

# SIDDHA MEDICINE COMBAT AGAINST NOVEL CORONA VIRUS – AN APPRAISAL.

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## ABSTRACT:

### *Introduction:*

Infectious viral diseases kill seventeen million and over people annually. Nature based pharmacotherapy tends to be an alternate to antivirals in circumstance of inadequate effectiveness and antagonistic. Consequently, various Siddha herbal and metalloids pharmaceutical have been in use for therapeutic resolutions since olden eras and are recognized for our antiviral possessions with durable aftereffect. Specified the challenges and possibilities of Siddha Medicine's antiviral treatment towards the current COVID - 19, this analysis emphasizes the substantiated data on herbal and metalliod substances as these assorted knowhows can offer effective and unailing delivery.

### *Data source:*

The data used were obtained from PubMed, Google Scholar, ScienceDirect etc. Terms of Siddha herbs, metalloids and COVID – 19 infections were used as search. Siddha Literatures were analysed.

### *Result:*

Infectious COVID -19 is causing utmost demise all round the world. As a customary medicine, deliberately Siddha Phyto herbal and metalloid compositions supports the positive clinical findings therewith of Novel Corona virus and three kind of *tāenta curañkaḷ* (varied fevers) which are widely proved effective in practice. The administration of Siddha drugs inclines to regulates immune activity, providing synergistic advantage on preventing and curing pathogen, could be thereupon of Novel Corona virus also. The remarkable delivery systems including decoction, nanoparticles in Siddha Medicine are an added gain.

### *Conclusion:*

Siddha formulations, on emergence of latest viral variants could inhibit pathogens or synchronize the immune to sack out infections, and henceforth should be explored and analysed sooner as they stretch sturdy mark to defend life.

**KEYWORDS:** Antiviral, COVID – 19, Siddha formulations.

## 1.0 INTRODUCTION:

Viral contagions perform a dynamic role in people sicknesses. Regardless of the advanced generation made in immunization, drug development and prevention issues, we are often distressed by numerous viral escape mutants owing to lack of effectual antiviral therapies and defensive vaccines. Furthermore, due to innovative globalization, universal journey and speedy urbanization, numerous epidemic/ pandemic outbreaks are instigated by emergent viruses characterize a life-threatening hazard to communal healthiness [1-2]. Presently one among them is the COVID – 19, a severe acute respiratory pandemic syndrome identified first in December 2019,

which is an ongoing infectious disease spreading globally ensuing in a public health crisis. This positive-sense single-stranded RNA, SARS-CoV-2, as of April 6, 2020 has been reported in more than 200 countries with more than 1,280,000 cases. It is a highly contagious viral spread by means of human-human transmission via small droplets or direct exposure with varying severity and fatality rates. Right now, primary intervention is being used in controlling infection to prevent the spread of novel virus [3-4]. Herbal plants formulations with their miracle phytoconstituents and purified natural metallo - mineral preparations of the Sothern India's Siddha Medicine have evidenced hitherto in attenuating many infectious viruses [5-6]. These provide a rich source for newer novel antiviral drug development, as there are extensive studies on antiviral activity of the phytoconstituents derived from medicinal herbs and metals. Detecting the interaction of viral – host mechanisms like viral penetration, replication, biosynthesis, maturation, and release from these natural antiviral Siddha Medications is much necessitate. In this brief review, supporting this validation, an internet search was performed and I summarized here with the Siddha herbal and metalloids preparations with proper validation from literatures in conjunction with the notable antiviral activities which could conceal the recent novel virus outbreak, because the vaccine and standard therapies are still lacking and hence will pave a public eye to broaden exploration.

## 2.0 METHODOLOGY OF SEARCH:

The current search was restricted to article having full text or abstract available in English. Databases used includes PubMed, Google Scholar, ScienceDirect, and Traditional Knowledge Digital Library. Key explored words used were “antivirals”, “herbs”, “herbal medicine”, “medicinal plants”, “traditional medicine”, “metalloids”. Siddha texts were studied and analysed. Searches were also done using the botanical name of the plant and English name of the metalloid with known possible antiviral property. Appendixes of encompassed studies were also searched for additional references.

