



A Combination of two siddha polyherbal decoctions, Nilavembu and Kaba Sura Kudineer for increase the Immunity along with siddha management of mild to moderate symptomatic home quarantined COVID-19 Patients

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Abstract

Nilavembu Kudineer and Kaba Sura Kudineer is a traditional Siddha decoctions used to treat various types of fevers and inflammatory diseases. We report our experience of using Nilavembu and Kaba Sura Kudineer and other siddha medicine successfully in the treatment of 5 coronavirus 2 (SARS-CoV-2) infected patients along with its chemical profile. A family comprising of 5 members, with age ranges between 13 and 67, both male and female, one with pre-existing renal impairment, SARS-CoV-2 positive with mild to moderate category were treated with Siddha medicine on the basis of symptoms like fever, headache, throat pain etc., along with the specific dietary practice. The drug was consumed at home quarantine. Siddha medicine and decoctions might be a safe to manage COVID-19 patients. Rigorous research is required in larger population and also for drug discovery.

Keywords: *Nilavembu Kudineer and Kaba Sura Kudineer, symptoms, Coronavirus, disease*

1.Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus responsible for the ongoing outbreak of coronavirus disease 2019 (COVID-19) globally. The transmission rate is very high and many of the transmitted cases are in the asymptomatic or mild stage. Moderate phase patients present cough and shortness of breath, whereas the severe phase patients have the septic shock with multi-organ failures[1]. India and China have added traditional medical systems along with conventional treatment protocol as an integrative approach to prevent and treat SARS-CoV-2 infection. The traditional Siddha medical system, established by Tamil yogis (Siddhar) classifies the diseases into 4448 types and also describes their specific treatment modalities[4]. Siddhar Agastyar (Father of this medical system) and Siddhar Yugi have authored two books exclusively for fever, named as sura nool (Textbook on Fever) and kaaviya sura nool (Treatise on Pyrexia-ology) respectively. These books describe 64 different types of fevers and their specific therapies. They

mention 276 different etiologies for fevers that include post-partum infection (pirasava pani), influenza (jalathosha suram), smallpox/chickenpox infection (vaisoori), pyrexia of unknown origin (maha suram), malaria (murai kaaichal), acute pneumonia (kaasa suram), acute severe viral infections (visha suram, natchu suram), etc. All the viral infections associated with skin lesions are categorized under vaisoori and ammai categories. All the complicated fever types with different stages of multi-organ failures are categorized under Janni (13 types) category. Extensive documentation has been done for various types of fevers and their specific treatments. External oil application, herbal steam inhalation, herbal powder snuffing, herbal decoction (aqueous extracts), syrups, tablets, dietary practices, metal/mineral based drugs, and animal origin drugs are used in Siddha to treat fevers.

- ☒ Siddha compound formulations *Gowri chinthamani*, *Sivanar amirtham*, *Poorana chandrodayam*, *Thalaga parpam*, *Pavala parpam*, and *Vasantha kusumasura mathirai* for screening their antimicrobial activity against *Neisseria mucosa*, *Klebsiella pneumonia*, *Streptococcus pneumonia*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Aspergillus niger*. The use of these formulations in respiratory illness were justified.
- ☒ The drugs *Sivanar amirtham* and *Pavala parpam* have shown microbial sensitivity against all the above tested respiratory pathogens
- ☒ Various metabolites like flavonoids, triterpenoids, monoterpenoids, sesquiterpenes, and phenolic and benzoic iridoid glycosides derived from the herbs were responsible for the antiviral activity.

2. Procedure to prepare a polyherbal decoction of KSK and NVK

Both the KSK (**Kaba Sura Kudineer**) and NVK (**Nilavembu Kudineer**) decoctions were prepared as per the Siddha Formulary of India Guidelines[20]. In order to obtain NVK or KSK decoctions, a 10mg coarse powder of NVK or KSK, obtained from the Siddha shop at Tirunelveli, India, was boiled in 480ml of water and reduced to one fourth (120ml), followed by filtration. The composition of polyherbal decoction ingredients of both NVK and KSK are detailed in Tables 1 and 2, respectively.

