

**STRATEGIES FOR THE IMPLEMENTATION OF
AYURVEDA IN THE PREVENTION, MITIGATION AND
REHABILITATION OF COVID-19**

“കരുതലോടെ കേരളം, കരുത്തേകാൻ ആയുർവേദം”

THE REPORT

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GOVERNMENT OF KERALA

PREFACE

The Government of Kerala is exploring all possible measures to boot up the preparedness to meet the challenges of escalation of COVID-19 into the next stage. As a part of this initiative, the Chief Minister of Kerala convened a meeting of Ayurvedic experts in the State via video conferencing and sought the intervention of Ayurveda to prevent the spread of the disease in the society. A Task Force and Committee of Experts was constituted for this purpose by the CM during the meeting itself. As a sequel to this meeting, extensive discussions were organized among the experts of various fields of Ayurveda, which culminated in the formulation of this report on Strategies for the Implementation of Ayurvedic Medicine (AM) in the Prevention, Mitigation and Rehabilitation of Covid-19, which targets the entire population of the State irrespective of the different socio-economic strata. This strategy is based on the theoretical foundations of Ayurveda and based on the experience of Ayurvedic experts with decades of clinical practice.

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EXECUTIVE SUMMARY

Amidst concerns of community transmission of COVID-19, the time is ripe now to enhance preparedness in anticipation of community spread of the disease by mobilizing all available human resources, infrastructure and medical expertise. It is reported that in China, Traditional Chinese Medicine was integrated into the protocol for clinical management of COVID-19. Being home to the tradition of Ayurveda with an unbroken evolutionary history of several thousands of years in the Indian sub-continent, it is most appropriate that Kerala should launch the first preventive program in traditional medicine for COVID-19 in the world along with strategies for prevention and mitigation of the disease.

With this objective in mind, the Chief Minister of Kerala convened a meeting of Ayurvedic experts in the State via video conferencing and sought the intervention of Ayurveda to prevent the spread of the disease in the society. A Task Force was constituted from the Committee of Experts for this purpose by the CM during the meeting itself. As a sequel to this meeting, extensive

discussions were organized among the experts of various fields of Ayurveda, which culminated in the formulation of this interim strategy to provide a road map for implementation of Prevention, Mitigation and Rehabilitation Strategies of COVID-19, which targets the entire population of the State irrespective of the different socio-economic strata. This strategy is based on the theoretical foundations of Ayurveda and based on the experience of Ayurvedic experts with decades of clinical practice. The document gives the directives for setting up an organisational frame work harnessing the human resources and infrastructure facilities available in both public and private sectors for timely and optimal response from the Ayurveda departments of the state. It also discusses an action plan on 'TOT' mode for capacity building and skill development of human resources. The importance of establishing inevitable links with Public Health Administrative system of the state, local self-government departments, various AYUSH departments, research institutes, ASHA workers, public media as well as the need for public-private partnership is emphasised.

The prevention strategy targets six groups of people depending on risk of contracting COVID-19 and severe outcomes. It targets individual, family and society, comprising of nonpharmacological and pharmacological interventions such as diet, hygiene and activities of daily living and minimal herbal based therapies. The mitigation strategy identifies stages where Ayurvedic pharmacological interventions can be administered with the aim of managing symptoms as well as preventing progression of disease to stages of complications. The rehabilitation strategy focuses on residual challenges like compromised lung function with Ayurvedic pharmacological and non-pharmacological interventions.

For the execution of this program, State Ayurveda COVID-19 Response Cell (SACRC), Regional Ayurvedic COVID-19 Response Cell (RACRC) and District Ayurveda COVID-19 Response Cell (DACRC) will be constituted. The basic implementation units of this strategy will be the Ayur Raksha Clinics and every alternative dispensary under ISM is recommended to be utilised for this purpose.

The provisioning of funding and other resources needed for implementation of this strategy is also discussed.

INTRODUCTION

The report of the WHO-China Joint Mission on Corona Virus Disease 2019 (COVID-19) during 16-24 February, 2020 has clearly reported the widespread use of Traditional Chinese Medicine as a part of National Clinical Guidelines (edition 6) for the management of COVID-19 patients. The epidemic period in china has therefore witnessed a series of clinical evaluations of such integrative practices in the management of COVID-19 incorporating TCM as one of the components.

Historically, TCM has been an integral part of China's attempt to fight epidemics like SARS and H₁N₁. Several studies in this context have shown the effectiveness of TCM application in the form of herbal powders, decoctions, fumigations and others, which have yielded statistically significant as well as clinically plausible results in the prevention and mitigation of these epidemics. 23 out of 31 provinces in Main land China, which include the Wuhan region that happened to be the origin of the novel corona virus have officially recognised TCM components in their management strategy against COVID-19.

TCM expert from the locality had thoroughly discussed and finalised the TCM component by considering the climatic conditions and symptomatology of the disease that has appeared in the region. The TCM protocol comprised of 1-10 formulae that utilised 54 different plants in varying combinations delivered through TCM doctors and often through specialised facilities. The Hubei province alone witnessed over 3100 medical staff of TCM working in rescue operations and treatment of patients. The administration of specific

TCM products were found to decrease the average length of hospital stay by 22% in patients with COVID 19 symptoms. The recovery from elevated body temperature and disappearance of clinical symptoms were reduced respectively by 1.7 and 2.2 days. There was a significant reduction in the rate of mild to severe cases by 27.4% and the clinical cure rate in laboratory diagnosed cases of COVID 19 was 90%. Of late, China has extended their resources, technical information and the above-mentioned management strategies for countering the infections to many countries including the gravely affected Italy.

The TCM and AM are considered to be the largest traditional medical systems that together has a recognised presence in almost all the countries in the globe. These systems share comparable philosophical and theoretical backgrounds. AM has the largest biodiversity information relating health of more than 1600 plants. With the presence of Western Ghats with tropical temperate like climatic conditions, Kerala can offer several herbal remedies with diverse therapeutic potentials at the disposal of AM

In the absence of effective anti-viral medicines against SARS-CoV-2, the clinical approach is focused on symptomatic management and supportive care addressing underlying comorbidities. Although around 80% of the COVID-19 cases are mild to moderate and self-limiting, a sudden spike in the number of patients can overwhelm the health care system. Severe clinical presentations of the COVID-19 demand intensive care and life saving interventions including use of ventilators. In this scenario, there exists a window of opportunity for the clinical management of persons exposed to the corona virus as well as patients with uncomplicated

symptoms with and without laboratory diagnosed COVID 19 with the use of AM. Rehabilitation of COVID-19 patients in the stage of convalescence is another important area which can be satisfactorily addressed by the use of AM.

Although the transmission dynamics of the diseases in the state is well regulated with current health care measures of the state, larger remigration and high population density are threatening the control measures. Readiness and preparedness are thus imperative for reducing local transmission and also to prevent the disease from growing into an epidemic in the state. Kerala is home to the tradition of Ayurveda with an unbroken evolutionary history of several thousands of years in the Indian sub-continent. It thus becomes most appropriate that Kerala should launch the first preventive program in traditional medicine for COVID-19 in the world along with strategies for mitigation and rehabilitation to deal with the disease.

Objectives

The report is intended to provide a road map for implementing the Ayurveda in the Prevention, Mitigation and Rehabilitation strategies of COVID-19 in Kerala. The document also delivers the necessary directives on setting up an organisational frame work for the Ayurvedic Departments to respond in a timely and adequate manner to health emergencies by effectively utilising the human resources and infrastructure facilities available in both the public and private sectors.

METHODOLOGY OF WORK

The initiative to formulate this report was the outcome of the video conference meeting organised by the Honourable Chief minister of Kerala (CM) on 30th March 2020 with the experts from Ayurveda. Thirty-nine experts representing academicians, clinicians, researchers and industrialists had participated in the conference at seven district headquarters and had shared their valuable suggestions (details annexed). A task force was announced by the CM himself for the preparation of a report for the effective utilisation of AM in the prevention, mitigation and rehabilitation strategies of

COVID-19. The task force conducted online meetings and finalised the plan of action for the preparation of the report that includes identification of the domains of data collection such as current status as well as various dimensions and components of involvement of Ayurvedic system in the management of the pandemic, Ayurvedic modalities which can be utilised for various management strategies of COVID-19 and framework and method of implementation of such strategies. Experienced clinicians, reputed academicians, major institutions and all the departments of Ayurveda in Kerala were contacted and suggestions were pooled through interviews and structured forms. A team of doctors consolidated the propositions and submitted the same before the task force, which has been scrutinised and summarised in various parts of this report.

RECOMMENDATIONS

Based on the diverse inputs and data received, the recommendations of the task force entrusted for the preparation of the report are as follows.

Utilisation of the Human Resources and Infrastructure facilities under Ayurveda medical system in Kerala

The COVID-19 infections in Kerala has now reached a sizable number with all available health facilities and the state itself is in a state of extremely high alert. The increase in the number of COVID-19 cases in Kerala need to be managed by the effective use of all available skilled human resources and facilities ready at the disposal of the state government for isolation/observation/quarantine/management of COVID cases, if necessary. Some of these institutions can also act as clearing houses for services and information, regional coordinating centres and storage houses of essential commodities.