### 2.1 COVID – 19:

The most fascinating property of COVID – 19 is, on droplet exposure to air, it quickly reaches any surfaces and spreads rapidly on contamination up to 72 hours. Whoever infected by the drastic virus may have nose or flu-like symptoms and might terminate up with respiratory – renal – cardiac multiorgan failure and demise. The incubate implies to 6 days or may hike unto 14 days. Real time reverse transcription polymerase chain reaction from the nasopharyngeal swab would be the typical diagnosing method. Personal sanitization, a lively lifestyle, supportive medications and food have been suggested as management and to recover invulnerability [3-4].

### 2.2 Cura rōkam (Pyrexia) in Siddha<sup>[7]</sup>:

Siddha Medicine's antique work “*Cikiccā ratṇa tīpam*” labels *tāenta curañkaḷ* (varied type of fevers) under *cura rōkam* which is analogous thereupon of colloquial aforesaid Corona virus.

There are three kinds of *tāenta curañkaḷ* whose signs and symptoms are depicted below:

#### 2.2.1 *Vāta pitta tāenta curam*<sup>[7]</sup>:

The signs and symptoms are *Tēkam naṭukkal* (Shivering), *Carvāṅka nāēy* (Systemic illness), *Nāvu karuttal* (Purple tongue), *Nayanu pēcal* (enjoy social interactions - personality disorder), *Acatiṽāṅna nittirai* (Exhausted somnolence), *Malam mañcaḷākavum veḷuppākavum pāētal* (yellowish pale coloured stools), *Vāy kacappu* (Bitter or metallic taste in mouth), *Vaṭivaṅ kunṅral* (Weight loss), *Tayakkam* (Reluctance) and *Mayakkam* (Giddiness).

### 2.2.2 Vāta cilēttuma tāenta curam<sup>[7]</sup>:

*Carvāṅka nāēy* (Systemic illness), *Cuvācam* (Respiratory illness), *Irumal* (Cough), *Nā veḷuppu* (Paler tongue), *Rāēma cilirppu* (Cutis anserina), *Miṭaṟu nāētal* (Sore throat), *Tākam* (Thirstiness), *Tayakkam* (Reluctance), *Aḷutal* (Crying out), *Pitarral* (Jabbering), *Malapantam* (Constipation) and *Viyarvai* (Sweats) are the clinical symptoms persists.

### 2.2.3 Pitta cilēttuma tāenta curam<sup>[7]</sup>:

Clinical symptoms comprise of *Atika viyarvai* (Perspiration), *Vāy pitarral* (Speech impairment), *Acatiyāṅa nittirai* (Malaise with drowsiness), *Irumal* (Cough), *Māṟpu nōy* (Cardiac sickness), *Tākam* (Thirst), *Talaivali* (Headache), *Piṭarivali* (Pain in back of head), *Nāvaḷavaḷappu* (Glossy tongue) and *Uruci vācaṅai teriyāmai* (Ageusia and anosmia).

COVID -19 symptoms <sup>[4]</sup>	Symptoms of tāenta curam <sup>[7]</sup>		
	Vāta Pitta curam	Vāta cilēttuma curam	Pitta cilēttuma curam
<b>Uncomplicated (mild) Illness:</b>	Present		
<b>I. Upper respiratory tract viral infection</b>			
1. Fever			
2. Dry cough		Present	Present
3. Sore throat		Present	
4. Nasal congestion			
5. Malaise	Present		Present
6. Headache			Present
7. Myalgia			
8. Diarrhoea	Present		
<b>II. Moderate Pneumonia:</b>		Present	
1. Shortness of breath			
2. Productive Cough			Present
3. Cyanosis	Present		
<b>III. Severe Pneumonia: Acute Respiratory Distress Syndrome and Sepsis</b>			
1. Respiratory distress		Present	
2. Renal impairment	Fewer persists	Fewer persists	Fewer persists
3. Tachycardia			Present
4. Altered mental status	Present	Present	Present
5. Functional alterations of organs (Systemic illness)	Present	Present	
<b>IV. Other symptoms</b>			Present
1. Alteration in smell and taste sensations <sup>[8]</sup>			
2. Dizziness <sup>[8]</sup>	Present		
3. Chills <sup>[3]</sup>	Present	Present	
4. Cardiogenic failure <sup>[9]</sup>			Present

Thus, comparison of COVID 19 with that of Siddha's tāenta curañkaḷ tabulated in Table I, gives a complete picture of coherence between the symptoms.