Table 1 Composition and polyherbal decoction ingredients of Nilavembu Kudineer (NVK) as per Siddha Formulary of India Guidelines

No	Botanical name	Siddha name	Family	Part used	Parts
1	<i>Andrographis paniculata</i> (Burm.f.)	Nilavembu	Acanthaceae	Whole plant	1 part
2	<i>Vetiveria zizanioides</i> L.	Vettiver	Poaceae	Whole plant	1 part
3	<i>Santalum album</i> L.	Santhanam	Santalaceae	Wood	1 part
4	<i>Zingiber officinale</i> Roscoe.	Chukku	Zingiberaceae	Rhizome	1 part
5	<i>Piper nigrum</i> L.	Milaku	Piperaceae	Dry fruits	1 part
6	<i>Cyperus rotundus</i> L.	Korai kilanku	Cyperaceae	Rhizome	1 part
7	<i>Hedyotis corymbosa</i> L.Lam	Parpadagam	Convolvulaceae	Whole plant	1 part
8	<i>Plectranthus vettiveroides</i> (K.C.Jacob) N.P.Singh & B.D.Sharma	Vilamicham ver	Lamiaceae	Root	1 part
9	<i>Trichochanthes cucumerina</i> L.	Peipudal	Cucurbitaceae	Whole plant	1 part

Table 2 Composition and polyherbal decoction ingredients of Kaba Sura Kudineer (KSK) as per Siddha Formulary of India Guidelines

S. no	Botanical name	Siddha name	Family	Part used	Parts
1	<i>Zingiber officinale</i> Roscoe.	Chukku	Zingiberaceae	Rhizome	1 part
2	<i>Piper longum</i> L.	Milagu	Piperaceae	Fruit	1 part
3	<i>Syzygium aromaticum</i> (L.) &L.M Perry	Kirambu	Myrtaceae	Flower bud	1 part
4	<i>Anacyclus pyrethrum</i> L.	Akkarakaram	Asteraceae	Rhizome	1 part
5	<i>Tragia involucrate</i> L.	Siru kanjori	Euphorbiaceae	Leaves	1 part

6	<i>Solanum anguivi Lam</i>	Karimulli	Solanaceae	Leaves	1 part
7	<i>Terminalia chebula (Gaertn.)</i>	Kadukkai	Combretaceae	Fruit rind	1 part
8	<i>Justicia adathoda Linn.</i>	Adathoda	Acanthaceae	Leaves	1 part
9	<i>Anisochilus carnosus (L.f) Wall, ex Benth</i>	Karpoora valli	Lamiaceae	Whole plant	1 part
10	<i>Costus speciosus (J.Koing)Sm</i>	Koshtam	Costaceae	Rhizome	1 part
11	<i>Tinospora cordifolia (Thunb.) Miers,</i>	Seenthil	Menispermaceae	Whole plant	1 part
12	<i>Clerodendrum serratum (L.)</i>	Siru Theku	Verbanaceae	Leaves	1 part
13	<i>Andrographis paniculata (Burm.f.)</i>	Nilavembu	Acanthaceae	Whole plant	1 part
14	<i>Cyperus rotundus L.</i>	Korai Kilanku	Cyperaceae	Rhizome	1 part
15	<i>Sida acuta (Burm.f.)</i>	Sitramutti	Malvaceae	Whole plant	1 part

3.Aim and Background

Globally, the ongoing pursuit in exploring an effective drug to combat severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) virus has not met with significant success to date. Indian traditional medicines, especially polyherbal formulations like Siddha system of medicine have been used as public health interventions for controlling viral epidemics like dengue and Chikungunya. These traditional therapies have been found safe, effective, and widely accepted. The current study evaluates the comparative efficiency of siddha medicine system in the management of mild to moderate symptoms of COVID-19 disease.