The infrastructure facilities available with the Ayurveda system can be doubled up, if necessary, to accommodate the rising cases of COVID-19 infections. Appropriate Ayurveda facilities in this regard may be identified and suitably refabricated to meet the current standards of care. As of now, only a single corona care facility is functioning under the department of AYUSH, and some hospitals have been identified as potential

centres of corona care. Both public as well as private hospital facilities shall be utilised for the above purposes. There are 17 Ayurveda medical colleges in Kerala with moderate infrastructure facilities as well as minimal provisions for infection control and management, which can be improved substantially with proper directives from designated authorities. *(The details of infrastructure facilities available in the public and private sector is annexed.)*

Urgent capacity building

The current Ayurveda system in Kerala operates at three levels, the primary level facilities reaching every panchayat in Kerala, the secondary level addressed by the district level hospitals and Ayurveda Medical Colleges with tertiary care hospitals reaching all most all districts. In the instance of a massive outbreak, these facilities and human resources can be made readily available by providing the required training on Standard Operating Procedures as defined by the Department of Health. The trained personnel can be utilised for community awareness programmes, case identification and reporting, patient education and patient care. The utilisation of

Ayurveda doctors from all the above-mentioned levels currently is minimal, which need to be improved urgently by providing them with necessary information and skill for infection prevention and control, use of protective equipment, utilisation of standard case proformas and necessary tools and also in other relevant aspects.

Vast resources in this regard available with the online database accessible from the web portal of World Health Organisation can be used for initial training purposes. Hands on training in COVID-19 patient handling shall be provided by the department of Health through District Medical officers. The above skill development activities shall also be extended to doctors of Ayurveda working in the private sector. The training shall be imparted on a TOT mode and the emerging trainers in Ayurveda in fact imparting the capacity to the primary level doctors of Ayurveda. The list of participants for the TOT shall be identified by the DMO of Ayurveda and shall organise the subsequent training. It is desirable that the selected participants at any level shall complete the WHO courses rolled out in this regard, prior to the hands-on training.

Creating inevitable links

For the effective fight against COVID-19 certain inevitable links need to be established urgently. The administrative framework of Ayurveda medical system in Kerala shall have a cross link with the public health administrative system of the state, which is necessary for coordinating the efforts in prevention, mitigation and rehabilitation strategies of the pandemic. Cross linking also shall be established with Local Self Government Departments (LSGD) and its associates for the effective delivery of the strategies.

Private Public Participatory efforts are highly essential for the effective execution of the strategies of Ayurveda in the current scenario. The department of Indian Systems of Medicine, the department of Ayurveda Medical Education, drug control department, National AYUSH mission, Ayurveda medicine manufacturers, Ayurvedic hospitals in the private sector and the professional organisations active in the field of Ayurveda shall be incorporated as the stake holders in the fight against COVID-19. Major research institutions of the state, various institutions of the Government of India like

CSIR, and TBGRI shall be incorporated into the network for ensuring the necessary research input and backup.

The grassroot level components of the state public health system comprising of ASHA workers and health inspectors shall also be made available for the effective expedition of Ayurvedic strategies against COVID-19. Appropriate use of government platforms, public media and social media shall be ensured for assuring the propagation of right information at the right moment to the public.

Ayurvedic Strategies for Prevention in COVID-19

Preventive and promotive health is an integral component of the AM. The guiding principle of the current strategy is the utilisation of the locally available resources in and around every household across the state. The details of the operation have been mentioned in the implementation framework recommended in the report. The preventive strategies of the AM shall comprise of pharmacological and nonpharmacological interventions such as diet, hygiene and activities of daily living (ADL) and minimal herbal drug-based therapies. Available reports indicate higher mortality rate among the aged

population in all the affected countries. Italy having a geriatric population of around 30 percent being devastated heavily with a very high case fatality rate is a testimony to the fact. Kerala having the highest geriatric population (12.5%) among all states in India, is also threatened seriously by the adverse possibilities of COVID-19 menace.

Ayurveda with its established credentials in geriatric care definitely has an advantage in protecting the geriatric population in the current scenario.

“Sukhayushyam – a caring touch to the tired hands”

a programme envisaging physical, psychological and emotional support to the old age population in Kerala shall be implemented. The components involve providing standard Ayurvedic geriatric health care at existing old age homes as well as at specific geriatric care centres to be set up as a part of COVID prevention among the old age. Specific AM prevention strategies shall be implemented without hampering the ongoing management of their existing comorbidities. Ensuring the robustness of the old age population can definitely

bring down the CFR in an unfortunate event of massive community spread of COVID-19.

Ayurveda which is primarily built up on the principles of holism lays greater emphasis on the host and its environment rather than on the agents. Therefore, the focus here is on the stabilization and strengthening of the host responses to the environment and the agents. The preventive strategy of AM is centred around the specificities of the individual, family and the society. Therefore, the success of the AM preventive modalities depends upon the dedicated involvement of the individuals and the families. Modifications at the individual level focusing on disciplined and hygienic activities of daily living help improve general health and disease resistance. When coming to the family, healthy diet and lifestyle observed reinforces the further strengthening of the individual benefits achieved. The satisfactory fulfilment of the two may ensure a lowered impact of the COVID-19 menace in the community. The AM prevention strategies are envisaged by considering the following levels

1. General public with no exposure under lockdown up to the age of 60
2. Persons exposed (quarantined/isolated) or at risk of exposure to SARS-CoV-2 with comorbidities
3. Persons exposed (quarantined/isolated) or at risk of exposure to SARS-CoV-2 without comorbidities
4. High risk individuals such as health professionals and health workers currently engaged in corona care with comorbidities
5. High risk individuals such as health professionals and health workers currently engaged in corona care without comorbidities
6. Special care for persons aged 60 and above with comorbidities
7. Special care for persons aged 60 and above without comorbidities

(The preventive protocol is annexed by considering the above levels)

The Department of *Swasthavrutha* at various Government Ayurveda colleges shall be entrusted with the responsibility of framing and popularising various

implementation programmes like IEC materials, self-help videos by utilising the above recommended protocols. Yoga and Naturopathy medical system under the department of ISM may also give sufficient inputs in this regard.

Kerala's non-communicable disease burden is higher compared to other parts of the country. Sedentary lifestyle resultant to the prolonged lock down may further deteriorate the pre-existing ailments, making them more vulnerable to COVID-19. The chances of a long-standing sequel to the situation also may not be ruled out. The government shall therefore urgently promote specific yoga based simple physical exercise as well as pranayama based breathing exercise together lasting for at least 20 minutes a day for improving physical health, psychological health and lung compliance. The proposed module shall be actively propagated as a specific programme named "**Swasthya**" through various media platforms. *The real execution of Swasthya envisages the entire Kerala state vigorously embracing a heightened level of coordinated physical activity for*

a stipulated time every day in the campaign against COVID-19.

Ayurvedic Strategies for Mitigation in COVID-19

The reports of the successful utilisation of TCM in the mitigation of COVID-19 has given rise to a new found interest among the traditional medicine fraternity across the globe in its potential role in addressing similar pandemics. Though there are no treatments currently available for the pandemic that was produced due to the novel corona virus, the managements based on symptoms and comorbidities, have of course reduced the number of mortalities considerably across the globe. There is a great potential to reduce the burden of COVID-19 on the health care system by the application of AM in patients with uncomplicated symptoms with and without laboratory diagnosed COVID 19.

In the meantime, evaluating the successful integration of TCM into the management strategies of COVID-19, similar protocols may be effectively developed by integrating AM into existing management

protocol of uncomplicated COVID-19 cases with or without positive laboratory diagnosis, which currently depends largely on home isolation and supportive care only. Scientific utilisation of AM may provide uncomplicated COVID-19 cases with early recovery and may prevent them from developing further complications such as red flag signs. It may also reduce the Case Fatality Rate of the disease. The initial therapeutic intervention with TAM shall be aimed at addressing uncomplicated COVID-19 cases (Category A patients in the official classification aged below 60 years).

The objective of the intervention would be to contain and mitigate the condition and to reduce the chance of progression from Category A to Category B or Category C, which may also probably reflect in the case fatality rate of the disease (A detailed therapeutic protocol mitigation has been annexed). The implementation of AM component in this regard shall be in consensus with the existing management strategies, and it also should not hamper the existing flow of services to the population. Up on the evaluation of the findings, the strategies for mitigation in the subsequent categories of the disease may

also be undertaken in the right earnest. The implementation of the AM mitigation strategy shall be undertaken at the regional and district level facilities under the strict monitoring of the state level coordination cell (see the implementation framework for details). Concerted efforts shall be undertaken for close alignment with the department of health in the execution of the same. Dialogues and discussions in this regard shall immediately be initiated for interdisciplinary coordination, integration and documentation. The guidelines for the AM strategies for mitigation shall be developed in close consultation with the experts of the conventional medical system as well as public health personals.

The quality, safety and efficacy of the pharmacological interventions must closely be monitored by a multidisciplinary team of experts and stringent steps shall be taken to restrict the administration of curative and rehabilitative therapies of AM to COVID-19 contacts and patients by authorised personals and centres only. A state wide independent ethical committee shall be constituted, which shall be responsible for approving

specific therapeutic approaches of any sort. The ethical committee in place under the department of Indian Systems of Medicine or that are available in the Government Ayurveda medical colleges shall also be assigned the duty.

Ayurvedic Strategies for rehabilitation in COVID-19 (recovery phase of the disease)

The pandemic storm of COVID-19 has devastated the social, medical and economic backbone of every society that has been in its course. Rapid recuperation at the recovery phase of the disease is therefore, an indispensable element in bringing the community back in its rail. TCM has demonstrated its potential in achieving early recovery in the convalescence of COVID-19 patients. This scenario presents with an opportunity for the utilisation of AM strategies in the management of convalescence of the COVID-19 in the state facilitating the rapid recovery into the normal lives (Appropriate strategies in this direction have been framed and annexed).

