Clinical profile of the patients at Siddha Covid Care Centre, Theni, Tamil Nadu, India – A cross-sectional study

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Abstract

Introduction: The Indian Government issued various guidelines to the state government wherein introduced plan for setting up COVID care centres (CCC) to isolate and monitor asymptomatic and mild COVID-19 patients. The Government of Tamil Nadu, apart from CCC used the strength of traditional Siddha medicine, one of the Indian systems of medicine, by opening Siddha Covid Care Centres (SCCC) at various facilities like community hall, housing board homes, school and college hostels, across the state in 37 districts. Methods: As a cross-sectional study, we evaluated the clinical profile of the laboratory confirmed COVID-19 patient admitted in SCCC, Theni district, Tamil Nadu, India, which was opened on 8 May 2021. Results: During this month, 585 COVID-19 positive patients were admitted. Among them 60.9% were males, 39.1% were females. 40% of the admitted patients were in the age group 31–50 years. 13% of the patient had at least one of the co-morbid condition and 80% were symptomatic with fever 40% and cough 36% as more common. Discussion: Patients were treated with the Siddha system of medicine adhering to the guidelines and were discharged after 10 days treatment. Nearly 4% who required further medical treatment observing their clinical condition and SpO2 levels were referred to the nearby medical college hospital. Conclusion: This study illustrated that SCCC offered appropriate clinical triaging and daily monitoring and hence it was considered as safe alternative to medical institutions during the pandemic.

Keywords: COVID-19, COVID care centre, isolation, Siddha, symptomatic

Introduction

World health organisation (WHO) suggested key areas that the local authorities of the cities should focus on to prevent the spread of corona virus disease-19 (COVID-19) by deriving new policy and coordinating local plans for effective control, communication regarding the risks and providing easy access to healthcare services for COVID-19.[1] In view of this, Government of India released national guidelines in setting up of the COVID care isolation centres[2] and the state government[3] adhering to this guideline implemented in setting up the isolation centres restructuring the identified facilities like community halls, school or college hostel.

COVID-19 pandemic accelerated the need for evidence generation, and it is also important that there is a need for rapid dissemination and implementation of evidence-based practices and interventions in this public health emergency.[4,5] Traditional

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Siddha system of medicine one among the Indian system of medicine (AYUSH), proved to be beneficial in controlling during the epidemic of Dengue in Tamil Nadu state during 2017.[9]

To reduce the spike in COVID-19 positive cases and deaths outside the hospitals, Tamil Nadu state government planned to set up Siddha Covid Care Centres (SCCC) to isolate and monitor positive cases, asymptomatic and mild to moderate symptomatic cases for constant monitoring by trained Siddha physicians under Directorate of Indian Medicine and Homeopathy (DIM&H). The deployment of medical, paramedical staff and provision of medical supplies at SCCC was carried out by DIM&H and Department of Health and Family welfare while other arrangements were made by the district administration.

Tested positive COVID-19, both symptomatic and asymptomatic cases in stable condition were admitted in SCCCs as per protocol. Clinical profiling of the cases admitted in the COVID care centers are important in planning integration of Siddha system of medicine in public health activities. Understanding the clinical characteristics of patients admitted in the SCCCs will help Siddha primary care physicians in handling the cases more efficiently. This will also help in mitigating COVID-19 by proper allocation of resources available to them and reduces the stress of the constrained Indian medical system. As of now, there is no such documentation about the clinical profiling of cases admitted in SCCCs. First of its kind, we describe the demographic and clinical characteristics of patients at SCCC, Theni, Tamil Nadu, India, a COVID care centre managed only with the traditional Siddha system of medicine.

**Methods**

**Study design**

Cross sectional descriptive study was conducted among the COVID-19 positive patients admitted in SCCC, Theni, during the month of May 2021. The reporting of the study was adhered to STROBE guideline.

**Study site**

Siddha Covid Care Centre set up in Government built housing board facility at Theni district, Tamil Nadu, India.

