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Effect of Ayurvedic Treatment Module for Preventive and Curative Aspect of Covid-19

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Abstract
An outbreak of pneumonia of unknown reason was first reported on 31st December 2019 from Wuhan City in Hubei Province of China. On 7th Jan 2020, it was diagnosed as "Novel Corona Virus". On 30/012021, WHO has declared it as a Public Health Emergency of International Concern (PHEIC). In Sri Lanka, the first case of COVID-19 was reported late January 2020 which was a Chinese national and the first local case was identified in the second week of March. Since then, the government of Sri Lanka introduced various sequential measures to improve social distancing. Purpose of this study to study the relationship between preventive treatment protocol and symptoms of covid-19 infection among Covid positive cases and first close contacts. The Covid-19 endemic situation randomly 20 cases of family members included and they were tested with PCR (Polymerase Chain Reaction). They were advised to home quarantine for 2 weeks and using Ayurveda treatment protocol including herbal drugs. Ayurveda treatment which was conducted by Ayurvedic Community medical officers under supervision of Department of Ayurveda. Ayurveda treatment was included Pathishakthikarana vardhaka peyawa, Sudharshana choornaya, Gandusha and Steam Inhalation. Drugs were recommended by Committee of Covid-19 Preventive program at Indigenous Health Ministry and manufactured in Ayurveda Pharmacy, Department of Ayurveda. End of the 2 weeks clinical improvement was assessed, Result was analyzed by using SPSS software 16version. According to the result sociodemographic characteristics as mean age was 38.7(Slandered deviation 1.70) and most of them were between 21-30, 32-40, 41-50 age group (25%) separately, Male (60%), Covid-19 positive 6(30%) cases and 14 (70%) first close contacts of family members. Out of them 70% were used Ayurveda treatment only and 30% were used both Ayurveda and Allopathic treatments. During 2 weeks 20% were hospitalized due to fever condition and they were treated with Allopathic drug (Paracetamol 500mg,Vitamin C) remain 80% were home quarantine used Ayurveda treatment only. According to the Chi-Square test there was significant relationship between Treatment for Covid 19 infection and presence of symptoms of Covid 19. (P value=0.000), between Treatment for Covid 19 infection and hospitalization. (P value=0.000), Covid 19 infection and hospitalization. (P value=0.001)

The role of Ayurvedic herbal and herbs-mineral drugs in the treatment and prevention of COVID-19 has been well established in this study. Thus, a larger, prospective, randomized, controlled clinical trial should be conducted to further evaluate the adjuvant efficacy of in the Natural herbal medicine treatment of COVID-19

Keywords: Ayurveda, Covid-19, Herbal, Treatment.

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Introduction
An outbreak of pneumonia of unknown reason was first reported on 31st December 2019 from Wuhan City in Hubei Province of China. On 7th Jan 2020, it was diagnosed as "Novel Corona Virus". On 30/012021, WHO has declared it as a Public Health Emergency of International Concern (PHEIC).On 11/02/2020 the WHO renamed the disease as COVID-19 and on 11/03/2020 declared as pandemic [1].

The Chinese Center for Disease Control and Prevention (CDC) ruled out related coronaviruses such as influenza, avian influenza, adenovirus, severe acute respiratory syndrome coronavirus (SARS-CoV-1), and Middle East respiratory syndrome coronavirus (MERS-CoV) as possible causes for the respiratory syndrome, but eventually declared it as a novel coronavirus, later on COVID-19. Though the actual route of transmission is uncertain at this point, it is speculated to be a zoonotic disease transmitted to humans; however, the prevalence of human-to-human transmission has led to the pandemicity.

After that travel-related cases began emerging in Thailand, Japan, South Korea, France, and the United States of America (USA) by mid-January. By the end of January, the novel coronavirus had spread through the Western Pacific, South-East Asia, USA, and Canada, Europe, and Eastern Mediterranean countries. This spread constituted a Public Health Emergency of International Concern (PHEIC). As of June 9, 2020, there were 7 039 918 confirmed cases with 404 396 deaths and 3 596 972 that recovered, globally. The confirmed cases and deaths peak in countries with COVID-19 depending on population education and awareness, preventative measures, surveillance of the infected, and interventions taking place [2].