The data management system

It has not been the lack of clinical endeavour or resources in the earlier community outbreaks of certain diseases like chikungunya and dengue fever that has hindered the prospects of the science. Rather it was the lack of enthusiasm and mechanism in the systematic collection, processing and dissemination of the evidences that has been the bane of the science. In the existing scenario of the evidence-based medicine, systematic collection scientific evaluation and proper dissemination of the data is highly imperative. A systematic data collection mechanism has been planned to be put in place at all levels of implementation of AM strategies for COVID-19. The School of Ayurveda under the Kerala University of Health Sciences shall be made responsible for such data management at all levels. The centre shall urgently be entrusted to develop necessary plans for such massive collection and management of data. The regional centres of the implementation frame work shall coordinate with the school of Ayurveda in this aspect.

The implementation framework

The entire framework of the strategies of AM management of COVID-19 shall function under the direct monitoring of the Department of AYUSH. The entire existing infrastructure facilities and human resources under the department of AYUSH shall be fully utilised without accruing any additional financial burden to the exchequer for the formation of the same. The above administrative structure is intended only for the implementation of the coordinated efforts against COVID-19 incorporating various stake holders as well as for data clearance purposes. The state level coordinator shall coordinate the entire operations at the state level. There shall be three regional coordinators and 14 district level coordinators for the functioning at the regional and district levels.

The organisational structure at each level are as follows.

State level Ayurveda Covid-19 Response Cell (SACRC)

The SACRC shall oversee the state-wise scientific implementation of the Ayurveda strategies proposed for the management of COVID-19 in Kerala. This cell is

responsible for framing appropriate workplan and defining functionalities of the implementation system. The SACRC invariably serve as an interface linking the Ayurvedic system with the public health mechanism of the state in appropriate levels. The headquarters of the SACRC shall be based at an appropriate facility in Thiruvananthapuram.

Members (total 13 members):

- Secretary, Department of AYUSH
- Director, Department of Ayurveda Medical Education
- Director, department of Indian Systems of Medicine
- State Programme Manager, National AYUSH Mission
- Drug regulatory authority for ASU drugs, Kerala
- State Coordinator of the SACRC (Nominated by the government of Kerala)
- One representative from the major professional organisation of Ayurveda doctors in Kerala
- Managing Director, *Oushadhi*

- Two Senior Professors from Government Ayurveda Colleges in Kerala
- One senior doctor from Indian systems of medicine
- Two eminent senior Ayurvedic Clinicians

Regional Ayurveda COVID-19 Response Cell (RACRC)

The role of the RACRC shall be to integrate the directives of the SACRC to the DACRC from time to time as well as to ensure the scientific implementation, data collection and documentation of the strategies undertaken. The RACRC shall be based at the three government Ayurveda Medical Colleges located at Thiruvananthapuram, Ernakulam and Kannur respectively catering to the Southern Kerala, Central Kerala and Northern Kerala.

Members (Nine members):

- Principal/Superintendent of the Government Ayurveda College in the region
- District Medical Officer (Ayurveda) of the region
- Regional coordinator (Nominated by the Government of Kerala)

- District Programme Manager of National AYUSH mission or CMO (Ayurveda)
- One Senior Professors from Government Ayurveda Colleges in the region
- One senior doctor from Indian systems of medicine in the region
- One representative from the major professional organisation of Ayurveda doctors in Kerala
- One member of the Ayurvedic industry from the region
- One senior eminent clinical practitioner from the region

District Ayurveda COVID-19 Response Cell (DACRC)

The District level Ayurveda COVID-19 response cell (DACRC) shall be entrusted with the responsibility of charting out the appropriate preventive/therapeutic options regionally on the basis of the clinical presentation of the pandemic there, the availability of resources and the clinical discretion of the DACRC. They shall also ensure the necessary administrative collaboration with the concerned government departments for the

successful implementation of the programme. They shall also serve as the direct link of the cell with the public health mechanism in the district.

Members (Nine members)

- District Medical Officer (Ayurveda) or CMO (Ayurveda)
- District coordinator (Nominated by the Government of Kerala)
- District Programme Manager of National AYUSH mission or CMO (Ayurveda)
- One senior doctor from Indian systems of medicine in the district
- One senior faculty from the nearest Ayurveda College
- One representative from the major professional organisation of Ayurveda doctors in Kerala
- Two senior eminent clinical practitioners from the district
- Health Standing Committee chairman from the District Panchayat

Ayur Raksha Clinics (ASC)

The *Ayur Raksha Clinics* are the basic implementational units of the SACRC. Every dispensary under the Indian systems of medicines shall be utilised and renamed as such for the purpose. They shall be responsible for the grass root level implementation of AM preventive component. They shall operate in tandem with private practitioners, LSGD, public health mechanisms and professional organisations in the locality. The clinic also shall coordinate with ASHA workers and other health volunteers for the purpose.

Niramaya the virtual health care system

India has imposed a complete lockdown to facilitate the preventive efforts against COVID 19 pandemic, which is now prevalent in all countries. As a part of the restrictions to tackle the menace, there has been instructions to minimise the patient inflow and subsequent admission and care in health care facilities other than emergency conditions. Consequently, the majority of the patients who were under care in Ayurveda Colleges had to be discharged and many more are about to be discharged soon after the completion of their

necessary treatment course. Moreover, considerable proportion of the population specifically seeking specialty Ayurvedic care are now being refrained from availing the necessary care owing to the indispensable situations. The primary objective of the programme is to ensure the uninterrupted provisions of tertiary Ayurvedic care to patients as well as to the needy public through an outreach programme on a virtual outpatient platform named *Niramaya*.

Niramaya shall serve as a virtual platform extending the tertiary Ayurvedic Health Care Services that has been on offer from Ayurvedic medical colleges. It includes continuing support to the patients discharged from Ayurveda College hospitals, offering specific directives to the patients seeking Ayurvedic specialty care, providing necessary health care advises to the population and psychological support to patient under isolation/quarantine. It shall also serve as an information helpdesk to support the ongoing efforts of the state government in the containment of the COVID 19 pandemic. The platform of *Niramaya* shall also be

effectively utilised for the prompt implementation of Ayurvedic preventive strategies among the public.

[The protocols suggested here shall not be deemed conclusive in its nature. Nevertheless, it shall be the prerogative of the SACRC to declare the timely modification, if any, in accordance to the evolving clinical situation as well as in response to the national level guidelines declared by the central AYUSH ministry from time to time].

Funding and other resources

A proportionate share of the central as well as the state funds set aside as a part of the announced financial packages to counter the pandemic shall be pooled to the finance the operation of the AM strategies. The National AYUSH Mission shall be assigned the responsibility of management and timely disbursement of the required fund. There shall be provisions for receiving financial assistance from the various stake holders as per the regulations of the state. Financial assistance for the data management system shall also be obtained from the various central and state level research funding agencies.

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Annexures – General

1. List of members of the Covid -19 Ayurveda Task Force
2. List of members of the Drafting committee
3. List of members of the Expert committee
4. Minutes of the CM video conferencing
5. Infrastructure facilities and Human Resources available with Ayurveda Medical System in Kerala

Annexures – Technical

1. Prevention Non-Pharmacological Interventions
2. Convalescent Period Care
3. High risk health care professionals and other field staff working with COVID - 19 patients (without comorbidities*)
4. General Guidelines for People with Comorbidities I
5. General Guidelines for People with Comorbidities II
6. General Guidelines for People with Comorbidities III
7. General Guidelines for People with Comorbidities IV
8. High risk health care professionals and other field staff working with corona patients (with comorbidities*)
9. Ministry of AYUSH COVID – 19 Prevention Guidelines
10. Therapeutic Recommendations
11. Preventive protocol and submission from Siddha system of medicine.

Annexures – General

Annexure 1 - List of members of the COVID -19 Ayurveda Task Force

Padmasree Dr.P.R Krishnakumar (Special Invitee)	Chairman and Managing Director Arya Vaidya Pharmacy (Coimbatore) Limited
Dr. G. Geetha Krishnan (Special Invitee)	Technical Officer, TCI/SDS, Room 4076, Main building, HQ, World Health Organisation,
Padmasree Dr. J Hareendran Nair	Founder and Managing Director Pankaja Kasthuri Group.
Dr. P.M Varier	Managing Trustee and Chief Physician, Vaidyaratnam P.S.Varier's Arya Vaidya Sala , Kottakkal
Dr. P. Rammanohar	Research Director, Amrita School of Ayurveda, Clappana PO, Vallikkavu, Kollam
Dr M Prasad	Principal & Medical Superintendent Ashtangam Ayurveda Chikitsalayam & Vidyapeedham, Palakkad
Dr. K.G. Raveendran	Medical Director Arya Vaidya Pharmacy (Coimbatore) Limited
Sri. Sukumaran Vaidyar	Siddha Practitioner, Ernakulam
Dr. Rajmohan. V(Convener)	Assistant Professor, Department of Rasasastra and Bhaishajya Kalpana, Government Ayurveda College, Kannur

Annexure 2 - List of members of the Drafting committee

Dr. Rajmohan. V (Convener)

Assistant Professor,
Department of Rasasastra and Bhaishajya Kalpana,
Government Ayurveda College, Kannur

Dr. P. Rammanohar

Research Director, Amrita School of Ayurveda,
Clappana PO, Vallikkavu, Kollam

Dr M.Prasad

Principal & Medical Superintendent
Ashtangam Ayurveda Chikitsalayam & Vidyapeedham
Vavanoor, KoottanadPalakkad

