VOLUME- 3 | ISSUE- 10 OCTOBER 2020

International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga

SJIF Impact Factor : 5.69 | ISRA Impact Factor : 1.318 | ISSN:2581-785X

Observational Study | Volume: 3 | Issue: 10

Surasadi Kadha (An Ayurvedic Decoction) - A Safe And Effective Formulation In Treatment Of COVID-19: A Single-Centered, Retrospective, Observational Study.

Vd. Varad Charkha[1], Vd. Shivprasad Charkha[2], Prof. K Shankar Rao[3], Dr. Mohar Pal Meena[4]

1-PG Scholar, Department of Rasashastra & Bhaishajya Kalpana, N.I.A. Jaipur
2-Consultant, Shree Ayurveda Chikitsalaya, Beed, Maharashtra
3-HOD & Professor, Department of Rasashastra & Bhaishajya Kalpana, N.I.A. Jaipur
4-Associate professor, Department of Rasashastra & Bhaishajya Kalpana, N.I.A. Jaipur

ABSTRACT: COVID-19 has been declared as a pandemic and a global emergency. It has been spreading rapidly and has reached almost all the countries in the world. Confirmed cases are managed clinically but so far there have been no effective treatment or vaccine against it. Ayurveda has proved its potential in curing various kinds of diseases including viral infections. This study was aimed to observe and assess the safety and efficacy of an Ayurvedic decoction prepared from 10 selected Ayurvedic herbs on COVID-19 cases.

94 patients of COVID-19 in a government hospital who received the Ayurvedic decoction twice a day, in addition to the ongoing conventional treatment, were observed in this study. Data were collected through official sources such as case record forms, nursing record sheets, etc. These patients included people of all age group, were in different stage of the disease and having various co-morbidities. Conversion to mortality was set as primary outcome of this study. Symptomatic relief, changes in vital parameters and assessing safety of the decoction were set as secondary outcomes.

Out of 94 patients, 65 were pre-symptomatic and 29 were symptomatic in condition. Men constituted 75.9% of symptomatic patients. The disease was more prevalent in middle age group (50-60) which had 1 of every 3 patients in this study. 29.8% patients were co-morbid. HTN followed by DM were observed to be the leading co-morbidities. Fever, breathlessness and cough were most commonly observed among symptomatic patients.

93 out of 94 patients eventually recovered and discharged with average 10 days of stay in the hospital. A single patient was transferred to the higher center. Not a single patient succumbed to the disease thus keeping the mortality rate nil. Rapid recovery rate was observed in patients having signs and symptoms. Those who were in pre-symptomatic condition did not develop any symptom during their stay in the hospital. The decoction was observed to be safe for patients of all age group and all conditions as no side effects or adverse drug reactions were seen. The study has shown that the Ayurvedic decoction as an additional intervention was safe and effective against COVID-19.

Keywords- COVID19, *Surasadi Kadha*, Ayurvedic decoction

Article received on-17 Oct

Article send to reviewer on-20 Oct.

Article send back to author on-25 Oct.

Article again received after correction on -31 Oct.

Corresponding Author : **Vd. Varad Charkha**, PG Scholar, Department of Rasashatsra & Bhaishajya Kalpana, National Institute of Ayurveda, Jaipur.

Email id – varadcharkha113@gmail.com

How to cite the Article : Vd. Varad Charkha, Vd. Shivprasad Charkha, Prof. K Shankar Rao, Dr. Mohar Pal Meena , Surasadi Kadha (an Ayurvedic decoction) - a safe and effective formulation in treatment of COVID-19: a single-centered, retrospective, observational study. IRJAY, October: 2020 Vol- 3, Issue-10; 119-128
Doi: https://doi.org/10.47223/IRJAY.2020.31025

INTRODUCTION

COVID-19 is a pandemic caused by SARS-CoV-2 i.e. novel coronavirus. The first case of the disease was identified in Wuhan, China on 31st December 2019. Since then, it has spread rapidly throughout the world. As of 16th August 2020, more than 21 million people have been affected by COVID-19 which include nearly 0.76 million deaths.[1] World has no specific medicine for this newly found disease despite the tireless efforts of the scientists all around the globe.

