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Siddha and Biomedicine Integrative Management of Novel Corona Virus Disease - A Case Report

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Abstract:

In the wake of Covid-19 pandemic, Traditional Siddha Medicine has gained wide popularity in Tamilnadu. A 39 year old female Covid positive patient is presented here under who was introduced with the combined therapy of Siddha and biomedicine along with dietary advice and standard quarantine care. The subject had all the peculiar clinical features of Covid 19. *Nilavembu kudineer* (NVK) was administered twice daily at the dose of 60 ml along with the prescribed biomedicine. Qualitative SARS-COV-2 RT-PCR test was used as the confirmatory test for Covid 19 along with basic haematological and biochemical parameters. After the initiation of integrative medicine, the subject showed improvement symptomatically and gradual disappearance of symptoms without adverse effects. RT-PCR after 14 days of therapy reported negative and the subject was greatly relieved. This case report suggests the importance of safer and effective integrative drug therapy using Traditional Siddha Medicine and biomedicine.

Keywords: Alternative medicine, Covid-19, Integrative and Complementary Medicine, *Nilavembu kudineer*, SARS Cov-2, *Siddha*

Received: 18.09.2020

Revised: 25.09.2020

Accepted: 28.09.2020

Quick Response code



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Introduction:

The burden of Covid 19 pandemic is increasing in a faster pace. As of now the total active Covid cases in Tamilnadu is 5, 69,370 with reported 9148 deaths. ^[1-2] In the current status, the entire health care system along with the indigenous medicines is focussed for a positive outcome either for its prevention or its management. Traditional Siddha medicine (TSM) is popular in Tamilnadu as the native medical system of treatment that has a long history of customary, culinary and medical practice bounded with the Tamil tradition.^[3] The medical system composes numerous potent formulations for treating simple ailments to dreadful diseases. The long history of practice has proved its exquisite role in managing epidemics through the systematic approach consisting of drug, diet, therapies and life style modifications.^[4] The preventive concept of Siddha medicine not only covers the general community prevention protocols, but also stresses on the case specific dietary and lifestyle modifications based on the subjects *Nadi* (Pulse diagnosis) and *Dehi* (Body temperament). Few of the classical medicines are supported as a combination, aimed for improving the general health and immunity and as a remedy for both upper and lower respiratory illness.^[5] In this case report, a Covid positive individual was subjected to combined therapy with Siddha and biomedicine for documenting its beneficial role in integration. One of the Siddha classical decoctions *Nilavembu Kudineer* (NVK) along with standard care and diet was found effective in this case. ^[6]

Case Report:

A 39 years old healthy woman, a bank employee in Chennai, Tamil Nadu was suffering with the following complaints namely loss of smell, tastelessness, sensation of heat and body pain for 4 days. It started apparently on one day morning as a one sided head ache, which was continuous and progressed throughout the day. The headache was gnawing in nature without any relation to food, stress or sleep. There was no associated nausea, vomiting or vision disturbances but the subject felt some gastric disturbances, bitter taste in tongue, tastelessness while having food, loss of appetite, mild skin rashes and frequent loose stools on the same day. She started feeling pain in all the joints, heaviness of body from the 2nd day onwards along with a feverish feeling inside. On the 3rd day she observed the progressive loss of smell from morning itself. Initially she was able to appreciate local odours then she became unable to sense food articles and pungent food substance, finally to perfumes. Furthermore, adding to her suffering she got a mild sore throat and dry cough. Throughout the period she was not having any complaints of cold, rhinorrhoea, sneezing or nasal congestion. On examination, the subject was weak and pale. There were neither rashes nor petechiae. She had tenderness over all the joints without swelling.

She was euthyroid, non-diabetic and did not report any history of hospitalization, pneumonia, tuberculosis, influenza, bronchial asthma and allergy. None of her family members reported any symptoms or been diagnosed for Covid 19. She did not report any travel history but however she

indicated that four colleagues working in the same bank were affected by COVID. So accordingly, she was advised to isolate herself due to the current pandemic and screen for a qualitative SARS-COV-2 (COVID 19) RT-PCR test (Oropharyngeal swab specimen) along with basic haematological and biochemical parameters. She was confirmed with a positive Covid 19 test report. Her haematological investigation reported a low profile in almost all the parameters. It was inferred that she may have acquired the infection from the bank where she was working regularly with exposure to colleagues and multiple clients.