Annexure 3 - List of members of the Expert committee

Sl No	Name	Designation
1	Dr. A Nalinakshan	Pro-Vice Chancellor, KUHS
2	Dr. P.K.Mohanlal	Former Director, Ayurveda Medical Education, Kerala
3	Dr. Jollykutty Eapen	Director, Ayurveda Medical Education
4	Dr. Priya K.S	Director, Indian Systems of Medicine, Kerala
5	Dr. M.R Vasudevan Namboothiri	Former Director, Ayurveda Medical Education
6	Dr. P Sankaran Kutty	Former Director, Ayurveda Medical Education
7	Dr. Smart P John	Deputy Drugs Controller Ayurveda
8	Dr. C.S Sivakumar	Professor, Government Ayurveda College, Thiruvananthapuram
9	Dr. Reghunathan Nair	Superintendent, Government Ayurveda College Hospital, Thiruvananthapuram
10	Padmasree Dr. J. Hareendran Nair	Founder and Managing Director, Pankaja Kasthuri Group
11	Dr. M. Subash	State Project Manager, National AYUSH Mission
12	Dr Ananad S	Assistant Professor, Govt. Ayurveda College, Thiruvananthapuram
13	Dr. G. Syamakrishnan	Chief Medical Officer, Indian Systems of Medicine, Kerala
14	Dr. K V Radhakrishnan	Principal Scientist,

		CSIR-NIIST, Thiruvananthapuram
15	Dr Abhil Mohan	All India Siddha Medical Association
16	Dr.Jayadevan C V	Principal, VPSV Ayurveda College, Kottakkal
17	Dr.P.M.Varier	Managing Trustee and Chief Physician, Vaidyaratnam P.S.Varier's Arya Vaidya Sala , Kottakkal
18	Dr.A.K.Manoj	Registrar, KUHS (Professor, VPSV Ayurveda College, Kottakkal)
19	Dr.V.G.Udayakuamr	Former CCIM Member
20	Dr.M.Prasad	Principal & Medical Superintendent Ashtangam Ayurveda Chikitsalayam & Vidyapeedham
21	Dr. T.S Sreekumar	Rtd. Professor, VAC Ayurveda College, Ollur
22	Dr. K G Viswanathan	Rtd. Principal, VAC Ayurveda College, Ollur
23	Dr.Sheela Karalam	Rtd. DMO ISM, Thrissur
24	Dr.Jose T Paikada	SeniorMedicalOfficer,IndianSystems of Medicine, Thrissur
25	Dr. D Ramanathan	Ayurveda Medicine Manufacturers of India
26	Dr E T Neelakandhan Mooss	Director, Vaidyaratnam oushadhasala Ollur, thrissur
27	Dr Rishikumar Namboodiri	Retd DMO(ISM Kerala) Vaidyamadham Vaidyasala and Nursing Home
28	Dr.Sadath Dinakar	General Secretary, Ayurveda Medical Education of India
29	Dr.T.D.Sreekumar	Professor, Govt Ayurveda College, Thiruvananthapuram

30	Sukumaran Vaidyar	Siddha Practitioner, Ernakulam
31	Dr Ajaya Kumar	Ernakulam
32	Dr. K.Murali	Superintendent, Govt Ayurveda College, Tripunithura
33	Dr K G Raveendran	Medical Director Arya Vaidya Pharmacy (Coimbatore) Limited
34	Dr.Rammanohar	Research Head, Amrita Ayurveda College, Kollam
35	Dr.Rajmohan V	Assistant Professor, Government Ayurveda College, Kannur (Convenor COVID – 19 Ayurveda Task Force)

Annexure 4 - Minutes of the CM video conferencing

Hon'ble Chief Minister held a Video Conference with expert doctors of Ayurvedic sector today morning at 11 A.M. Hon'ble Minister for Health & Family Welfare, Chief Secretary, Secretary to Chief Minister and Secretary (Ayush) attended the Video Conference.

The following the Ayurvedic experts participated in the video–conference and gave valuable suggestions from the different districts.

1. Padmasree Dr. P.K. Krishnakumar (Coimbatore)
2. Dr. P.M. Varrier, Managing Trustee, Kottakkal Arya Vidayasala, Malappuram
3. Dr. K.G. Ravindran, Palakkad
4. Dr. J. Hareendran Nair, Pankaja Kasthuri
5. Dr. Neelakanthan Moose, Vaidyaratnam
6. Sukumaran Vaidyar, Ernakulam
7. Dr. Hrushikumar Nampoothiri, Vaidyamathom
8. Dr. P.K. Mohanlal, former Director, Ayurveda Medical Education
9. Dr. M. Prasad, Principal, Ashtangam Ayurveda College
10. Dr. Rajmohan. V., Associate Professor, Ayurveda College, Kannur
11. Dr. Ram Manohar, Research Head, Amrita Ayurveda College, Kollam
12. Dr. Priya, Director, Indian Systems of Medicine
13. Dr. M.R. Vasudevan Namboothiri, Director, Ayurveda Medical Education (Rtd)
14. Dr. Sadath Dinakar, General Secretary, Ayurveda Medical Education of India
15. Dr. Murali. K.

16. Dr. K.V. Radhakrishnan, Principal Scientist, CSIR-NIIST, Tvpm

17. Dr. D. Ramanathan, Ayurveda Medicine Manufacturers of India

The Hon'ble Chief Minister opening remarks in his gave an outline about the measures taken by the state government to contain the spread of COVID-19. He emphasised the need for continuing to maintain social distancing and the requirement for breaking the chain campaign. The Hon'ble Chief Minister requested the experts from the Ayurveda sector to study whether there is a rationale for the use of Ayurvedic medicines in preventing the spread of COVID-19; whether Ayurvedic preparation can be used for those who have been cured of COVID-19. He also requested that to assess the precautions to be taken when Ayurveda medicines with other pre-existing diseases given to people.

The experts who took part in the discussions observed that there are five categories of population:

- i, General public who have not been exposed to the virus
- ii. People who are under quarantine (under observation) people who have been exposed to COVID-19 patients)
- iii. People with mild infections (symptomatic - mild)
- iv. People who have been cured of COVID-19 and are disease free now.
- v. health workers, police personnel and field staff, who stand the risk of contracting the infection.

Regarding the preventive strategy there was general discussion that fumigation and use of preventive medicines containing Ayurveda medicine would be useful. However only studies can determine whether Ayurveda medicines have potential for treatment of COVID patients. Further the efficacy of Ayurveda medicines in post of corona rehabilitation phase also needs to be studied.

**Annexure 5 - Infrastructure facilities and Human Resources available with
Ayurveda Medical System in Kerala**

Sl No	District	Beds allotted for Covid Care	Available Beds	Doctors	PG Scholars	House Surgeons	Lab Technicians	Nurses
1	Thiruvananthapuram	164	290	244	209	50	19	115
2	Kollam	25	165	130	0	0	6	36
3	Pathanamthitta	25	125	63	0	0	1	16
4	Alappuzha	0	210	80	0	0	1	24
5	Kottayam	0	180	88	0	0	2	32
6	Idukki	0	220	96	0	0	1	21
7	Ernakulam	112	235	297	99	46	5	58
8	Thrissur	50	303	159	12	49	2	51
9	Palakkadu	0	322	192	0	59	4	42
10	Malappuram	50	200	197	84	47	4	41
11	Kozhikkode	0	220	109	0	0	1	28
12	Wayanad	0	170	28	0	0	1	18
13	Kannur	50	361	226	50	90	7	69
14	Kasargod	25	120	48	0	0	1	18
	Total	501	3121	1957	454	341	55	569

District wise Private Ayurveda Hospitals

SI No	District	Total No of Hospitals	Total Bed strength	Remarks
1	Kasargod	4	100	
2	Kannur	15	220	
3	Waynad	6	60	
4	Kozhikkode	22	370	* KMCT medical College Hospital
5	Malappuram	30	734	*Kottakkal AVS
6	Palakkad	25	300	*Ashtangam Medical College Hospital
7	Thrissur	35	600	*Vaidyarathnam , PNNM Hospitals
8	Eranakulam	40	1000	*Nangelil Medical College Hospital
9	Idukki	6	160	
10	Kottayam	20	300	
11	Pathanamthitta	10	150	
12	Alappuzha	25	300	
13	Kollam	30	340	
14	Thiruvananthapuram	35	600	*Pankaja kashuri Medical College Hospital

Annexures – Technical

Annexure 1

Guidelines for Healthy People

Non Pharmacological Interventions

Diet

- a. Food: The lockdown reduces physical activity and at the same time can induce craving for food. It is important to refrain from overeating and especially indulgence in snacking and junk food. Here are some general guidelines:
- Eat only when you are hungry
 - Avoid frequent snacking just to while away time. Snacks may be used only if you are really hungry. Dry fruits, homemade chips, boiled banana etc. are the options to select from.
 - Reduce the quantity to $\frac{3}{4}$ or $\frac{1}{2}$ of what you take on an active normal day.
 - Rice gruel (Kanji) at least once a day is an ideal option
 - Avoid or restrict the use of non-vegetarian food.
 - Try adding $\frac{1}{4}$ teaspoon of dry ginger powder while cooking the rice. This will aid digestion. Good gut is the foundation of good health.
 - ‘Chammanthi’ made of gooseberry (Nellikka) and ginger (inchi) can be a healthy and tasty recipe
 - In curry, pastries, snacks, tiffin, soups, wherever possible, use green gram (cheru payar) liberally.
 - Minimize the use of black gram (uzhunnu).
 - Include locally available vegetables and fruits in the daily menu as per the availability. Bananas, Mangoes, Jackfruit, Guavas and other seasonal fruits available in our villages have good nutritional value. Use them according to one’s digestive capacity. .
 - Avoid pickles, hot spicy foods, and garam masala.
- b. Beverages:

- The water for drinking may be converted into an excellent medicine by some simple techniques. See one example: boil the water with comfortable amounts of dry ginger, coriander seeds (malli), thulasi leaves, muthanga, panikkoorkayila, ayamodakam (ajwain seeds), and turmeric. The quantities need not be that specific. Make it a tasty chukkuvellam. All members of the family can quench their thirst with this.
- Drink tea and coffee, the popular beverages of Kerala, sparingly during the lockdown. There are reports of sleeplessness, hyperacidity, heartburn and other similar issues caused by excessive use of tea and coffee.
- ‘Chukkukaappi’ may be a safer alternative, which is a simple digestive and medicinal beverage. Also try similar drinks like thulasikkaappi, mallikkaappi etc.
- Those who are familiar with diluted milk, or milk as such, try it with a piece of dry ginger (chukku) and a pinch of turmeric powder while boiling it. It is more helpful to improve the respiratory health. Goat’s milk has an edge over cow’s milk in this regard.
- Sarbath prepared out of nannari/naruneendi is a tasty and healthy option for healthy persons, but don’t prepare with ice water.
- Diluted buttermilk (sambharam) with some salt, ginger and curry leaves is an exceptionally healthy drink. Buttermilk boiled with turmeric, dry ginger and curry leave (kaachiya moru) can keep the digestive tract healthy and smooth. This was a panacea of our ancestors.
- Avoid Curd.
- Avoid refrigerated water. It can invite throat infection. Please remember that sore throat of any sort may be suspected as an initial presentation of COVID. Don’t jeopardize the health status of your respiratory tract.
- Don’t use carbonated and alcoholic beverages of any sort.

Personal hygiene and Activities of daily living

- Go to the bed early at night and get up early in the morning. Sound sleep is an excellent tonic for the body and mind.

- Don't opt to have a nap during daytime. Excessive sleeping is a good reason for weight gain.
- Don't use an air-conditioner. Keep the windows open and the rooms properly ventilated. If at all using an AC, never set temperature to below 25 degrees. When you use a fan, don't sit or lie down right below it, especially at night. These practices are to keep your respiratory tract healthy.
- Keep the day actively engaged in works that you can do at home. Prepare a timetable for the lockdown period.
- Start reading good books. During these days, reading can be developed into a healthy habit, good for the mind as well.
- Spend time with your loved ones.
- Try activities like cooking, painting, stitching, gardening, games, etc.
- Do things on a timetable.
- Be regular with the morning routines like brushing the teeth, toilet, bathing, etc. as the season is warm and humid in Kerala, wash your body twice and head once (preferably in the morning)
- *Nasyam*: put one drop of coconut oil or sesame oil in each nostril and inhale. This may be done in the morning before head bath.
- Don't bathe immediately after a meal.
- Exercise moderately but regularly. An adult with moderate built shall exercise two times a day. It can be Yoga, Skipping, Treadmill, *Orbitrek* or something of that sort. Opt for those, which can be done indoors. Yoga has an edge over the others because it can be incorporated with pranayama and meditation, which will be excellent support for the mind as well.
- Keep good posture while sitting, lying down or standing. Faulty postures may end up in spinal disorders by the time we come out of the lockdown period.
- Keep yourself happy and composed. Stress is the biggest enemy of our immune system.

Hygiene of the premises

- Keep your home and surroundings clean. This is essential for prevention of all sorts of diseases.

- Manage the domestic waste properly. Don't allow mosquitoes, rats or other rodents to breed around.
- Smoke (dhoopanam) all the rooms of your house with herbs. Turmeric, Garlic, mustard, Neem leaves, and Salt. Aparajitha churnam is another option. If available vayambu, kottam, katukka, and yavam may also be used. These are all given as choices. Add a bit of ghee while doing the dhoopanam.

Pharmacological Interventions

Preventive Medical Practices

- For a healthy person, no medicine is needed. But certain preventive medical practices added on to the daily activities may give enhanced capacity to fight against infections. They are listed below:
 - Apply or put a drop of coconut oil in your nostrils in the morning after brushing teeth.
 - Warm gargle with water boiled with dry ginger, turmeric, panikkoorkayila, and a bit of salt. This may be done after the nasal drops.
 - Steam inhalation with turmeric, thulasi leaves and panikkoorkayila in the evening.
- a. Some medicines are helpful in improving the general health.
- 15 ML Indukantham kashayam diluted with 60 ML pre-boiled cool water may be taken two times a day before food.
 - 10 GM of Kooshmandarasayanam (for those with good appetite) or Agasthyarasayanam (for those with less appetite) may be taken two times a day after food. Dose may be adjusted according to digestive capacity.
 - Age appropriate modifications of dose and frequency of medicines are to be made by the medical team through the facility entrusted for the same by the Govt.

Annexure 2

CONVALESCENT PERIOD CARE

The Non-pharmacological intervention

1. Follow annexure 1.
2. Head bath shall not be regular during this period. Those who have residual symptoms like breathing difficulty may avoid head bath until the symptoms resolve. Use warm water for body and boiled cool water for head while bathing. Apply Rasnadi powder on the crown after head bath. Oil bath shall be started only after 7 days after recovery and on the advice of an Ayurvedic physician.
3. Strictly avoid contact with general public
4. Pranayama, yoga can be continued under medical advice
5. Strictly avoid pungent and sour foods and reduce salt intake.
6. Drinking water can be boiled with chittamruthu, chukku, Tulsi, jeerakam and ayamodakam as per availability.
7. cherupayar soup, banana / arrowroot powder soup with chukku and sarkara can be taken in the evening..
8. 1 teaspoon of small onion made into a paste with honey can be taken once or twice daily.
9. Milk boiled with turmeric and dry ginger can be taken once.
10. Keep yourself engaged in music, reading, communicating with friends and relatives, write down your experiences during the disease.

Pharmacological intervention*

1. Strictly continue all medicines prescribed by the physician during the COVID attack and the regular medicines prescribed for other comorbidities like diabetes
2. 15 ML Elakanadi kashayam with 45 ML boiled cool water and ½ teaspoon Jeerakappodi as mempoti two times a day. For non-diabetic patients, add 1 teaspoon honey also. Other options are :
 - a. Dasamoolakatuthrayam kashayam
 - b. Indukantham kashayam
 - c. Vyaghryadi kashayam
3. Rasayana Chikitsa to be opted for to avoid potential sequel of the infection. Special consideration shall be given to major organs like lungs, liver kidneys etc. A list of medicines in this regard is given below:
 - a. Kooshmanda rasayanam
 - b. Agasthya rasayanam
 - c. Amrutha prasam
 - d. Chyavana prasam
 - e. Pippali rasayanam
 - f. Indukantham ghrutham
 - g. Bruhat chagaladi ghrutham

*This needs medical advice from the facility provided for this purpose

Annexure 3

High risk like health care professionals and other field staff working with corona patients (without comorbidities*)

Non Pharmacological Interventions

1. Follow Annexure 1.
2. Try to sleep for 6 hours a minimum
3. Practice deep breathing/yoga/pranayama every day. Find time to relax and exercise regularly. Specific exercise modules for this purpose are incorporated in this program
4. Keep yourself hydrated. Drink plenty of water. More advice in this regard is available in Annexure 1. Some extra options are given below:
 - a. Limewater can be fortified with any of the above drugs like ginger, thulasi leaves, panikkoorkka etc, sugar candy would be more helpful instead of sugar.
 - b. gooseberry (2-3nos) and cardamom(1no) can be used to make juice and take with Honey
 - c. Black dry grapes- 20 nos is kept in water overnight, squeezed and juice can be taken with honey or sarkkara
 - d. Dry ginger, coriander, jeeraka, uluva, tulsi leaves, elakkai can be slightly roasted, powdered and boil in sarkkara to make a syrup. This can be diluted with water and consumed.
5. Do not suppress your natural urges to urinate, pass motion etc.
6. Do steam inhalation twice (at least once) a day. More advice in this regard is available in Annexure 1.

Pharmacological Interventions

1. Follow Annexure 1.
2. Chyavanaprasam 10 GM shall be taken two times a day after food followed by ½ glass of milk boiled with dry ginger and turmeric.

**Cardiovascular Diseases, Diabetes, Hypertension, Chronic Respiratory Diseases, Cancer*

Annexure 4

General Guidelines for People with Comorbidities

1. Chronic Respiratory Ailments

I. Non Pharmacological Intervention

- a. Diet: General directions in **Annexure 1** shall be followed
- b. The food should be light and warm. As far as possible avoid late night meal
- c. Never eat bellyful.
- d. Avoid refrigerated food.

Drinking water: additional suggestions are listed below.

- e. 10 Tulasi leaves / 2 panikoorka) + 1 teaspoon crushed coriander seeds + 2 pinch dried ginger powder boil in 1 litre water – can be used for drinking comfortably warm.
- f. Chukkukaappi
- g. Mallikkaappi
- h. Thulasikaappi
- i. Avoid milk and milk products in general
- j. Avoid carbonated, refrigerated drinks

B. Activities of Daily Living

- a. Breathing exercises/pranayama/yoga/physical exercises. (Special Instructions are given)
- b. Avoid lying directly beneath the fan at night.
- c. Avoid AC
- d. Steam inhalation (Refer Annexure 1 for details). Cover the eyes during steam inhalation.
- e. Gargling two times a day: (Refer Annexure 1 for details).
- f. Nasyam: (Refer Annexure 1 for details).