The SCCC was opened on 8 May 2021. The facility had three blocks which had three floors and eight homes in each floor. Each home had three separate rooms with a total of 198 beds available for admission. The patients were referred from the state-run screening centres who could not self-isolate at home due to medical or non-medical reasons like non-availability of separate room, most of the family members infected etc., and the children were admitted as most of the family members were infected and were admitted together in the centres. There were 13 Siddha physician, 9 staff nurse, 6 pharmacist, 16 sanitary workers posted in SCCC in rotational basis.

During admission, unique Id was allotted to the patients and demographic details were collected and hand sanitizer and disposable masks were provided. The vital signs, inclusive of SpO₂ level and medical history were recorded by the physician. During isolation in the SCCC, patients had their temperature and respiratory symptoms checked 2–3 times each day. As per the guidelines for Siddha Practitioners for COVID-19, issued by Ministry of Ayush, Government of India, based on the clinical conditions, the patients were treated, with Nilavembu kudineer, Kabasura kudineer, Thalissathi chooranam, Amukkara chooranam, Adathodai manappagu, Oma thineer, pills like Biramanandand bairamam, Vasanthakumakaram, Bala sanjeevi and Unai maadhirai. To ensure the mental health for speedy recovery Thirumoolar Siddhar Yogam was taught and practiced daily adhering the COVID-19 protocols like social distancing. With constant monitoring after 10 days, with the recovery of clinical symptoms and under stable condition, the patients were discharged and sent home after counseling for further home quarantine two weeks and follow up. According to the guideline, if the condition deteriorates the patient would be immediately transferred to district tertiary care hospital for further management.

**Data collection**

Collection of information regarding name, age, gender, source of COVID-19 infection were collected from the screening report while the details regarding date of symptom onset, date of COVID-19 diagnosis, co-morbid status, present complaints, their personal history like education, occupation, any substance abuse if any were collected during the time of admission. They were also enquired about any previous infection with COVID-19 within one year and the COVID vaccination details if present.

**Ethics approval**

The routine information collected during admission were used and personal identifiers like name, address from the record were not used in this study to ensure the confidentiality. Hence Institutional Ethics Committee clearance was not sought.

**Statistical analysis**

Statistical analysis for frequency distribution were performed using SPSS statistics version 26 (Armonk, New York, USA).

**Result**

During the month of May 2021, 585, COVID-19 positive patients were admitted, in Siddha Covid Care Centre, situated in Government built housing board facility at Theni district. Among them 356 (60.9%) were males, 229 (39.1%) were females. Nearly 40% of the admitted patients were in the age group 31–50 years [Figure 1]. More than 80% of the patients were literate and 55% were in the earning group. Nearly 15% of the admitted patient had anyone of the substance abuse like alcohol, smoking or tobacco chewing [Table 1]. Mainly the patients were diagnosed by real time polymerase chain reaction (RT-PCR) for severe acute respiratory syndrome - corona virus 2 (SARS-CoV-2) and nearly 0.7% reported that they had previously infected with COVID-19 since March 2020.
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Among 585, admitted, four had previous history of COVID-19 infection a year back and were treated at the hospital. Nearly 64% of the affected, had no direct public interaction. Seven patients had history of two doses of COVID vaccination completed during April 2021 and 35 had single dose vaccination during the month of April.

From the history we could see that the patient took 0–3 days to test RT-PCR from the onset of the symptom. Only 9.7% of them tested on the same day of the appearance of the symptom, while 41.2% the next day, 24% on 2nd day and 12.6% on the 3rd day. Nearly 70% of the patient got admitted in SCCC on the same day of RT-PCR positive result, while 20% the next day of the arrival of the COVID-19 RT-PCR positive result.

Approximately 13% of the patients had at least one of the co-morbid conditions like diabetes, hypertension, and bronchial asthma, in which diabetes is higher [Table 2] 82% of the patients had symptoms, with 40% fever and 36% cough during admission for which they were treated with the Siddha medicines as per the guidelines. Nearly 4% of the admitted patients who required further medical treatment observing their clinical condition and SpO2 levels were referred to the nearby medical college hospital. While others were stable and recovered from the symptoms were discharged. During discharge they were advised further two weeks home quarantine and also provided Arokkiam Kit, which contained Amukkura chooranam tablet, Nellikkai legiyum and Kabasura kudineer for further two weeks.