4. Siddha in Covid-19 Management

- Kaba sura kudineer -60 to 90 ml bd
- Nilavembu kudineer -60 to 90 ml bd
- Seenthil chooranam -1 to 2 gm bd
- Nellikai ilagam -5 to 10 gm bd
- Inji thenoral / inji tea / Athimaduram (licorice) tea
- Steam inhalation with thulasi / notchi leaves/manjal (turmeric)
- Gargling –water boiled with a pinch of salt and turmeric
- Herbal water infusion containing chukka (dried ginger)

4.1 Symptomatic Management for Mild and Moderate Cases

The dose and duration can be changed considering the requirement of the patient.

Table 3: Symptomatic Management for Mild and Moderate Cases

Symptoms	Treatment
Fever, Headache, Malaise, Fatigue	<ul style="list-style-type: none"> • Nilavembu Kudineer -60 to 90 ml bd • Kabasura Kudineer -60 to 90 ml bd • Brahmananda Bairava Maathirai -1 to 2 tablets with honey and ginger juice • Thirithoda Maathirai -1 to 2 tablets bd
Cough	<ul style="list-style-type: none"> • Kabasura Kudineer -60 to 90 ml bd • Thalesathi Chooranam -3 gm tds with honey • Thippili Rasayanam -500mg to 1 gm • Adathodai Manapagu -10 to 20 ml bd with warm water • Vasantha Kusumakara Maathirai -1 to 2 tablets bd • Nellikai Ilagam -5 to 10 gm bd

Sore Throat	<ul style="list-style-type: none"> • Kaba sura Kudineer -60 to 90 ml bd • Thalesathi Vadagam -chew 1 to 2 pills • Athimathura Chooranam -1 to 3 gm bd with honey • Adathodai Nei -10 to 15 ml bd
Nasal congestion, loss of smell	<ul style="list-style-type: none"> • Manjal Kombu Pugai • Milagu Pugai • Oma Pottanam • Neerkovai Maathirai
Diarrhoea	<ul style="list-style-type: none"> • Sundai Vatrul Chooranam • Thayirchundi Chooranam -2gm with buttermilk
Breathing difficulty	<ul style="list-style-type: none"> • Nilavembu Kudineer -60 to 90 ml bd • Kabasura Kudineer -60 to 90 ml bd • Seenthil Chooranam -1 to 2 gm bd • Swasakudori Maathirai -1 to 2 tablets bd • Pachai karpooora maathirai -1 to 2 tablets bd • Thippili Rasayanam -500mg to 1 gm bd
Nausea and Vomiting	<ul style="list-style-type: none"> • Madhulai Manapagu -5 to 10 ml bd

5. Follow up and Patients' Experience

All the cases were able to follow our instructions including dietary practices. They did not have any post covid complications for 6 months after the treatment. No adverse effects were observed. Patients were very happy for the cost effective treatment for COVID-19, without hospitalization.

6. Cost for the Siddha Medicines

The cost of a single dose of siddha medicines ranges from INR 25 to 50. In our case, the total expenditure for treating patient-1 (20 doses), patient-2 (14 doses), and others (10 doses each) was INR.1950 (USD 12), INR.1650 (USD 8) and INR.1550 (USD 7) respectively (On 18th Jun 2021, USD 1 INR 76.65). Moreover, it cut down the cost of hospitalization, oxygen administration or ventilator support and steroids administration to the patients.

7. Discussion

Siddha medicines controlled the fever and other symptoms to all the patients, and also improved the oxygen saturation significantly immediately with the first dose in patient. The duration of COVID symptoms during conventional therapy is 8-19 days [15,16]. In our cases, the duration of the symptoms is 8-12 days, in which first one week they were under conventional therapy that did not showed any improvement in symptoms, but the symptoms were relieved significantly with the siddha treatment. The duration could have been reduced in case of siddha medicine systems was used immediately after the first symptom.