II. Pharmacological Intervention

- a. Special medicines shall be used as supportive measures in consultation with Ayurveda physician using the telemedicine facility provided by the Govt.

Annexure 5

General Guidelines for People with Comorbidities

1. Diabetes Mellitus

General Guidelines:

1. All regular medicines shall be continued without fail.
2. Keep monitoring the blood sugar values at regular intervals.
3. Follow the diet prescribed by your doctor.

I. Non Pharmacological Interventions

A. Diet

- a. Limit the amount of grains in your diet
- b. Wheat and Small millets like Ragi can be an alternative
- c. Whole green gram (Cherupayar) is a good option
- d. steam cooked foods are considered beneficial
- e. Special Precautions: Indian gooseberry (nellikka/amla) and turmeric are beneficial for improving general immunity and also to control diabetes. These can be used as:
 - 4-5 raw gooseberry + one small piece of raw turmeric (manjal) can be ground together to take the juice and can be taken once in a day.
 - Dry gooseberry powder- 1 tsp, turmeric powder -3 pinch, can be mixed in hot water and taken once a day.
 - Dry gooseberry powder- 1 tsp, turmeric powder -3 pinch can be boiled in 1 ½ glass water, to be reduced to ¾ glass and can be taken once a day.
- f. Fenugreek should be dry fried and made into powder and can be taken with hot water, ½ tsp once a day.
- g. 1 tsp triphalachoornam can be taken with luke warm water at bedtime for relieving constipation and is good for diabetes also.
- h. For drinking water: Boil 2 litres of water with ½ tsp coriander or ½ tsp cumin seeds with 10 crushed pieces of jackfruit leaf (plavila) petiole or mango leaf (mavila) petiole, and add 10 tulsi leaves or 2 panikkoorka (indian borage) leaf, when it starts boiling. Keep this closed for a while. And use as drinking water when cold.

II. Pharmacological Intervention

- a. Special medicines shall be used as supportive measures in consultation with Ayurvedic physicians using the telemedicine facility provided by the Govt.

Annexure 6

General Guidelines for People with Comorbidities

1. Cardiac Patients and Hypertensive Patients

General Guidelines:

1. All regular medicines shall be continued without fail.
2. Keep monitoring the blood pressure at regular intervals.
3. Follow the diet prescribed by your doctor.

I. Non Pharmacological Interventions

A. Diet

- a. Spicy, sour and fried items should be avoided.
- b. Salt intake shall be limited
- c. Add shallots, ginger, coriander, garlic, black pepper, turmeric, curry leaves etc shall be more included in daily foods.
- d. For panajalam: Boil 2 litres of water with $\frac{1}{2}$ tsp coriander or $\frac{1}{2}$ tsp cumin seeds with 10 crushed pieces of jackfruit leaf petiole (plavilanjettu) or mango leaf petiole (mavilanjettu), and add 10 tulsi leaves or 2 panikkoorka (indian borage) leaf, when it starts boiling. Keep this closed for a while. And use as drinking water when cold.
- e. Special Guidelines: 8 cloves of garlic, and $\frac{1}{2}$ tsp cumin seeds are crushed and boiled with $1\frac{1}{2}$ glass water and $\frac{1}{2}$ glass milk and is reduced to $\frac{3}{4}$ glass. It is then filtered and taken once a day. (Those who don't prefer milk can use water alone). Or 5 flaps of garlic can be roasted, ground and eaten as such.

B. Activities of daily living

- a. Follow annexure 1.
- b. For exercise, follow special guidelines in that regard

II. Pharmacological Intervention

- a. Special medicines shall be used as supportive measures in consultation with Ayurvedic physicians using the telemedicine facility provided by the Govt.

Annexure 7

General Guidelines for People with Comorbidities

1. Cancer

General Guidelines:

1. All regular medicines shall be continued without fail. .
2. Follow the diet prescribed by doctor.

Follow the instructions of **Annexure 1**.

Annexure 8

High risk health care professionals and other field staff working with corona patients (with comorbidities*)

General Guidelines:

- a. Follow the corresponding special annexure according to the specific comorbidity

Annexure 9

Ministry of AYUSH

Ayurveda's immunity boosting measures for self care during COVID 19 crisis

In the wake of the Covid 19 outbreak, entire mankind across the globe is suffering. Enhancing the body's natural defence system (immunity) plays an important role in maintaining optimum health.

We all know that prevention is better than cure. While there is no medicine for COVID-19 as of now, it will be good to take preventive measures which boost our immunity in these times.

Ayurveda, being the science of life, propagates the gifts of nature in maintaining healthy and happy living. Ayurveda's extensive knowledge base on preventive care, derives from the concepts of "Dinacharya" - daily regimes and "Ritucharya" - seasonal regimes to maintain healthy life. It is a plant-based science. The simplicity of awareness about oneself and the harmony each individual can achieve by uplifting and maintaining his or her immunity is emphasized across Ayurveda's classical scriptures.

Ministry of AYUSH recommends the following self-care guidelines for preventive health measures and boosting immunity with special reference to respiratory health. These are supported by Ayurvedic literature and scientific publications.

Recommended Measures

I General Measures

1. Drink warm water throughout the day.
2. Daily practice of Yogasana, Pranayama and meditation for at least 30 minutes as advised by Ministry of AYUSH (#YOGAatHome #StayHome #StaySafe)
3. Spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) are recommended in cooking.

II Ayurvedic Immunity Promoting Measures

1. Take Chyavanprash 10gm (1tsf) in the morning. Diabetics should take sugar free Chyavanprash.
2. Drink herbal tea / decoction (Kadha) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) - once or twice a day. Add jaggery (natural sugar) and / or fresh lemon juice to your taste, if needed.
3. Golden Milk- Half tea spoon Haldi (turmeric) powder in 150 ml hot milk - once or twice a day.

III Simple Ayurvedic Procedures

1. Nasal application - Apply sesame oil / coconut oil or Ghee in both the nostrils (Pratimarsh Nasya) in morning and evening.
2. Oil pulling therapy- Take 1 table spoon sesame or coconut oil in mouth. Do not drink, Swish in the mouth for 2 to 3 minutes and spit it off followed by warm water rinse. This can be done once or twice a day.

IV During dry cough / sore throat

1. Steam inhalation with fresh Pudina (Mint) leaves or Ajwain (Caraway seeds) can be practiced once in a day.
2. Lavang (Clove) powder mixed with natural sugar / honey can be taken 2-3 times a day in case of cough or throat irritation.
3. These measures generally treat normal dry cough and sore throat. However, it is best to consult doctors if these symptoms persist.

1. The above measures can be followed to the extent possible as per an individual's convenience.
2. 2 These measures are recommended by following eminent Vaidyas from across the Country as they may possibly boost an individual's immunity against infections.

1. Padma Shri Vaidya P R Krishnakumar, Coimbatore
2. Padma Bhushan Vaidya Devendra Triguna, Delhi
3. Vaidya P M Varier, Kottakkal
4. Vaidya Jayant Devpujari, Nagpur
5. Vaidya Vinay Velankar, Thane
6. Vaidya B S Prasad, Belgaum
7. Padma Shri Vaidya Gurdeep Singh, Jamnagar
8. Acharya Balkrishna ji, Haridwar
9. Vaidya M S Baghel, Jaipur
10. Vaidya R B Dwivedi, Hardoi UP
11. Vaidya K N Dwivedi, Varanasi
12. Vaidya Rakesh Sharma, Chandigarh
13. Vaidya Abichal Chattopadhyay, Kolkata
14. Vaidya Tanuja Nesari, Delhi
15. Vaidya Sanjeev Sharma, Jaipur
16. Vaidya Anup Thakar, Jamnagar

Disclaimer: The above advisory does not claim to be treatment for COVID 19.

Annexure 10

Therapeutic recommendations for Treatment of COVID19

(Selected medicines that are to be used in the management of Category A patients)

Medicines to be selected from the following list, depending on the clinical condition (Dosha state) and constitution (Prakrithi) of the given patient – as decided by the treating physician / experts at point of care

Category A patients	Kashaya	Gulika / Choorna
Ama stage	Pathyakusthumburadi / Amrithrotharam/ Pachanamritham / Shadangam / Dashamoola katutrayam / Vyaghryadi / Bharangyadi	Sudarshanam (2 bd) Vilwadi gulika (1bd) Mukkamukkadukadi (2 bd) Vettumaran gulika with ginger juice (2 bd) Arogyavardhini ras (1 bd)
Nirama stage	Indukantham / Sheethajwarari/ Elakanadi / Balajeerakadi/ Drakshadi/ Guluchyadi	Sheethajwarari tab (2 bd) Vyoshadi vatakam / Sithopaladi choorna/ Thaleesadi choorna - for frequent use.

- Ama stage as characterised by loss of appetite, feeling of indigestion, heaviness of body, fatigue, headache, body ache and constipation.
- Kashaya standard dosage -90 ml bd, but can be modified by the treating physician if necessary.
- Paediatric dosage – scaled down according to given age and formulation.
- The treating physician has to identify the symptom cluster in the given patient, along with his/her body constitution in order to customize the medicines.
- A combination of maximum one Kashaya, one tablet and one choorna is ideal at a given time, the drugs being altered based on the response elicited in the patient.

- In addition to the above medicines, Standard Jwara (fever) regimen regarding diet and lifestyle as advised in Ayurveda has to be followed.