Ayurveda is an ancient healthcare system originated in India. People have been using it as country's own system of medicine for at least last 3000 years. Ayurveda has immense potential to cure various type of diseases occurring in a human body. Many herbs used regularly in Ayurveda have consistently shown their anti-viral activity in different viral infections including that of respiratory system. Considering possible utility of Ayurveda in COVID-19, decoction of coarse powder of 10 herbs was being administered to COVID-19 patients of a government facility in addition to the conventional treatment. The decoction was named as 'Surasadi Kadha' and its ingredients included Tulsi, Guduchi, Vasa, Kantakari, Haridra, Shunthi, Dalchini, Marich, Pippali & Vacha. It was an extension of Ayush

Kwath which was already recommended by Ministry of Ayush, Govt. of India for enhancing immunity against COVID-19. This article aims to explain the safety and efficacy of this Ayurvedic decoction i.e. Surasadi Kadha through data collected from 94 patients.

METHODS

Study design and participants

This single-centered, observational and retrospective study was done at District Hospital (Aurangabad, Maharashtra, India) which is designated hospital to treat COVID-19 patients. All the patients admitted between 13/06/2020 to

23/06/2020 were taken into account for this study, thus keeping no bias in selection of patients. This included patients in all stages of the disease i.e. pre-symptomatic, mild, moderate & severe. Every patient was being provided with 50ml (in adults) Ayurvedic decoction twice a day in addition to the ongoing conventional treatment. The dose was being given as 25ml in 6-12 years and 12.5ml in 0-6 years of age group. The decoction was freshly prepared and served hot. Each patient received the intervention for 10 days.

Data collection

Case record forms, nursing record sheets and laboratory investigations were reviewed for collection of the data. A separate data collection form was designed to collect data in a proper manner. The collected data included registration number, bed number, name, age, gender, date of admission, date of discharge, condition of disease- pre-symptomatic or symptomatic, signs and symptoms & co-morbidity. Quantitative data such as pulse rate (PR), SpO_2 and respiratory rate (RR) were noted on admission & discharge. Blood investigations (complete blood count, C-Reactive protein, serum LDH, liver function tests and renal function tests) were collected on admission. No repeat tests were performed as per hospital protocol.

Outcomes:-

The primary outcome of this study was conversion to mortality. Secondary outcomes included changes in signs and symptoms, alteration in quantitative parameters such as PR, SpO_2 & RR. Evaluating safety based on adverse drug reactions (ADR) is also one of the secondary outcomes of this study.

RESULTS

Between 13/06/2020 and 23/06/2020, 94 patients were admitted, of whom all received the Ayurvedic decoction twice a day for all the days they stayed in the hospital. All patients were residents of Aurangabad district. The mean age was 45.4 years (SD 19.3), and 17 (18%) patients were older than 60 years of age. 33% i.e. 1 of every 3 patients was from age group 50-60 years.**(Figure no.1)** 60.6% of the patients were men. Out of 94 patients, 29 (30.9%) were symptomatic in condition while others being pre-symptomatic. Males constituted 75.9% of symptomatic patients while their proportion in pre-symptomatic patients was 53.8%. **(Figure no.2)** 27.6% of symptomatic and 13.8% of pre-symptomatic patients were above 60 years of age. 28 (29.8%) patients were co-morbid out of which 15 (53.6%) were hypertensive. In both the categories, symptomatic and pre-symptomatic, Hypertension (HTN) was the most common co-morbidity followed by Diabetes Mellitus (DM). **(Table no.1)**

Amongst symptomatic patients, the most common symptoms present were fever (in 34.5%), breathlessness (in 34.5%) and cough (in 31%). The other symptoms observed were Generalized weakness, Pain in throat, Cold, Body ache, Headache, Loose motions, Anorexia and Nausea. **(Table no.2)**

Average PR of the patients was reduced to 83.7 (SD 5.3) from 85.6 (SD 8.4) in pre-symptomatic patients and to 84.6 (SD 9.8) from 88 (SD 11.6) in symptomatic patients. Here, the readings show the average values at discharge and at admission respectively. Average SpO_2 was raised from 95.7 (SD 4.4) to 98 (SD 0.5) in symptomatic patients at the end of the treatment. **(Table no.3)**