It did not cause any toxicity to kidney or liver or hematological parameters. The low dose and shorter duration of therapy renders safe usage without acute toxicity. Siddha literature describes the use of this drug for short duration only, and not advised for long term therapy. This is the first clinical report of Siddha medicines as a safe therapeutic agent in SARS CoV-2 infective patients with mild to moderate symptoms. This may be the synergistic effect of all the phytochemicals too.

8. Conclusion

Siddha medicines along with the specific supplementary dietary practice could be used to treat COVID-19 cases without side effects. The therapeutic benefit is a collective action of organics and phytocompounds. Rigorous research is required in larger population and also for drug discovery.

Reference

- [1] Xu X-W, Wu X-X, Jiang X-G, Xu K-J, Ying L-J, Ma C-L, et al. Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-Cov-2) outside of Wuhan, China: retrospective case series. *BMJ* 2020;368:m606. <https://doi.org/10.1136/bmj.m606>.
- [2] Zheng ZZ, Ma NN, Li L, Jiang D. Efficacy of traditional Chinese medicine on COVID-19: two case reports. *Med Acupunct* 2020:1432.
- [3] Yang Y, Islam MS, Wang J, Li Y, Chen X. Traditional Chinese medicine in the treatment of patients infected with 2019-new coronavirus (SARS-CoV-2): a review and perspective. *Int J Biol Sci* 2020;16:1708. <https://doi.org/10.7150/IJBS.45538>.
- [4] Senthilvel G, Amuthan A, Jasphin S. Pediatric liver diseases and its management by Herbals : a traditional Siddha medicine. *Treatise* 2016;5:32e40.
- [5] Raj M, editor. Siddha medicine diseases - volume I (Tamil). 1st ed. Kanyakumari, India: ATSVS Siddha Medical College and Hospital; 2010.
- [6] Raj M, editor. Pitham, peenisam and suranoi (Tamil). 1st ed. Kanyakumari, India: ATSVS Siddha Medical College and Hospital; 2008.
- [7] Harishyogi. History of Yoga. 2012 May 9. [Cited 2019 Jun 16]. In: Yoga Health Blog [Internet].
- [8] Ramachandran S, editor. Siro Rathina Nadana kaandam (Tamil). Chennai, India: Thamarai Noolagam, Chennai; 1997.
- [9] Saravana S P, Sivanantha A, Sasivel S, Kumar SG, M S. Scientific analysis of Vajra kandi chenduram A Siddha formulation towards its safety, pharmacological action and proposed benefits in the management of covid-19. *Saravana AI World J Pharm Res* 2020;9:2212e26. <https://doi.org/10.20959/wjpr20205-17474>.
- [10] Jayaraj M. Metal based Siddha drugs for pandemic fevers based on experience (Tamil). Karpa Avizhdham publication; 2020. p. 41e2.
- [11] Pillai KC. Kannusamy parambarai vaidyam (Tamil). Chennai, India: B Rathina Nayakkar & Sons; 1996.
- [12] Balaramaiah V. Siddha marunthu sei muraigan (Tamil). 1st ed. Chennai, India: Aruljothi Publishers, Chennai; 1973.
- [13] Amuthan A, Devi V, Shreedhara CS, Rao V, Puri K, Jasphin S. Vernonia cinerea (neichitti keerai) regenerates proximal tubules in cisplatin-induced renal damage in mice. *Asian J Pharmaceut Clin Res* 2019;12:332e5.
- [14] Kannan N, Shanmuga Sundar S, Balaji S, Amuthan A, Anil Kumar NV, Balasubramanian N. Correction: physiochemical characterization and cytotoxicity evaluation of mercury-based formulation for the development of anticancer therapeutics (e0195800) *PloS One* 2018;13:4. <https://doi.org/10.1371/journal.pone.0195800>. *PLoS One* 2018;13.
- [15] Chen J, Qi T, Liu L, Ling Y, Qian Z, Li T, et al. Clinical progression of patients with COVID-19 in Shanghai, China. *J Infect* 2020;80:e1e6. <https://doi.org/10.1016/j.jinf.2020.03.004>.
- [16] Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet* 2020;395:1054e62. [https://doi.org/10.1016/S0140-6736\(20\)30566-3](https://doi.org/10.1016/S0140-6736(20)30566-3).
- [17] Thanickachalam G. Aureolus Philippus Theophrastus. n.d. [18] Veeramamunivar Veeramamunivar. Vaagada thirattu - volume II (Tamil). 1st ed. Chennai, India: Thamarai Noolagam, Chennai; 1912.