**Table 1: Personal details of the COVID-19 patients admitted in SCCC, Theni district, Tamil Nadu, India, May 2021**

| Personal history       | Variables                                      | Frequency | Frequency % |
|------------------------|------------------------------------------------|-----------|-------------|
| Educational status     | Illiterate                                     | 105       | 17.9        |
|                        | Primary Education                              | 167       | 28.5        |
|                        | Higher Secondary Education                     | 109       | 18.6        |
|                        | Diploma                                        | 42        | 7.2         |
|                        | Degree and above                               | 162       | 27.8        |
| Occupational Status    | Professionals/Managers/Officials/legislator     | 54        | 9.2         |
|                        | Technicians and associate professionals        | 36        | 6.2         |
|                        | Clerks/Clerical support workers                | 27        | 4.6         |
|                        | Craft and related trade workers                | 53        | 9.1         |
|                        | Agricultural and fishery workers               | 73        | 12.5        |
|                        | Service and sales workers                      | 77        | 13.2        |
|                        | Student                                        | 85        | 14.5        |
|                        | Home maker                                     | 145       | 24.8        |
|                        | Not employed                                    | 35        | 5.9         |
| Marital status         | Married                                        | 447       | 76.4        |
|                        | Unmarried                                       | 135       | 23.1        |
|                        | Divorced                                        | 1         | 0.2         |
| Substance abuse        | Alcohol                                        | 57        | 9.7         |
|                        | Smoking                                         | 24        | 4.1         |
|                        | Tobacco chewing                                | 2         | 0.3         |

**Figure 1: Age distribution of the COVID-19 patients admitted in SCCC, Theni district, Tamil Nadu, India, May 2021**

The study demonstrated that SCCCs are better alternatives to conventional hospital facilities in managing mild, moderate symptomatic and asymptomatic COVID-19 cases. Govt of Tamil Nadu implemented SCCCs to cope with the rapidly increasing COVID-19 cases who needed isolation and monitoring. COVID-19 cases admitted to SCCCs were managed well with Siddha medicines in a stable clinical condition even though 80% of cases had symptoms of fever, cough during admission. Arokkiam kit was provided to discharged cases as a follow up medicines for maintaining their health in post-discharge.

During May 2021, the COVID-19 cases were in peak with total of 20,96,516 positive cases and 478 deaths in Tamil Nadu while in Theni district there were 36,410 positive cases. This exponential increase in COVID-19 cases in Tamil Nadu was so severe during this month, that the medical institutions were not able to handle the surge. This made moderate and severe patients had to wait at home for hospitalization due to non-availability of beds. Also there were not adequate medical resources available at the hospitals due to overload for the high-risk patients.

To handle this crisis situation, Tamil Nadu government restructured various community facilities as SCCC to cope with
the rapidly spiking number of COVID-19 positive patients who required isolation and continuous monitoring but necessarily need not to be hospitalized for management and could be maintained in a stable clinical condition. With this arrangement the tertiary care hospital beds were made available for the moderate and severe patients.

Contact tracing and isolation were vital in controlling the transmission of COVID-19 and it evidenced that 50% of the cases undergone testing within a day as soon as the appearance of any of the symptom because of intensive awareness and vigilant contact tracing carried out by the local administration. District health team identified all the positive COVID cases, adhering the protocol and guideline, directed them to the hospital or COVID care centres.

Nearly 80% of cases had symptoms which was higher in 2nd wave of COVID-19 compared to earlier wave in previous year in which more asymptomatic cases were reported. Siddha medicine had been in use for infectious diseases particularly for treating viral diseases for more than thousands of years. The vast experiences of Siddha practitioners and mode of preparations have been passed down through generations. The medicines used for treating cases in SCCC are potential in the management of COVID-19. Clinical studies conducted on Kabazura kudineer showed that it accelerated the recovery of COVID-19 when administered along with the conventional medicines. Clinical study on Vasantha kusumakaram mathirai, Thippili rasayanam and Adathodai manapagu in the symptomatic COVID-19 cases has shown accelerated recovery compared to the control group.