For the primary outcome, 93 out of 94 patients were discharged from the hospital. Only 1 patient was referred to the higher centre. The mortality rate was nil as no patient died. Pre-symptomatic patients did not proceed to the symptomatic stage. Symptomatic patients were relieved from signs and symptoms within 5-6 days of treatment. All the patients were discharged after 10 days of treatment as per standard protocol of government except the transfer of 1 patient. Not a single Adverse Drug reaction (ADR) was observed in any of the 94 patients including children. Laboratory findings are not mentioned in the paper as investigations were performed at the time of admission only. No repeat investigations were performed.

DISCUSSION

Since there is no particular medicine for COVID-19, there is was a need as well an opportunity for scientists of all form of medicines to step up and find a safe and effective cure against the disease. Ayurvedic treatment along with conventional care could prove advantageous in this situation of pandemic. To our knowledge, very few studies have been published which have reported efficacy of an Ayurvedic formulation as an add on treatment in such a large sample.

In India, data shows that significantly high share of men in COVID-19 cases. 64% cases were males, according to data collected in May.[2] The collected data of 94 patients of COVID-19 shows that 60.6% of patients were males. The proportion is more in symptomatic patients where males constitute 75.9% of them. This tells us that men are more exposed to COVID-19 than women and are more prone to show signs and symptoms of the disease. Patients above 60 years of age constituted relatively higher proportion of symptomatic patients (27.6%) than pre-symptomatic patients (13.8%). It shows us that this age group is more vulnerable for COVID-19.As of 23rd June 2020, there were total 3686 positive cases in Aurangabad district, out of which 1982 were recovered and 201 were deceased.[3] This gives us mortality rate of 5.45%. Out of total deaths due to COVID-19 in India, 50% have happened to be in the age group of 60 years and above.[4] This study had 18% patients who were above 60 years of age. Most of them were co-morbid as well symptomatic. Still there was no mortality observed. 93 of 94 patients were recovered and discharged. Only 1 patient required transfer to the higher centre due to disease severity.

Out of 65 pre-symptomatic patients, not a single case progressed into symptomatic condition. Patients admitted in already symptomatic stage

were relieved from the symptoms within 5-6 days of treatment. All the patients were kept admitted in hospital for 10 days or till the symptoms subside, as per guidelines set by government. This data shows that though the mortality of the population was above 5% at that time, there was no mortality in patients who were receiving the Ayurvedic decoction in addition to the ongoing conventional treatment. There was marked improvement in signs and symptoms of the patients in the symptomatic stage. The decoction did not show any ADRs in any of the patients including 8 children in age group 1-10. The herbs included in the composition of the Surasadi Kadha are well known and diversely used in the Indian systems of medicine. These are mentioned in various Ayurvedic texts and their properties are well discussed too. Though it is difficult to explain how the decoction works against COVID-19, we can explain the probable mode of action of its ingredients which is well studied all around the globe. For example, Haridra possesses bronchodilator, anti-inflammatory and anti-pyretic properties. Tulsi is well known for its anti-microbial & immunomodulatory action. It is advised in fever caused due to Vata and Kapha, asthma, cough etc.[5] Guduchi is a proven anti-pyretic, anti-inflammatory, antioxidant, anti-malarial and immune-modulatory in action.[6] Other herbs too have been studied largely and known to have above mentioned properties in more or less proportion.

CONCLUSION

From the above information, we can conclude 2 things about Surasadi Kadha – its safety and efficacy. The decoction was being given to patients of almost all age groups including children. As there was not a single case which reported any discomfort or adverse reaction due to the decoction, we can conclude that Surasadi Kadha is safe to consume at the mentioned dosage.The fact that 93 of 94 patients were discharged safely after receiving the Surasadi Kadha for 10 days itself suggests about its efficacy against COVID-19. The statement becomes more impactful when we compare the mortality rate of the sample (which is 0%) with that of the population (which is more than 5%). Patients in symptomatic condition recovered rapidly from the signs & symptoms. The study strongly suggests that the decoction is having a significant role in viral clearance of SARS-CoV-2.