In globally Covid-19 infection are still rising in 47 countries up to now [3].

In Sri Lanka, the first case of COVID-19 was reported late January 2020 which was a Chinese national and the first local case was identified in the second week of March. Since then, the government of Sri Lanka introduced various sequential measures to improve social distancing such as closure of schools and education institutes, introducing work from home model to reduce the public gathering, introducing travel bans to international arrivals, and more drastically, imposed island wide curfew expecting to minimize the burden of the disease to the Sri Lankan health system and the entire community [4].

In Sri Lanka up 25th 0f march 2021 total Number Confirmed cases 91018, total Number of deaths 554.Among the deaths male were 342 and female were 212 [5].

COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Most common symptoms: fever, dry cough, tiredness. Less common symptoms: aches and pains, sore throat, diarrhea, conjunctivitis. Headache. Loss of taste or smell, a rash on skin, or discoloration of fingers or toes, serious symptoms: difficulty breathing or shortness of breath, chest pain or pressure, loss of speech or movement [6].

Objectives
1. Study the relationship between preventive treatment protocole and symptoms of covid-19 infection among Covid positive cases
2. Study the relationship between preventive treatment protocole and symptoms of covid-19 infection among first close contacts

Methodology
In the Covid-19 endemic situation 20 cases of family members and they were tested with PCR (Polymerase Chain Reaction). They were advised to home quarantine for 2 weeks and using Ayurveda treatment protocol including herbal drugs. Ayurveda treatment which was conducted by Ayurvedic Community medical officers under supervision of Department of Ayurveda. Ayurveda treatment was included Pathishakthikarana Vardakas peyawa, Sudharshana choornaya, Gandusha and Steam Inhalation. Drugs were recommended by Committee of Covid-19 Preventive programme at Indigenous Health Ministry and manufactured in Ayurveda Pharmacy, Department of Ayurveda. End of the 2 weeks clinical improvement was assessed, Result was analyzed by using SPSS software 16version.

a) Pathishakthikarana vardhaka peyawa

b) Gandusha choornaya

c) Sudharshana choornaya

Fig 1: Herbal drugs used in oral administration

Steam inhalation
Pavatta-Adathoda Vasika
Nika-Vitex Negundo
Kurudu-Cinnamomum Zeylanicum
Maduruthal-Ocimum Sanctum
Vara-Calotropics Gigantea were boild and inhale the steam

Symptoms Were Assessed as Follows
1) Most Common Symptoms

Table 1: Most common symptoms of Covid-19

Symptoms	Symptoms in Stages		
		Before	After
Fever	Normal		
	Mild/low grade		
	Moderate grade fever)		
	High grade fever		
Dry Cough	Acute(Less the 3 weeks)		
	Chronic(3-8weeks)		
	None		
Tiredness	None		
	Relieved by rest		
	Not Relieved by rest		

2) Less Common Symptoms

Table 2: Less common symptoms of Covid-19

Symptoms in Stages	Symptoms		
		Before	After
Aches and pains.	None		
	Mild		
	Moderate		
	Severe		
Sore throat.	None		
	Mild		
	Moderate		
	Severe		
Diarrhea.	None		
	Watery		
	Not watery		
	Grade 1-Up to 4 times		
	Grade 2-4 to 6 times		
	Grade3-More than 7times		
A rash on skin, or discoloration of fingers or toes	None		
	Itching		
	Not Itching		
conjunctivitis./Red Eye	None		
	Itching		
	Not Itching		
headache	Non		
	Mild		
	Moderate		
	Severe		
Loss of smell.	No		
	Yes		
loss of taste	Sweet		
	sour		
	salt		
	bitter		
Nausea	Absent		
	Reduced feeding		
	Very Reduced feeding		
	No feeding		
vomiting,	Absent		
	1 episode/24 h		
	2-5episode/24 h		
	6-10 episode/24 h		
	>10episode/24h	-	-

