#### Actions:

- கோழையகற்றி(Expectorant)
- பசித்தீதூண்டி (Stomachic)
- வெப்பகற்றி(Febrifuge)

#### Chemical Constituents:

- Diarylheptanoids, flavonoids, volatile oil, terpenes, phenylpropanoids, and glycosides<sup>(15)</sup>
- Carbohydrates, flavonoids, sterols, proteins, triterpenes, and tannins<sup>(16)</sup>

#### Pharmacological Activity:

- Antiinflammatory
- Antitumor
- Antiviral
- Antimicrobial
- Antioxidant
- Antiallergic,
- Gastroprotective agents<sup>(15)</sup>



#### 4.சிறுகாஞ்சொறி வேர்(Sirukanchori ver):



Fig .No.4

#### வேறுபெயர்கள்:

காஞ்சொறி,காயஞ்சொறி,எருமைக்காயஞ்சொற்றி,கண்குடி,காஞ்சோரி<sup>(10)</sup>

#### Organoleptic characters:

Parts Used	-Root (வேர்)
Suvai (சுவை)	- Kaippu(கைப்பு)
Thanmai (தன்மை)	-Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

#### Actions:

வியர்வைப் பெருக்கி(Diaphoretic)

#### Chemical Constituents:

- Steroids, Triterpenoides, Glycosides, Carbohydrate, Alkaloids, Phenolic compound, Catechins, Flavanoids, Saponins, and Tannins <sup>(17)</sup>
- Palmitic acid (13.39%), (7Z,10Z,13Z)-7,10,13-Hexadecatrienal (11.44%), (3beta,24s)- Stigmast-5-En-3-One (8.10%), Pipeline (7.37%) and Friedelan-3-one<sup>(18)</sup>

#### Pharmacological activity:

- Anti inflammatory
- Analgesic and sedative effects<sup>(19)</sup>
- Antioxidant activity <sup>(20)</sup>

### 5. வெட்டிலா வேர் (Vetpula ver):-



Fig .No.5

#### Organoleptic characters:

Parts Used	-Root (வேர்)
Suvai (சுவை)	- Kaippu(கைப்பு)
Thanmai (தன்மை)	-Veppam(வெட்டம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

#### Chemical Constituents:

- Alkaloids, terpenoids, unsaturated sterols, glycosides, saponins, phenolics, flavonoids, tannins, carbohydrates and protein<sup>(21)</sup>.
- Alkaloids, steroids, saponin, catachin, tannins and cardiac glycoside<sup>(22)</sup>.

#### Pharmacological activity:

Analgesic antispasmodic, antibacterial properties antihypertensive effect, antiarrhythmic effect, antimalarial activity and anticancer actions .Phytochemical profile, proximate composition and anti-oxidant properties<sup>(23)</sup>

### 6. பொன்முசுட்டை வேர் (Ponmusuttai ver):-



Fig .No.6



**வேறுபெயர்கள்:**

:பாடை,கருஞ்சாரணை,மலைதாங்கி,வாரிகம்,வெற்பேந்தி<sup>(10)</sup>

**Organoleptic characters:**

Parts Used	-Root,Leaf (வேர்,இலை)
Suvai (சுவை)	- Kaippu(கைப்பு)
Thanmai (தன்மை)	-Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

**Actions:**

- உடற்றேற்றி(Alterative)
- வியர்வைப் பெருக்கி(Diaphoretic)
- கோழையகற்றி(Expectorant)
- பசித்தீதுாண்டி (Stomachic)
- உடலுரமாக்கி(Nutrient)

**Chemical Constituents:**

Alkaloids, saponin, phenols, flavonoids, tannins, terpenoids glycosides, carbohydrates and anthraquinones<sup>(24)</sup>

**Pharmacological activity:**

Antipyretic, anti-inflammatory, antiarthritic, antiulcer, antidiabetic, anticancer, antifertility, antimicrobial, antioxidant, antivenom, antimalarial, and immunomodulatory<sup>(25)</sup>.

**7.முள்ளி வேர்(Mulli ver):-**

**Fig .No.7**

**Organoleptic characters:**

Parts Used	-Root,Leaf (வேர்,இலை)
Suvai (சுவை)	- Kaarppu(கார்ப்பு)
Thanmai (தன்மை)	-Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

**Actions:**

- வியர்வைப் பெருக்கி(Diaphoretic)
- கோழையகற்றி(Expectorant)
- சிறுநீர்பெருக்கி(Stimulant)
- வியர்வைப்பெருக்கி(Diaphoretic)

**Chemical Constituents:**

Alkaloids, flavonoids, tannins, saponins, phenols, steroids and triterpenoids<sup>(26)</sup>

**Pharmacological activity:**

- Antioxidant activity
- Antibacterial activity<sup>(27)</sup>

**8.சுக்கு(Sukku):**

Fig.No.8

**வேறுபெயர்கள்:**

அதகம்,கடுபத்திரம்,விட மூடிய அமிர்தம்<sup>(10)</sup>

**Organoleptic characters:**

Parts Used	-Root,Leaf (வேர்,இலை)
Suvai (சுவை)	- Kaarppu(கார்ப்பு)
Thanmai (தன்மை)	-Veppam(வெப்பம்)
Pirivu (பிரிவு)	- Kaarppu(கார்ப்பு)

**Actions:**

- அகட்டுவாய்வகற்றி(Carminative)
- வெப்பமுண்டாக்கி(Stimulant)
- பசித்தீதுாண்டி (Stomachic)

**Chemical Constituents:**

Monoterpenoids (B-phellandrene, camphene, cineole, geraniol, curcumene, citral, terphineol, borneol, cineole, geranyl acetate, limonene, linalool) and sesquiterpenoids, zingibero<sup>(28)</sup>.

**Pharmacological activity:**

- Anti pyretic activity <sup>(29)</sup>.
- Anti inflammatory activity<sup>(30)</sup>.
- Anti viral activity <sup>(30)</sup>.
- Anti diarrheal activity <sup>(31)</sup>.
- Anti bacterial activity<sup>(31)</sup>.

**Conclusion:**

Here the formulation of Kaba sura Kudineer clearly had the potential to treat the Kabasuram (Acute Bronchitis) in the best way. All the ingredients have the antipyretic, antimicrobial, antioxidants, anti-inflammatory and bronchiodialator activity and according to siddha medical system it acts on kabasuram on their taste (Suvai) basis(Adipadai) also. Here by I conclude the Kaba sura Kudineer is efficient in treating the viral upper respiratory tract infection like Acute Bronchitis. The above mentioned medicine can be effectively used for the management of “Kabasuram”.

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