### 2.3 Medications in Siddha Medicine<sup>[7]</sup>:

(i) All the three types of tāenta curañkaḷ can be treated using the Siddha's proposed medicine as said in *Cikiccā ratṅa tīpam* prose "Tāenta Cura kiyālam" (Varied fever decoction)

Ingredients of *Tāenta cura kiyālam*:

1. *Cukku* (Dried Ginger; *Zingiber officinale* Roscoe)
2. *Mīḷaku* (Black pepper; *Piper nigrum* L.)
3. *Tippili* (Long Pepper; *Piper longum* L.)
4. *Mōṭi* (Root of long pepper; *Piper longum* L.)
5. *Cīṛṛarattai* (Lesser galangal; *Alpinia officinarum* Hance)
6. *Kōṣṭam* (Costus; *Costus speciosus* (J.Koenig) Sm.)
7. *Cevviyam* (Root of Black pepper; *Piper nigrum* L.)
8. *Cīṛutēkku* (Stemless Premna; *Pygmaeopremna herbacea* (Roxb.) Moldenke)
9. *Vāyviḷaṅkam* (False black pepper; *Embelia ribes* Burm. f.)
10. *Pēyppuṭal* (Serpent gourd; *Trichosanthes cucumerina* L.)
11. *Taṇiyā* (Coriander; *Coriandrum sativum* L.)
12. *Nilavēmpu* (King of bitters; *Andrographis paniculata* (Burm.f) Nees)
13. *Paṛpāṭakam* (Threadstem carpet weed; *Mollugo cerviana* (L.) Ser.)
14. *Viṣṇukiranti* (Slender dwarf morning – glory; *Evolvulus alsinoides* Linn.)

Method of preparation: All the drugs are taken in equal quantities of 1 *Kaḷaṅcu* (5.1 Grams) <sup>[10]</sup> each. They're purified and grinded as coarse powder in a mortar. To with add ½ *paṭi* (672 ml) <sup>[10]</sup> water and warmth in low flame. The decoction is completed by reducing the quantity to 1/8 *paṭi* (168 ml). The decoction is filtered and used.

Dosage: 1 *Vīcam paṭi* (84 ml). Twice daily for 3 days.

Indication: *Carva tāenta curāṅkaḷ* (All kinds of fever)

Drug	Active naturals	Validation
Ginger rhizome	Allicin	Inhibit viral replication and influenza A (H <sub>1</sub> N <sub>1</sub> ) <sup>[11]</sup>
Dry fruits and root of black pepper	Piperamides Dry fruit extract Piperine <sup>[12]</sup>	Inhibits coksackie virus type B3 <sup>[13]</sup> Inhibits human para influenza virus <sup>[14]</sup> Inhibition of influenza A (H <sub>3</sub> N <sub>2</sub> ) <sup>[15]</sup>
Dry fruit and root of long pepper	Dry fruit extract Piperine <sup>[16]</sup>	Inhibits vesicular stomatitis Indiana and human para influenza virus <sup>[14]</sup> Inhibition of influenza A virus (H <sub>3</sub> N <sub>2</sub> ) <sup>[15]</sup>
Lesser galangal rhizome	Diarylheptanoids	Inhibits Herpes simplex virus type 1 <sup>[17]</sup> Antiviral activity against influenza, RSV (in vivo & in vitro), human immunodeficiency, severe acute respiratory syndrome. <sup>[18]</sup>
Costus	Diosgenin <sup>[19]</sup>	Inhibits viral replication and Hepatitis C Virus (HCV) in in vitro <sup>[20]</sup>
Stemless Premna	Root extract	Anti - microbial effect <sup>[21]</sup>
False black pepper	Embelin	Virus inhibiting activity against Influenza A and B <sup>[22]</sup>
Serpent gourd	Trichosanthin	Anti- HIV 1 activity <sup>[23]</sup>
Coriander	Seed extract	Reduction in formation of Herpes simplex virus - 1 plaque <sup>[24]</sup>
King of bitters	Andrographolide	Inhibits herpes simplex virus 1, Epstein-Barr virus, Simian Retro Virus, anti - HIV, immunomodulator <sup>[25]</sup>
Threadstem carpet weed	Whole plant	Immunostimulant <sup>[26]</sup>
Slender dwarf morning – glory	Leaves extract	Immunomodulatory <sup>[27]</sup>