3) Serious Symptoms

Table 3: Serious symptoms of Covid-19

Symptoms	Symptoms in Stages		
		Before	After
Difficulty in breathing or shortness of breath.	Grade 1, only get breathless with strenuous exercise		
	Grade 2, get short of breath when hurrying up a slight hill		
	Grade 3, walk slower than people of the same age on the level because of breathlessness		
	Grade 4, stop for breath after walking 100 yards		
	Grade 5, too breathless to leave the house		

loss of speech or movement	Grade 0 Paralysis		
	Grade 1 severe weakness		
	Grade 2 Slight weakness		
	Normal Strength		
Chest pain or pressure	Sub sternal		
	Provoked by exertion		
	Relieved by rest		
	Pain radiating to both arms,		
	Pain is reproducible by palpation of a specific tender area		

Administration of Drugs

Table 4: Herbal drugs in Ayurveda Treatment protocol

Drugs	Time	2 weeks
Pathishakthikarana vardhaka peyawa	Morning	
	Evening	
Sudharshna capsule	Morning	
	Evening	
Gandusha choornaya	Morning	
	Evening	
Steam inhalation	Morning	
	Evening	

Result

According to the result sociodemographic characteristics as mean age was 38.7 (Slandered deviation 1.70) and most of them were between 21-30, 32-40, 41-50 age group (25%) separately, Male (60%), Covid-19 positive 6(30%) cases and 14 (70%) first close contacts of family members. Out of them 70% were used Ayurveda treatment only and 30% were used both Ayurveda and Allopathic treatments. During 2 weeks 20% were hospitalized due to fever condition and they were treated with Allopathic drug (Paracetamol 500mg, Vitamin C) remain 80% were home quarantine used Ayurveda treatment only.

Table 5: Sociodemographic characteristics

Sociodemographic Characteristics	Frequency	Percentage
Age Group		
10-20	2	10.0%
21-30	6	25.0%
31-40	5	25.0%
41-50	5	25.0%
61-70	3	15.0%
Gender		
Male	16	80%
Female	04	20%
Covid-19		
Positive	06	30%
First close contacts	14	70%
Drugs		
Ayurveda	14	70%
Ayurveda+Allopathic	06	30%
Hospitalization		
Yes	04	20%
No	16	80%

Table 6: Cross tabulation of Treatments and Covid 19 Infection

Covid-19* Drugs Cross tabulation				
Count		**Drugs**		**Total**
		Ayurveda	**Ayurveda+Allopathic**	
Covid-19	Positive	0	6	6
	First close contacts	14	0	14
Total		14	6	20

According to the table there were no presence of symptoms cases who were taking only Ayurveda Treatments.

Table 7: Chi-Square test of Treatments and Covid 19 Infection

Chi-Square Tests					
	Value	**df**	**Asymp. Sig. (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**
Pearson Chi-Square	20.000ª	1	.000		
Continuity Correction[b]	15.522	1	.000		
Likelihood Ratio	24.435	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	19.000	1	.000		
N of Valid Cases[b]	20				

a) 3 cells (75.0%) have expected count less than 5. The minimum expected count is 1.80.
b) Computed only for a 2x2 table

According to the Chi-Square test there was significant relationship between Treatment for Covid 19 infection and presence of symptoms of Covid 19. (P value=0.000)

Table 8: Cross tabulation of Treatments and Hospitalization

Drugs* Hospitalization Cross tabulation				
Count		**Hospitalization**		**Total**
		yes	**No**	
Drugs	Ayurveda	0	14	14
	Ayurveda+Allopathic	4	2	6
Total		4	16	20

According to the table there were no hospitalization cases who were taking only Ayurveda Treatments

