

Giloy- A ray of hope, when world was threatened during corona Pandemic- A study

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Abstract

Introduction: Treatment and management for SARS COV-2 were doubtful in the initials of the corona pandemic. The health system was preparing itself to tackle the rapidly evolving pandemic. The potential of Ayurveda, which is one of the 5000-year-old branches of traditional Indian medicine (TIM) systems, employing medicines obtained from plants and other natural sources, for SARS-COV 2 has been explored by this comparative and open-label retrospective study.

Methods: Here we reported the medicinal effects of Ayurvedic medicines along with Allopathic drugs on 50 COVID-19 patients with mild symptoms, in one of the hospital of Lucknow. The cases were diagnosed with COVID-19 infection by RT-qPCR of nasopharyngeal swabs and throat swabs. Informed consent was taken from the patients, and the data were categorized into ‘Allopathic plus Ayurvedic’ (n = 25) and ‘Allopathic only’ (n = 25) groups, on the basis of the type of therapy the patients decided to receive, that is Ayurvedic along with Allopathic medicines or Allopathic medicines only, respectively. Ayurvedic medicines were given in oral forms extract of *Tinospora cardifolia*. The Allopathic drugs given were Acetaminophen, Vitamin C, Zinc, Azithromycin, Ivermectin, and anti-histamines. All patients of both groups were observed for symptomatic relief.

Results: The key outcome of this research was the symptomatic improvement from SARS-COV-2. Data gathered for a period of one month, showed a greater number of patients exhibiting symptomatic relief in ‘Allopathic plus Ayurvedic’ (80.33 %) than in the ‘Allopathic only’ group (60.78 %) within the first 10 days of treatment. There was no significant side effect observed. This was found that early and safe symptomatic relief among patients treated with Ayurvedic plus Allopathy medicines. **Food and nutrition value of *Tinospora cardifolia* was also benefitted to the patients in early outcome.**

Conclusion: Covid-19 patients receiving Allopathic along with Ayurvedic medicines on average were symptomatically improved faster in comparison to those receiving Allopathic medicines only.

KEYWORDS- *Tinospora cardifolia*, SARS COV-2, Ayurveda, Allopathy.

Introduction

It is seen that human corona viruses generally cause symptoms of the common cold, except for the currently emerged beta corona viruses, like Middle Eastern Respiratory Syndrome (MERS)-Co-V [1], severe acute respiratory syndrome corona virus (SARS-Co-V), and SARS-CoV-2 which can lead to fatal disease and death [2]. SARS-CoV-2 is recognized as the main disease-causing agent of COVID-19 and the present spreading pandemic, which emerged in 2019 and rapidly spreading across the globe. Now it is evolving into the delta and omicron variants and recent subvariants which are highly transmissible strains, [2]. Persons suffering from COVID-19 showed a range of clinical symptoms, from asymptomatic to mild (cough, loss of taste chest pain, back pain) to severe and finally death. There were more than 464 million diagnosed patients and more than 6 million expiries across the globe[3]. Although many vaccines have been developed and approved for adults, adolescents, and older children (March 2022), no vaccine has been approved for babies less than 5 years. It is envisaged that vaccination of all more than 5 years will lead to increased infection in lower age groups below 5 years. Access to safer and highly effective medicine would increase our ability to treat SARS-CoV-2 infections further in the future. Presently, there are no widely available medicines for the treatment of COVID-19 [4], however, early research from many drug therapy options is showing promising outcomes. Fluvoxamine (Abbott Laboratories) is found to be good in treating COVID-19 by preventing severity and decreasing hospital admissions [5], while Novartis found an outcome from their Phase 2 study for Ensovibep showing the reduction in the viral load in eight days. Pfizer has declared promising results from study trials of Paxlovid™ which targets 3C-like protease of the SARS-CoV-2, while Merck has found the same outcomes from clinical trials of Molnupiravir, a nucleoside analog[6,7]. The last two have been approved by the FDA for use in several nations. The application of nutraceuticals and/or dietary supplements, like herbal medicines, is well known for treating many lung conditions[8,9] and their antiviral characteristics have also been searched in the context of the present COVID-19 pandemic [10,11,12]. Some study groups have found the potential use of natural extracts already available for some other indications, like Ayurvedic formulations widely used in Indian countries and the diaspora [13]. Ayurveda is an ancient Indian holistic system of therapeutics that uses plant products as one of the chief ingredients for their formation [14]. Because of the widespread use of Ayurvedic medicines as complementary medicine, they give an attractive avenue for the formation of treatment against COVID-19 which would be safer and more effective [12, 15]. In the above context, we aim to search the available literature on the effectiveness of natural products most widely used in Ayurvedic formulations with potential anti-SARS-CoV-2 activity, in order to add the current stage of knowledge of this research and avail the stepping-stone in the development of effective anti-viral therapy.