(ii) Standard medication for all Endemic fever (*Koḷḷaik kāyccal*) <sup>[10]</sup>:

Siddha poem of “*Patārta kuṇa cintāmaṇi*” explains about *Vellaippātāṇam*'s (White arsenic) medicinal properties in its as:

“*Vellaippā ṭāṇam viṭaṅkaṭitīr umpūcak*

*Koḷlaic curattōṣaṅ kōracanni - tolḷaiyuru*

*Nācippuṅ vāyppuṅ naṅaikiranti pōmuṅṅa*

*Ācikkūṅ kumpamulai āy*”

Context: *Cuttitta Vellaippātāṇam* (Purified white arsenic) cures all *Koḷlaik kāyccal* (endemic) or pandemic fevers, *Viṣakkaṭi* (deadly poisonous bite), *Tōṭam* (infectious diseases), *Caṅṅi* (delirium), *Mūkkuppuṅ* (nasal ulcers), *Vāyppuṅ* (oral ulcers), *Kiranti* (Chancre), *Curam* (Fever), *Yāṅaikkāl* (elephantiasis), *Tāēlaip parriya piṅikaḷ* (skin diseases) and *Cuvācakācam* (brochial asthma) at the dose of 1/16 *uḷunteṭai* (4 milli gram) to 1/8 *uḷunteṭai* (8 milli gram).

### 3.0 DISCUSSION:

Traditional herbal decoction and purified natural metalloids projected by Siddha Medicine for the treatment of infectious diseases of viral basis are justified hardly. But the active principles derived from herbal medicine has proved finally for the progress of newer medicinal herbal decoction in controlling the threats modelled by the pathogenic virus. (Table II)

From Table I & II there will be a bit likelihood that *Tāenta cura kiyālam* could tend to eradicate viral virulence on most viral diseases probably COVID -19, but preferably after appropriate clinical intervention. *Kiyālam*, (Decoction) which is that the aqueous preparation of herbal drugs taken orally and absorbed very quickly. This could be used in alarming and acute conditions too with safety profile [28]. They will also offer effective and steadfast delivery because of herbal phytochemicals. Again, Arsenium acidum arseniosum or white arsenic (*Vellaippātāṇam*), a metalloid compound found in nature crust is basically utilized in numerous Siddha preparation [10][29]. So far everywhere in the sphere purified white arsenic as arsenic trioxide is employed for anti- leukemic re lapsed and refractory acute promyelocytic leukemia and to inhibit hepatitis C virus. It also has anti- human adeno virus, anti- HIV – 1 property which are widely accepted globally [30-31]. This validated evidence brings a ray of hope in using *Cuttitta Vellaippātāṇam* (purified white arsenic), an honest virucide to cure novel corona virus. Basically, *Cuttitta Vellaippātāṇam* in Siddha Medicine is made ready into compatible nano particles (as *parpam* or *Centūram*) over *puṭam* (calcination) process and is given with the adjuvant per procedures of Siddha literature. The dosage of *parpam* is ¼ *uḷunteṭai* to ½ *uḷunteṭai* (16 mg - 32 mg) and that of *Centūram* is ½ *uḷunteṭai* to 1 *uḷunteṭai* (32 mg- 65 mg). The medicine is being encapsulated as a single drug agent with delivery vehicle with either cow's milk, cow's ghee, cow's butter, ginger juice, dried ginger powder or honey [10]. While *Cuttitta Vellaippātāṇam* being hydrophilic in nature, these adjuvants are generally liposomes or lipophilic drugs as in case of cow's ghee or emulsifiers as like cow milk and cow butter or oral bio enhancers as in honey and ginger liquid which helps to improve the drug delivery and bio accessibility [10] [32-35]. Added, the compounds in ginger possess lipophilic properties, thus all enhancing bio availability evidencing the marvel Siddha Medicine [36].

#### 4.0 CONCLUSION:

Siddha poly formulations with verified data could be a healthier hypothesis against the viricidal activity of COVID - 19 and must to be scrutinised to appropriate probe swiftly to secure existence.

#### CONFLICT OF INTEREST:

The author declares no conflict of interest.

#### CONTRIBUTORS:

Nil.

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