ACKNOWLEDGMENTS

We sincerely thank following people for their administrative support and guidance.

1. Shri Sunil Kendrekar (I.A.S.), Divisional Commissioner, Aurangabad.
2. Shri Uday Chaudhari (I.A.S.), Collector & District Magistrate, Aurangabad.
3. Dr.Sundar Kulkarni, Civil Surgeon, District Hospital, Aurangabad.

Table no.1 Age, Gender & Co-morbidities of pre-symptomatic and symptomatic patients

	Pre-symptomatic **n = 65**	**Symptomatic** **n = 29**	**Total** **N = 94**
Age	44.8 (18.6)	46.5 (21)	45.4 (19.3)
Age range (in years)			
0-10	5 (7.7%)	3 (10.3%)	8 (8.5%)
10-20	3 (4.6%)	0 (0%)	3 (3.2%)
20-30	7 (10.7%)	3 (10.3%)	10 (10.6%)
30-40	4 (6.2%)	3 (10.3%)	7 (7.4%)
40-50	14 (21.5%)	4 (13.8%)	18 (19.1%)
50-60	23 (35.4%)	8 (27.6%)	31 (33.0%)
60-70	5 (7.7%)	6 (20.7%)	11 (11.7%)
70-80	4 (6.2%)	2 (6.9%)	6 (6.4%)
Gender			
Male	35 (53.8%)	22 (75.9%)	57 (60.6%)
Female	30 (46.2%)	7 (24.1%)	37 (39.4%)
Co-Morbidities			
HTN	10 (58.8%)	5 (45.4%)	15 (53.6%)
DM	4 (23.5%)	3 (27.3%)	7 (25%)
Asthma	1 (5.9%)	1 (9.1%)	2 (7.1%)
Thyroid disorder	2 (11.8%)	1 (9.1%)	3 (10.7%)
IHD	0 (0%)	1 (9.1%)	1 (3.6%)
Data are n (%) or Mean (S.D.) unless otherwise specified			

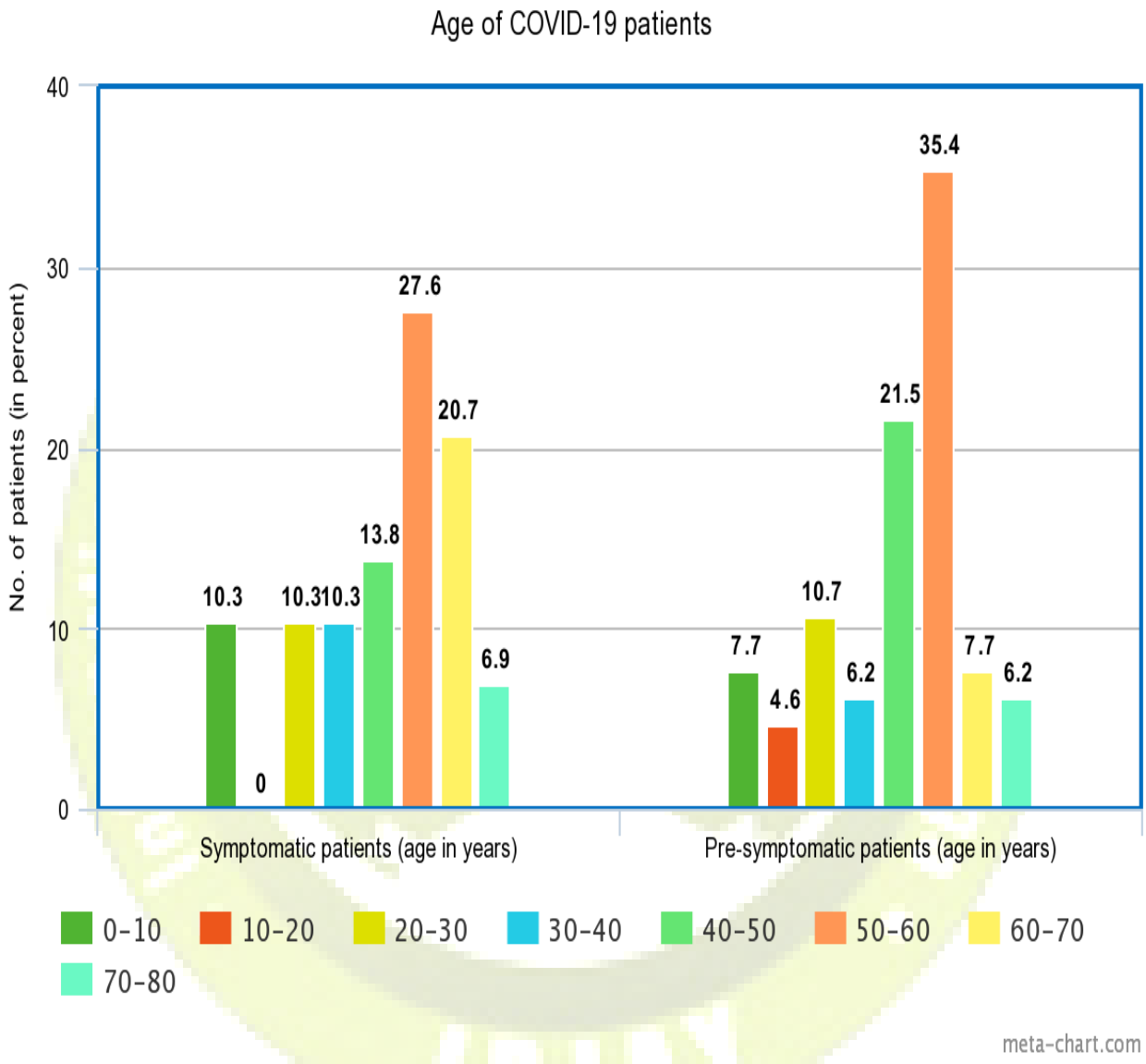
Table no.2 Signs and symptoms appearance in symptomatic patients