As there was highest spike in positive cases during this period, there was slight relaxation in the admission protocol and there was an admission of 9% in each of the age group above 60 years and below 17 years and mostly all the patients were diagnosed by RT–PCR test within 0–3 days from the onset of symptoms. Source of infection could not be traced in 62% of the admitted cases. Nearly 82% of admitted were symptomatic including 13% with comorbid conditions. Only 4% of the admitted cases were referred to higher centers for further management indicated the preparedness of SCCC in handling deteriorating patients. During the stay at SCCC, More than 90% of the patients were stable and discharged based on their clinical improvement after 10 days of Siddha treatment. They were provided with the Siddha medication (Arokkiam kit) during discharge and also advised home quarantine for further two weeks.

Siddha primary care physicians were newly exposed to encounter an epidemic during this COVID 19 mitigation, however they worked together with local public health team and ensured effective treatment in SCCC. This work helped in understanding the risks of public health problems among the Siddha primary care physicians who stood in the forefront. COVID-19 has presented in different clinical stages from asymptomatic to severe stage. The preparedness in handling the COVID cases by Siddha primary care physicians played a vital role in the functioning of SCCC. Clinical characteristics of SCCC has shown that a variety of different stages of COVID cases were treated successfully with the available resources. This clinical profiling will improve the preparedness among the Siddha primary care physicians in handling different stages of COVID cases abiding the standard guidelines released by government. As Siddha medicine is traditionally bounded with the Tamil culture, it is trusted by the communities, SCCC operations can be a safe alternative to conventional medical institutions.

Our study had few limitations. RT–PCR testing at the time discharge was not done as per the state guidelines shuttered the findings of viral shredding nature. The data collection was done during the time of admission might be exaggerated or underestimated depending on the mental wellbeing of the patient.

## Conclusion

More than 90% of admitted symptomatic COVID cases in SCCCs were treated and discharged in stable condition. In particular, this study described the demographics and clinical profiling of SCCC in Theni showed the experience gained by

### Table 2: Medical history of the COVID-19 patients admitted in SCCC, Theni district, Tamil Nadu, India, May 2021

| Medical history | Variables                  | Frequency | Frequency % |
|-----------------|----------------------------|-----------|-------------|
| COVID-19        | previously affected         | 575       | 98.3        |
| COVID-19        | RT-PCR diagnosis            | 548       | 93.7        |
| COVID-19        | CT scan                    | 37        | 6.3         |
| COVID-19 source of infection | Frontline worker | 47        | 8           |
| Symptom status  | asymptomatic                | 103       | 17.6        |
| Symptom status  | symptomatic                 | 481       | 82.2        |
| Symptom present | cold                       | 246       | 42.1        |
| Symptom present | fever                      | 236       | 40.3        |
| Symptom present | vomiting                   | 15        | 2.6         |
| Symptom present | smell loss                 | 59        | 10.1        |
| Symptom present | headache                   | 106       | 18.1        |
| Symptom present | cough                      | 214       | 36.6        |
| Symptom present | body pain                  | 166       | 28.4        |
| Symptom present | diarrhoea                  | 11        | 1.9         |
| Symptom present | taste loss                 | 49        | 8.4         |
| Symptom present | giddiness                  | 20        | 3.4         |
| Symptom present | sore throat                | 25        | 4.3         |
| Symptom present | Difficulty in breathing     | 12        | 2.1         |

CT: Computer tomography
Siddha physicians in the preparedness and mitigating COVID-19 effectively. Therefore, SCCC’s proper clinical triaging and routine monitoring, found to be a safe alternative to secondary and tertiary care hospitals for managing asymptomatic and mildly symptomatic COVID-19 patients during pandemic period.

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Conflicts of interest
There are no conflicts of interest.

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