Therapeutic Intervention:

Nilavembu Kudineer was advised for a period of 2 weeks according to the advisory of Ministry of AYUSH and guidelines for Siddha practitioners published by the Ministry of AYUSH.^[10] Standard prescription from an allopathic

doctor for 2 weeks was scheduled as LDH and ALT was elevated indicating cytokine storm. The medicines were separately taken by following a time gap (Table 1). Counselling was done to alleviate fear and instil confidence to the subject. She was free to follow a normal diet, to include plenty of fruits with some restrictions to avoid chilled food and drinks till the recovery period. *Chukku kanji* (dry ginger gruel) was also prescribed to take regularly as a healthy recipe. Follow up was done telephonically every day for monitoring the prognosis, or for any untoward effects. She was advised to strictly follow home isolation and quarantine schedule as per the Ministry of Health and Family Welfare (MOHFW) guidelines.^[2] In addition, she was advised to measure her oxygen saturation (SpO₂) levels using a pulse oximeter three times a day and her SpO₂ levels remained between 98-99 and pulse rate ranging between 72-76/min.

Table- 1: Oral medicine Schedule:

Intervention	Drug Name	Dose	Timings
Siddha Medicine	<i>Nilavembu kudineer</i>	60 ml (Day -1 -14)	Twice daily before food
	<i>Chukku kanji</i> (Gruel prepared with dry ginger): 5 g powder of dry ginger boiled well with rice gruel	1 bowl (Day -1 - 14)	Thrice daily before food
Modern medicine	Acyclovir	800 mg (Day -1 -7)	5 times a day (6 a.m, 10 a.m, 2 p.m, 6 p.m and 10 p.m) after food
	Methyl Prednisolone	8 mg (Day -1 -7)	Thrice daily after food
		4 mg (Day -8-9)	Thrice daily after food
		2 mg (Day -10 -11)	Thrice daily after food
		2 mg (Day -12-13)	Twice daily after food
2 mg (Day -14)		once daily after food	

Table -2: Results – Haematological and Biochemical Investigations:

Parameters	Day 0	Day 14
Erythrocyte (RBC) Count	4.55 mill/cu.mm	4.62 mill/cu.mm
Haemoglobin (Hb)	10.6 gm/dL	10.8 gm/dL
PCV (Packed Cell Volume)	34.3 %	37.0 %
MCV (Mean Corpuscular Volume)	75.4 fL	80.1 fl
MCH (Mean Corpuscular Hb)	23.3 pg	23.4pg
MCHC (Mean Corpuscular Hb Conc.) 32-36	30.9 g/dL	29.2 g/dL
RDW (Red Cell Distribution Width)	17.1 %	16.1 %
Total Leucocytes (WBC) count	3800 cells/cu.mm	15130 cells/cu.mm
Neutrophils	38 %	67.20%
Lymphocytes	54 %	29.50%
Monocytes	3 %	1.90%
Eosinophils	4 %	0.40%
Basophils	1 %	0.30 %
Platelet count	365 10 ³ / µl	5.61 Lakhs/cmm
SGPT (ALT)	134 U/L	22.1 U/L
SGOT (AST)	Not done	8.2 U/L
ESR	30	Not done
D-dimer	0.50 FEU	0.35 FEU
CRP	0.71 mg/L	0.4 mg/ L
Serum ferritin	16.4 ng/ml	8.86 ng/ml
LDH	304 U/L	Not done
Fibrinogen	Not done	340 mg/dl

Outcome of the intervention:

The outcome was assessed based on the improvement of symptoms and a repeated Covid test supported by basic haematological and biochemical investigations on day 14 of the intervention (Table 2). It was observed that with the integrated therapy, the subject was improving and the well-being of the subject was maintained with no downfall after the initiation of integrative therapy. She regained her appetite and was mentally fit and confident than before. She did not report any form of adverse effects or discomfort with the combined therapy. Her Covid-19 (SARS-CoV-2) Qualitative RT-PCR test reported negative with

overall improvement in haematological and biochemical profiles.

It was observed that the total leukocyte count (TLC) was reduced to 3800 cells / cu.mm indicating mild leucopenia on day zero and was elevated to 15130 cells / cu.mm indicating leucocytosis on day 14 whereas Alanine Amino transferase (ALT) - SGPT was raised to 134U/L on day zero which later was found to be within normal limits (22.1 U/L) on day 14. The subjected exhibited neutropenia, and mild increase of ESR on day 0. The other important prognostic markers classic of Covid-19 such as serum ferritin, C – reactive protein (CRP), and D-dimer was within limits on day zero except increased LDH to 304 U/L, a sign of cytokine storm.

The reason for the higher leukocyte count on day 14 could be a possible urinary tract infection with increased pus cells and epithelial cells in complete urine examination. Moreover, the patient complained of occasional burning micturition and passing of yellowish urine. In this direction, the next day early morning sample was subjected to urine culture and sensitivity examination but reported as no growth in the urine culture with subsequent relief of aforesaid urinary symptoms with an advice to consume two and half litres of water daily.