Symptoms	**Number of patients**
Fever	10 (34.5%)
Breathlessness	10 (34.5%)
Cough	9 (31%)
Generalized weakness	5 (17.2%)
Pain in throat	4 (13.8%)
Cold	2 (6.9%)
Body ache	2 (6.9%)
Headache	2 (6.9%)
Loose motions	1 (3.4%)
Anorexia	1 (3.4%)
Nausea	1 (3.4%)

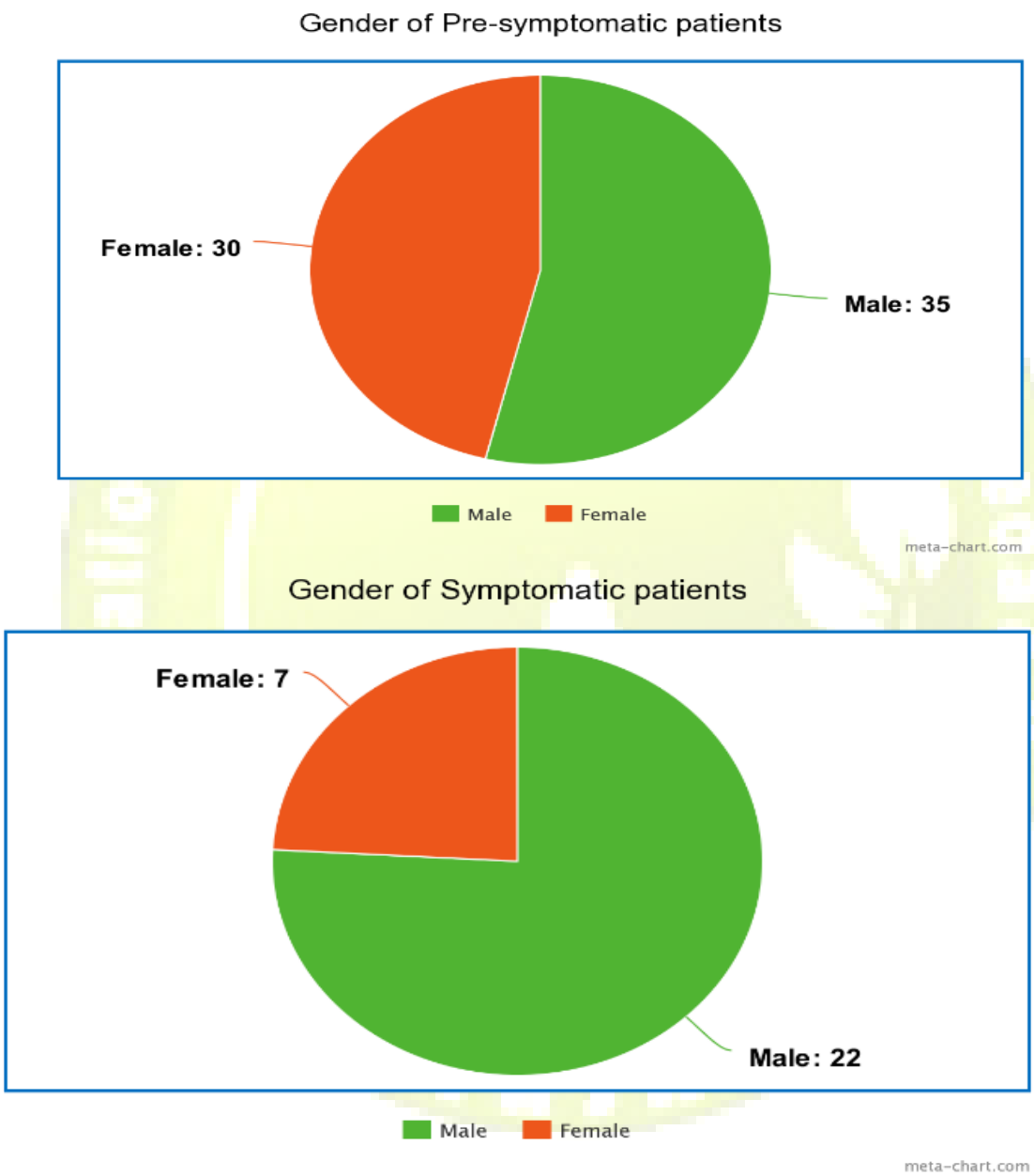
Table no.3 Vital parameters in symptomatic and pre-symptomatic patients (on admission and at discharge)

	Pre-symptomatic patients		**Symptomatic patients**	
	On admission	On discharge	On admission	On discharge
Pulse	85.6 (8.4)	83.7 (5.3)	88 (11.6)	84.6 (9.8)
SpO_2	97.6 (1)	97.7 (1.3)	95.7 (4.4)	98 (0.5)
RR	21.7 (1.8)	21.5 (1.9)	22.3 (2.8)	21 (1.6)

Figure no.1 Age distribution of symptomatic and pre-symptomatic patients



Figureno.2
Gender distribution of pre-symptomatic and symptomatic patients



REFERENCES

1-World Health Organization COVID-19 Dashboard Available from: https://covid19.who.int/ as accessed on 16/08/2020

2-Data | COVID-19 has affected higher share of men in India, difference relatively lesser in other countries Available from: https://www.thehindu.com/data/data-covid-19-has-affected-higher-share-of-men-in-india-difference-relatively-lesser-in-other-countries/article31561913.ece as accessed on 16/08/2020

3-COVID-19 Dashboard by Government of Maharashtra Available from https://www.covid19maharashtragov.in/mh-covid/dashboard#?_trenddis=Aurangabad as accessed on 16/08/2020

4-50% of COVID-19 deaths in age group of above 60 years, 68% men Available from: https://www.dnaindia.com/health/report-50-of-covid-19-deaths-in-age-group-of-above-60-years-68-men-2835908 as accessed on 16/08/2020

5-Sadhana Misar Wajpeyi, AYUSH Ministry's Health Advisory in COVID-19- A Critical Review, Int.J.Res.Pharm.Sci.,2020,11(SPL)(1),201-207

6-Upadhyay AK, Kumar K, Kumar A, Mishra HS. Tinospora cordifolia (Willd.) Hook. f. and Thoms. (Guduchi) - validation of the Ayurvedic pharmacology through experimental and clinical studies. *Int J Ayurveda Res*. 2010;1(2):112-121. doi:10.4103/0974-7788.64405