Table 9: Chi-Square test of Treatments and Hospitalization

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.667[a]	1	.001		
Continuity Correction[b]	7.872	1	.005		
Likelihood Ratio	12.378	1	.000		
Fisher's Exact Test				.003	.003
Linear-by-Linear Association	11.083	1	.001		
N of Valid Cases[b]	20				

a)   3 cells (75.0%) have expected count less than 5. The minimum expected count is 1.20.

b)   Computed only for a 2x2 table

According to the Chi-Square test there was significant relationship between Treatment for Covid 19 infection and hospitalization. (P value=0.000)

Table 10: Cross tabulation of Hospitalization and Covid 19 Infection

Hospitalization* Covid-19 Cross Tabulation				
Count		Covid-19		Total
		Positive	First Close Contacts	
Hospitalization	yes	4	0	4
	No	2	14	16
Total		6	14	20

According to the table there were 2 cases not hospitalization with Treatments.

Table 11: Chi-Square test of Treatments and Covid 19 Infection

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.667[a]	1	.001		
Continuity Correction[b]	7.872	1	.005		
Likelihood Ratio	12.378	1	.000		
Fisher's Exact Test				.003	.003
Linear-by-Linear Association	11.083	1	.001		
N of Valid Cases[b]	20				

a)   3 cells (75.0%) have expected count less than 5. The minimum expected count is 1.20.

b)   Computed only for a 2x2 table

According to the Chi-Square test there was significant relationship between Covid 19 infection and hospitalization. (P value=0.001)

Discussion

COVID-19 was declared a pandemic by the World Health Organization (WHO). Physical isolation was the main preventive measure implemented worldwide to avoid the contagion which caused multiple lifestyle changes in people. Many people have experienced the death of family and friends which has resulted in anxiety and mental distress the widespread disinformation fake news and anti-vaccine comments have caused an increase in self-medication use of medicinal plants, and other alternative treatments.

According to the cases study. mean age was 38.7(Slandered deviation 1.70) and most of them were between 21-30,32-40, 41-50 age group (25%) separately, Male (60%), Covid-19 positive 6(30%) cases and 14 (70%)first close contacts of family members Sarah Gietl *et al.* said that in cohort study 50 patient for 13 days Home quarantine in COVID-19 in Austria. The mean age of the patients was 46±15.7 years (range 13-75) the median age was 48 years. Twenty-three (46%) patients were male and 27(54%) female. Out of these 50 patients, eight (16%) had one or more coexisting medical conditions [7].

Magaly Villena *et al.* mentioned that 20-to 70-year-old sample included in a cross-sectional survey on Use of medicinal plants for COVID-19 prevention and respiratory symptom treatment during the pandemic in Cusco, Peru but in our below10 to 90 years old sample were included. In this case studies, the diagnosis was first done based on RT-PCR test for Covid-19. But the final prognosis was done by getting off them symptoms and signs [8] Details of all the symptoms, Results, treatment, are given in a tabular form. (Table 1,2,3).

The medicines, used in this treatment are using years together in Ayurveda for treatment of fever of viral or another origin, not new or used for the first time. However, these medicines are evidence-based According to Susruta Samhita Nidana Sthana, 5 chapter: The infectious diseases can be transmitted from one to an-other through sneezing, coughing, touching, eating with the infected one in the same dish, lying in the same bed and con-tact with clothes, ornaments and cosmetics. [9, 10]. Therefor other non-infected family members have been self-quarantined from the infected cases in their home since first day of symptoms of them. They were asymptomatic with RT-PCR test for Covid-19 resulting negative and continued same treatment protocol as in infected cases for 14 days. During 2 weeks 20% were hospitalized due to fever condition and they were treated with Allopathic drug (Paracetamol 500mg, Vitamin C) remain 80% were home quarantine used Ayurveda treatment only. After that duration they were not presenting symptoms.

Conclusion

The role of Ayurvedic herbal and herbs-mineral drugs in the treatment and prevention of COVID-19 has been well established in this study. Thus, a larger, prospective, randomized, controlled clinical trial should be conducted to further evaluate the adjuvant efficacy of in the Natural herbal medicine treatment of COVID-19.

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