A. Medicines for managing patients during convalescent period

Formulation	Medicines
Kashaya	Drakshadi / Indukantha / Balajeerakadi / Nayopayam/ Elakanadi
Avaleha	Agasthyarasayana / Dashamoolahareethaki/ Chyavanaprasha
Ghritha	Indukantha ghritha / Amrithaprasha, bruhat chagaladi ghrutham
Choorna	Haridrakhanda / Aswagandha

Dosage

Kashaya – as mentioned before

Leha – 10 gm bd with milk or warm water

Ghritha – 5 gm bd with warm water

Choorna – 5 gm bd with suitable liquid

Addendum

Specific indications of the drugs for reference of treating ayurvedic physician

Kashayas	
Pathyakusthumburadi	Jwara with kantamaya
Amrithrotharam	Katu pachana
Pachanamritham / Shadangam	Thiktha pachana
Dashamoola katutryam	Kasa, swasa, parswashoola
Bharangyadi	Jwara with swasa , kasa
Vyaghryadi	Jwara with kasa
Sheethajwarari	Jwara with kapha predominance
Indukantham	Vatha kapha hara, nimnonnatha jwarahara
Balajeerakadi	kasa, swasa hara, vathanulomana
Elakanadi	Kasa, swasa, kshayahara , balya
Drakshadi	Vathapithahara, jwarahara, balya
Guluchyadi	Pithakaphahara, jwarahara, agnideepana
Gulikas	
Sudarshanam	Jwarahara, thiktha pachana
Mukkamukkadukadi	Vathakapha Jwarahara
Vilwadi gulika	Vathakapha pradhana tridosahara, vishahara
Vetturamaran gulika	Vathakapha Jwarahara
Arogyavardhini rasa	Deepana, pachana , jwarahara
Choorna	
Vyoshadi vataka	Kapha vatha hara, kasa, swarabheda
Thaleesadi	Vathakapha hara, kasa, aruchi, chardi
Sithopaladi	Kapha pitha hara , kasa
Haridra khanda	Kapha pitha hara, kasa, prathisyaya,
Aswagandha	Vathapradhana Tridosahara, brimhana, balya
Avaleha	
Agasthyarasayana	Vathakapha hara, Kasa swasa hara, rasayana
Chyavanaprasha	Tridosha hara Kasa swasa hara, balya, rasayana
Dashamoola hareethaki	Vathakapha hara, kasa, swasa hara , rasayana
Ghritha	
Indukantha	Vathakapha hara, jwarahara, balavardhana
Amrithaprasha	Pithavathahara, rasayana

A preventive protocol on Covid-19 with Simple Poly herbal Formulations in Siddha System of Medicines (With Reference and Stage wise Protocol)

Submitted To,
Hon. Chief Minister of Kerala

Submitted By,
Expert Committee Kerala Siddha
Fraternity



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COVID-19 Intervention and Treatment guidelines in Siddha Medicine

Prelude

Coronavirus disease (COVID-19) is an infectious disease caused due to novel corona virus-2, now called as Severe Acute Respiratory Syndrome Corona Virus -2 (SARS CoV-2)¹, first reported in Wuhan, Hubei Province, China². Because of its spreading nature and mass incidence of new cases day by day, WHO* declared it as a Pandemic³ and calls for a global emergency (114 countries), preparedness, public health initiation and prevention on March 11, 2020, as it has confirmed its presence in all continents.

The Novel Corona virus is the largest group of viruses belonging to the *Nidovirales* order, under the family *Coronaviridae*. club-like spikes with RNA genomic virus. The possible receptor for this is ACE2 receptor protein⁴. There is a several Incidence of viral epidemic that rolled out the public health drastically. In the series, severe acute respiratory syndrome coronavirus (SARS-CoV), Influenza-A (H5N1) in 2002 to 2003, and H1N1 influenza⁵ in 2009 and the Middle East respiratory syndrome coronavirus (MERS-CoV)⁶ was first identified in Saudi Arabia in 2012.

Basic Ideology of Siddha Medicine

As per the text *NoiNaadal thirattu*⁷, sub *-Guru Nadi*, the term ‘*Kirumiyalvandhathodamperugavundu*’ evidenced the knowledge about microbes, handling strategy, nature & quality of diseases spread and controlling strategies are well practiced in the Siddha system of medicine. Globally and even our country has facing serious outbreak situation with increase in cumulative incidence rate.

Siddha holistic approach will be helpful in Combating COVID 19 using both therapeutic and non-therapeutic interventions. Siddhars have advised two important cardinal sign to understand the disease. Firstly, to understand the nature of disease (*Noinaadi*), secondly to access its etiology (*MudhalNaadi*). Based on those two cardinal signs, the treatment plan to be established (*AthuThanikkaVainaadi*)⁷.

*World Health Organization

SiddharTheran in his text *TeraiyarMaruthuvaBaratham*, has defined the basic concept as Vatham is responsible for creation, Pittam for prevention and Aiyam for destruction.

**வாதமாய்படைத்துபித்தவன்னியாய்காத்து
சேட்பசீதமாய்துடைத்து**

----- தேரன், மருத்துவ பாரத நூல்.

Infections happen to a person when his Immunity is challenged which could be related with reduction of Pittam. In Covid19 infection, there is an initial increase of body temperature, followed by cough⁸, Throat pain⁹ and Myalgia which may be subsided if there is good amount of immunity and these symptoms reduced when *Pitta Thathu* come into action.

However recent studies suggested that, 5% to 10% of symptoms of acute respiratory infections⁹ i.e. common colds and self-limiting upper respiratory infections symptoms are easily subsided in immune-competent an individual, which correlates the concept of siddha discussed previously.

If not it escalates to a phase of *KaphaDosham* which is said as “*Thanamullasethumanthanilagilveppu*”. If no therapeutic intervention provided in this stage, it will slowly moves to the Stage of *Sanni*.

Based on the above discussion, it has been unanimously agreed to have equated diagnosis as Kaphasuram in Siddha in early stages and in non-intervened stage the early stage will to move toward Sanni and which will be also reassured through Delphi method* or other sources of FGD[†].

சிலேட்பசுரம்¹⁰ -

சந்தாபமானசேட்டுமசுரத்தைச்
சாற்றிடவேநாக்குமுகம்வெளுத்துகாணல்
மந்தாபமார்நோதலிருமலிளைப்பு
வருகுதல்வாய்துவர்த்துமேஉரிசையில்லை
முந்தாபமூச்சுவிடப்போகாமற்றான்
முயங்கியேவிக்கலொடுதாகங்காணல்
சிந்தாபமிடறுநொந்துமேன்மூச்சாதல்
தினவெடுத்தல்தியங்கிடுதல்சேட்பமாமே

- YugiMunivarVaidya Chintamani-800

* Delphi method – Systematic interaction with Peers and panel of experts.

† FGD – Focused Group Discussion

COVID 19 SYMPTOM WISE STAGES AND TREATMENT

Uncomplicated illness ⁸	Mild Pneumonia	Severe Pneumonia	End stage disease
<p>Sneezing Throat pain Soar Throat Fever Tiredness Malaise (மார்நோதல், இருமல், தொண்டைநோதல்) வாய்துவர், உருசியில்லை-Anosmia and Dysguesia (May be in any stage of Disease)</p> <p>Interventions</p> <ol style="list-style-type: none"> 1. Immunomodulatory drugs 2. Symptomatic drugs. <p>ADVISORY</p> <ol style="list-style-type: none"> 1. Nilavembukudineer - 60 ml <i>bid</i> (adult) - 15-30 ml (child) 2. Kaphasurakudineer - 60 ml <i>bid</i> (adult) 3. AdathodaiManapagu -10 ml <i>tid</i>(adult) 	<p>Patient with pneumonia and no signs of severe pneumonia. Child with non-severe pneumonia has cough or difficulty in breathing/ fast breathing: (fast breathing - in breaths/min):<2 months, ≥60; 2–11 months, ≥50; 1–5 years, ≥40 and no signs of severe pneumonia.</p> <p>Interventions</p> <ol style="list-style-type: none"> 1. Drugs for Cough Management 2. Drugs for Pneumonia management <p>ADVISORY</p> <ol style="list-style-type: none"> 1. Nilavembukudineer - 60 ml <i>bid</i> (adult) - 15-30 ml (child) 2. Kaphasurakudineer - 60 ml <i>bid</i> (adult) 3. AdathodaiManapagu -10 ml <i>tid</i>(adult) 	<p>Adolescent or adult: fever or suspected respiratory infection, plus one of the following; respiratory rate >30 breaths/min, severe respiratory distress, SpO2 <90% on room air Child with cough or difficulty in breathing, plus at least one of the following:</p> <p>Central cyanosis or SpO2 <90%; severe respiratory distress (e.g. grunting, chest in-drawing); signs of pneumonia with any of the following danger signs: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions.</p> <p>Other signs of pneumonia may be present: chest in drawing, fast breathing (in breaths/min):<2 months ≥60; 2–11 months ≥50; 1–5 years ≥40. The diagnosis is clinical; chest imaging can exclude complications.</p> <p>(இளைப்பு, மேல்மூச்சு, பெருமூச்சு, வியர்வை, மலம், நீர்கழிதல்)</p> <p>Interventions</p> <ol style="list-style-type: none"> 1. Drugs for symptom management 	<p>Adults: life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection, with organ dysfunction. Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation, reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinemia. Children: suspected or proven infection and ≥2 SIRS(விக்கல், தியங்குதல், ஆடல், பாடல், புரளல், நாக்குமுகம் வெளுத்துகாணல்- Symptoms of Sanni) As the patient may need End stage interventions, as per the decision</p>

		<p>ADVISORY</p> <p>1. Vathasurakudineer - 60 ml <i>bid</i> (adult)</p> <p>2. Kaphasurakudineer - 60 ml <i>bid</i> (adult)</p>	Integrative therapy may be given
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Justification for the advisory:

Nilavembukudineer is a multi-compositional herbal drug having antiviral¹¹, antipyretic, analgesic and anti-inflammatory properties¹². The antiviral studies of were performed against the chikungunya virus [flavivirus] (CHIKV) and dengue virus [alphavirus] (DENV) along with cytotoxicity studies were performed in a series of before the treatment, on the time of treatment, and post treatment period. The study suggested that, the drug is working in a dose dependent manner and stringent posology to be maintained when it is using for the humans. No toxicity has been observed when using it as poly-herbal combinations. There is a previous protocol that, *Nilavembukudineer* has been used a drug regimen during the Chikungunya outbreak¹³. Though this formulation is also having analgesic and inflammatory properties, reduced covid-19 associated myalgia and malaise symptoms. Recent *insilico* study on *Nilavembukudineer* shows that, inhibiting ACE2[‡] Inhibitor, which repels the route of entry of corona virus¹⁴.