Discussion:

Covid 19 is a viral infection of pandemic in nature caused by a novel corona virus or Beta CoVs. It is transmitted through droplets from cough or sneezing from an infected subject, and recently aerosol transmission also has been reported.^[7] In TSM, the symptoms of Covid 19 could be more or less correlated with the Siddha terminology '*Iyya suram*' or *Kaba suram*.^[8] *Iyyam* typically denotes phlegm humour as one of the main manifestation and *suram* indicating febrile conditions. It is a generic diagnostic terminology used by the Siddha physicians to denote febrile conditions with or without infections origin, in which there is either vitiation, aggravation of *iyyam* pertaining commonly to respiratory system as well as affecting other systems.^[8,9] These group of phlegmatic fevers shows a replica of clinical symptoms as that of Covid like respiratory illnesses namely fever, myalgia, malaise, sore throat, cough, dyspnoea or shortness of breath.^[8] TSM advocates a holistic approach for the prevention and management of Covid 19

primarily aimed for elimination or correction of the phlegmatic aggravation and its clinical association through the administration of herbal, herbo-mineral medications and other therapies.

The medications depend on the stage of the illness, and in cases useful as preventive and in palliative care for Covid. Ministry of AYUSH in coordination with the stake holders of TSM had published the guidelines for Siddha Practitioners for managing Covid illness through Siddha medicine.^[10] The guidelines incorporate several immune enhancing dietary advice, internal medications and *Varmam* (Pressure therapy) in a stage wise and systematic order.

One of the important concoctions of the guideline as well as advisory dated 6th March 2020 from Ministry of AYUSH is *Nilavembu kudineer* (NVK) was administered to the subject along with the allopathic intervention. NVK, a classical polyherbal formulation which is prepared as decoction is very popular for its efficacy in managing different manifestations of fever, particularly of viral origin.^[11] It is composed of 9 herbs in course powder form, in which *nilavembu* (*Andrographis paniculata* Burm. f.Nees) is the key ingredient.^[6] It is reported in one of the studies that the ingredients of NVK and its potential lead molecules possess anti-viral, anti-plasmodial, anti-inflammatory, hepato-protective, anti-oxidant and immune-modulatory properties in general.^[12,13] One in-silico study, reported that the bioactive compounds of aqueous extract of NVK (Benzene 123 Triol) has shown its binding and blockade effects against the ACE2 receptor, the prime drug target of Covid 19 virus.^[14]

The dengue outbreak in Tamilnadu in the year 2012 witnessed the clinical potential of NVK, when the government and the health department (Tamilnadu) highly recommended it to the public for its broad spectrum role in prevention of outbreak and managing the burden associated with it. ^[14] Initiatives thus were taken to promote its usage in all the government clinical establishments. The effect of NVK is further justified through its fundamental six taste theory referred in Siddha medicine. ^[3] The primary taste of NVK is bitter and the associate taste pungency would impart a greater role in determining its hot potency to mitigate *kabam* or *iyyam*. The bitter taste suggests that NVK possess germicide, anti-microbial, blood purifying and anti-pyretic properties whereas pungency eliminates stagnated phlegm which is considered as one of the underlying causes for advancement of any ailment particular to lung or other systemic illness. ^[3]

In this particular case, NVK was administered twice a day before food for a period of 14 days. The subject was asked to prepare the concoction by herself, by boiling 5 grams of NVK powder in 240 ml potable water and reducing it to 60 ml i.e., ¼ th of the volume which has to filtered and consumed before it cools. Based on anecdotal evidences, the authors infer that her improvement with the symptoms is specific to the NVK decoction. The improvement in haematological parameters like TLC and LFT may be attributed to its anti-viral and hepato-protective effects. Its mitigating effect on Covid 19 virus could be explained on the basis of six taste theory, its potential lead molecules with ACE2 inhibitor effect and

its specific action which have an overall support in Covid care.

Conclusion:

The case report throws light on the importance of including TSM along biomedicine in the fight against Covid 19. TSM offers a better means of its time tested safer formulations in treating epidemics, or to reduce the health burden of Covid 19 victims.

Limitation of study:

This is single case study it needs systematic clinical studies on large samples that are better appreciated for validating remedies mentioned under TSM for Covid 19.

Written consent:

The study was verbally explained to the patient and written consent was obtained. For the ethical purpose, if any poor prognosis were suspected then the patient would have been referred to a higher centre as per government norms.

Acknowledgements:

The authors acknowledge the guidance given by Dr. V. Balamurugan, Siddha Physician and Consultant, Amrutha Centre for Siddha Medicine, Chitlapakkam, Chennai – 600 064, Tamil Nadu. Moreover, the authors thank the panel of allopath doctors and especially Dr. L. Mugunthan, Former Research Officer (Modern Medicine), CCRS for their guidance in providing advice wherever necessary. In addition, the authors thank the technical section of CCRS for their assistance and timely help to accomplish this paper.

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Conflict of interest: Author declares that there is no conflict of interest.

Guarantor: Corresponding author is guarantor of this article and its contents.

Source of support: None

How to cite this article:

Vinayak S, Eugene W, Kanakavalli K. Siddha and Biomedicine Integrative Management of Novel Corona Virus Disease – A Case Report. *Int. J. AYUSH CaRe*. 2020; 4(3):154-160.