- [19] Thambi NM. Maathirai alangaaram (Tamil). 1st ed. Kanyakumar, India: Siddha literature Publisher, Munchirai; 2013.
- [20] Pillai S. Sangira Chinthaamani (Tamil). 1st ed. Chennai, India: Siddha Medical Literature Research Center; 2004.
- [21] Raj MT. Siddha maruthuva noi thoguthi- Volume 1 (Tamil). Siddha maruthuva noi thoguthi-. 1st ed., vol. 1. Kanyakumari, India: ATSVS Siddha Medical College and Hospital; 2010. p. 279.
- [22] Preckel C. Cinnabar, calomel and the art of kushtas_ az_ 1: mercurial preparations in unani medicine. *Asiat Stud - Etudes Asiat* 2015;69:901e32. <https://doi.org/10.1515/asia-2015-1042>.
- [23] Is calomel truly a poison and what happens when it enters the human stomach? A study from the thermodynamic view point in. *Main Group Met Chem* 2016;39(1-2). n.d,
- [24] Liu J, Shi JZ, Yu LM, Goyer RA, Waalkes MP. Mercury in traditional medicines: is cinnabar toxicologically similar to common mercurials? *Exp Biol Med* 2008;233:810e7. <https://doi.org/10.3181/0712-MR-336>.
- [25] Sathish R, Devi Amuthan A. Preparation, chemical analysis and sub-acute toxicity evaluation of linga pathangam (a mercury based Siddha herbo metallic drug) in rats. *Int J Pharm Pharmaceutical Science* 2014;6.
- [26] Meena R, Ramaswamy RS. Preclinical, pharmacological and toxicological studies of karpooora chindhamani mathirai (KCM) for analgesic, anti inflammatory, anti-pyretic effects in rats international journal of ayurvedic medicine. *Int J Ayurvedic Med* 2012;3:10-5.
- [27] Rajalakshmi S, Musthafa M. Acute and sub-acute toxicity study of Siddha herbo-mineral formulation “panchamuga chendhuram” in experimental rats. *Int J Pharm Pharmaceutical Res* 2015;5:73-81.
- [28] Rajmohan MS, Swetha R, Sowmiya S. International journal of current research in medical sciences acute and long-term toxicity study of poora parpam a herbo-mineral Siddha drug. *Int J Curr Res Med Sci* 2017;7:128e37. <https://doi.org/10.22192/ijcrms.2017.03.07.019>.
- [29] Eleza C, Sivanandan S. Efficacy of Kanaga linga karpooora mezhugu on rheumatoid arthritis. *Indian Med Homeopath* 2002:20-8.
- [30] Amuthan A. Oncologists need to assess efficacy of mercury to treat cancer: Dr Arul Amuthan. *Pharmabiz* 2014:1.
- [31] Thas JJ. Siddha Medicine-background and principles and the application for skin diseases. *Clin Dermatol* 2008;26:62e78. <https://doi.org/10.1016/j.clindermatol.2007.11.010>.
- [32] K N, SS S, B S, Amuthan A, NV AK, B N. Physiochemical characterization and cytotoxicity evaluation of mercury-based formulation for the development of anticancer therapeutics. *PloS One* 2018;13:e0195800.