Kabasurakudineer is a formulation consist of 15 herbal ingredients used for the management of viral origin fevers. In previous Swine flu outbreak in 2005, the primary respiratory based symptoms are related with disease characteristics of Kaba suram^{15,16} where AYUSH ministry has made an advisory to prove Kabasura kudineer¹⁷ because of its evidence based nature. Clinical study on Kabasura Kudineer¹⁸ data shows that promising therapeutic effect for the management of Kabasuram, The study was performed in 20 Paediatric cases (50% of participants >6 to <12 years), and the 1-5yrs and 6-12 yrs child received as dose of 15ml and 30ml of doses respectively. The study results had shown that 70-80% of participants having significant therapeutic effect. Another case study also carried out from National Institute of Siddha on *Kabasura Kudineer*¹⁸ along with *Surakudarimathirai*, in 50 paediatric cases in which 70% cases

[‡]Angiotensin-converting enzyme 2

were relieved good from the diseases whereas 20% and 10% were moderately and mildly relieved from the disease respectively.

Therefore Kabasurakudineer made from nilavembu¹¹ (*Andrographispaniculata*), kanduparangi (*Clerodendrunsesserratum*), chukku¹⁹(*Zingiberofficinale*)²⁰, thippili (*piper longum*), Ilavangam(*Syzygiumaromaticum*) , adathodaiver(root of *Justiciavasica*)²¹,CirukancoriVer (*Tragia involucrate*), seenthil (*Tinosporiacordifolia*), karpooravalli (*Anisochiluscarneus*), koraikizhangu (*Cyperusrotundus*), kostam(*Costusspeciosus*), akkara (*Anacyclus pyrethrum*) VattathiruppiVer(*Sidaacuta*), MulliVer (*Hygrophillaauriculata*) and Kadukkaithol (*Terminaliachebula*)²² is found to be efficient inprevention and treatment of Covid-19

AdathodaiManapagu, syrup based formulation consist of *Justiciaadathoda* which is a potent antiviral agent. The leaves of *A. vasica* is antibacterial, antifungal, phytotoxic, cytotoxic, and haemagglutinationinhibition²¹ properties. Hemeagglutination process is an important process in viral clumping, where preventing the red blood cells from clumping. It shows an airway smooth muscle relaxant property in the isolated guinea pig tracheal chain (D’Cruz et al., 1979). In the same way, in vitro antiviral effect of *Justiciaadhatoda* crude extracts were studied against influenza virus by Hemagglutination (HA) reduction assay, where the *A. vasica* providesstrong anti-influenza virus activity, that can inhibit viral attachment and/or viral replication, and can be used as viral prophylaxis and treatment modules especially for Covid-19

Symptomatic comparison with the siddha pathology

Symptoms based on Corona case studies	Siddha Symptomatology	Siddha pathological sign
Uncomplicated illness Comparison		<i>Kaphasuram</i>
Sneezing Throat pain Soar Throat Fever Tiredness Malaise	(மார்நோதல், இருமல், தொண்டைநோதல்) வாய்துவர், உருசியில்லை- Anosmia and Dysguesia (May be in any stage of Disease)	
Mild Pneumonia		<i>Kaphavatham</i>
Pneumonia	பக்க சூலை	
Severe Pneumonia		<i>Kaphavatham - Sanni staging</i>

severe respiratory distress (e.g. grunting, chest in-drawing); signs of pneumonia with any of the following danger signs: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions.	இளைப்பு , மேல்மூச்சு, பெருமூச்சு , வியர்வை, மலம், நீர்கழிதல்	
End stage disease		Sanninilai
Infection with organ dysfunction	விக்கல், தியங்குதல், ஆடல், பாடல், புரளல், நாக்குமுகம், வெளுத்து காணல். (Symptoms of Sanni)	

STAGE WISE MANAGEMENT PROTOCOL

Asymptomatic Patient

- exposure evaluated -travel history / contact history / home quarantine/ isolation

No symptoms or very mild symptoms

- Consider as the onset of Kaphasuram.
- Consider the patient's age and other co-morbidities.
- Advise him with the community prevention protocols

Drinking water

- ❖ Herbal water infusion made up of Chukku/ Half teaspoon boiled in two liters of water can be used as drinking water.
- ❖ Chukkucoffee orInji Tea / Licorice tea may be taken as Hot beverages .
- ❖

Zingiberofficinale had been studied for itsantiviral activity against human respiratory syncytial virus (HRSV)²³ using plaque reduction assay in both human upper (HEp-2) and low (A549) respiratory tract cell lines. The ginger could decrease the plaque formation to 12.9% when given before viral inoculation. In recent days, many antiviral drugs are isolated from ginger

namely sesquiterpenes and beta-sesquiphellandrene were used as anti-Rhinoviral agents²⁰. Ginger has also studied against Human Norovirus and results stated that provides significant antiviral property and possible used as antiviral agent for the human usage^{24,25}. Ginger also tested for Dengue virus serotype 2 strain New guinea C (*DENV-2 NGC*) in infected Huh-7 cell line, and with no toxic effect on cells Huh-7 it has the average viability percentage > 50¹⁹.

❖ **Avoiding Milk at bed time is advisable if needed for children add quarter teaspoonful of turmeric with pepper.**

Terpenoid consisting ingredients are highly potent in resisting the viral pathogens and its replication process. *Curcuma longa* primitively consist of curcumin, which is a terpenoid, tested against coronavirus (SARS-CoV) activities using a cell-based assay measuring SARS-CoV-induced cytopathogenic effect on Vero E6 cells²⁶. Also studied for DENV-2 in vitro and in vivomodels. The invitrovalue of ^sIC₅₀ was 17,91µg/mL whereas the value of CC₅₀^{**} was 85,4 µg/mL. In vivo, remarkable reduced the viral load²⁷. Piperamides from black pepper shown potent antiviral activity²⁸ against coxsackie virus type B3 (CVB3). Methonolic extract of piper nigrumagainst Vesicular stomatitis Indiana virus and Human para influenza virus on HeLa cell lines shown that significant antiviral activity²⁹.

❖ **Steam inhalation – With Nochi/ Manchal**

❖ Gargling – Water boiled with a pinch of salt and Turmeric²⁶ should be used not less than 3 times.

❖ **Environmental sanitation- Neem leaves fumigation is advocated**

Neem is considered as a potential antiviral agent and day to day this has been using in every home as fumigator. *Azadirachtaindica* were³⁰ against influenza virus nucleoprotein, and shown its potential against influenza strains. Neem were against herpes simplex virus type-1 infection³¹, inhibited HSV-1 glycoprotein mediated cell to cell fusion and polykaryocytes formation suggesting an additional role of NBE at the viral fusion step.

Other medicines other than advisory.

- a. Thaleesathi chooranam tablet for soariness.(As Directed by Physician)
- b. Thalaivalipasai or Chandra kalalepam – For head ache
- c. Nellikaillehyam – 5gm BID for General immunity improvement.

^s IC-Inhibitory Concentration

** CC- cytotoxic concentration

Mild pneumonia

Siddha Pathology – **Kaphavatham**

Consider as the onset of *KaphaVatham* and take an account of age and other co-morbidities for the further clarity in diagnosis.

Advise him with the community prevention protocols

- ❖ Drinking water- Herbal water infusion made up of lemon peel / ginger teaspoon boiled in two liters of water can be used as drinking water.
- ❖ Thirikadugu coffee or Tulsi Tea / Licorice tea may be taken as Hot beverages . Avoid Milk
- ❖ Fomentation – With rice husk over chest .
- ❖ Gargling – Water boiled with a pinch of salt and Turmeric should be used not less than 3 times.

Interventions which might be helpful

Mathirai (Tablets)

- a. *Swasakudori*

Ilagam (Confectionary)

- a) KandankathiriIlagam
- b) ThoothulaiRasayanamand
- c) ThippiliRasayanam.(Dose as Fixed by Physician)

Severe Pneumonia

Siddha Pathology – **Kaphavatham** -----**Sanni**

Disclaimer

1. All medicines recommended in this protocol are simple poly herbal Siddha Formulations, medicines included in this protocol does not contain any form metallic or mineral preparation.
2. There medicines which can be intervent in later stages of the disease and that may be submitted as aseparate protocol.
3. All medicines and Interventions mentioned here should be taken as per Physician dose and advice.
4. Proper diagnosis and referral practices are to be ensured.
5. All Lab diagnosis should be as per WHO and Measurable.

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