Food and Nutrition value of *Tinospora cardifolia*-*Tinospora cardifolia* also have content of various nutrients, vitamins, minerals and trace elements. It contains antioxidants like grape seed extract, vitamin C, vitamin E, zinc and selenium. It also contains high fibre content

approx. (15.9%), proteins (4.5% to 11.2 %), sufficient carbohydrate (61.66%) and low fat (3.1%). Its nutritional value is 292.54 calories per 100 gm.

Material and Methods

2.1. Study population and study design

Informed consent was taken and the clinical data of 50 patients who decided to be provided either Allopathic treatment along with Ayurvedic (n =25) or Allopathic drugs only (n = 25) between May 2020 and June 2020 was mined. All the patients, after being diagnosed with COVID-19 by RTqPCR of nasal and throat swab samples, were hospitalized in a hospital in Lucknow, India. Data was gathered from medical record departments (MRDs). Clinically, all the cases were mild symptomatic. International travel history was absent in all. The overall result of this research was symptomatic relief of COVID-19 infection.

2.1.1. Inclusion criteria

1. All the patients between 14–80 years of age of either gender, who were mildly symptomatic with, fever, cough, headache, fatigue, sore throat, nasal congestion, and dyspnea (mild) were selected.
2. All cases were confirmed to be positive for COVID-19 by RT-qPCR sample from a nasopharyngeal swab.
3. Ability to give informed consent.

2.2. Exclusion criteria

The following patients were excluded from the study.

1. Patients with symptoms of severe COVID-19 and ARDS symptoms.
2. Patients with any comorbid illness, like decompensated liver failure, decompensated heart failure, and end-stage renal disease (ESRD), with a life expectancy of less than one year.

2.3. Assessment of Study completion

It included improvement in cough, return of normal body temperature, and relief in fatigue, headache, nasal congestion, sore throat, and dyspnoea. Symptoms alleviation was monitored for at least three days for any relapse before discharge.

2.4. Treatment

The Allopathic drugs were given on the basis of the symptoms of the patients. Provided therapeutics regimen of Allopathic drugs were Azithromycin, Vitamin-C, Ivermectin, zinc, acetaminophen, and anti-histamine.

2.5. Patient evaluation

Baseline clinical manifestations of the patients like, fever, fatigue, headache, cough, nasal congestion, sore throat, and dyspnoea were noted. Subsequently, these symptoms were regularly observed along with any adverse effects of the treatment.

Results

3.1. Treatment chosen as per patient will affect the sample sizes of study groups

In this study, we intended to have a pool of mildly COVID-19 patients. The intervention was to include a wider range of age and thus, the study participants' age was between 14–80 years. As the consent of patients was the main modulator in making two separate groups of patients, there were 25 patients in the Allopathic and Ayurvedic group and 25 in the Allopathic group. Patients with severe COVID-19 were excluded from the study.

3.2. Age and gender distribution among the study participants

We analyzed the age distribution of the COVID-19 patients that were studied in this research and observed that 58.88 % were in the age bracket of 29–57 years, followed by 19.23 % and 13.76 % in the age groups of 17–30 and > 57 years, respectively. Only 4% of patients were found in patients < 17 years of age. The same was noted separately for both research groups. Mortality was not observed. This was reported that male predominance was there in all age groups. There 60.34% of total patients below 17 years and between 17-30 years of age, were male and 39.66% were females. Similarly, 61.26 % of total patients between 30–57 years were male while 38.74 % were females. To rule out any chance of skewed gender distribution which can affect the primary outcome of treatment of Ayurvedic medicines on COVID-19, the male-female percentages in the Allopathic and Ayurvedic and Allopathic only groups were analyzed. The gender distribution among both the groups was the same; the Allopathic and Ayurvedic groups had 65 % male and 35 % female and the Allopathic group had 70 % male and 30 % female.

3.3. Patients receiving Ayurvedic plus Allopathic medicines exhibited faster recovery

The highly encouraging finding is the trend of expedited symptomatic resolution in the Allopathic and Ayurvedic groups. 23 out of 25 cases in this group were symptomatically resolved from COVID-19 symptoms within the first 10 days of treatment exhibiting 92% recovery. On the other side, out of 25 patients in the Allopathic only group, 15 experienced symptomatic relief making a 60 % recovery within the first 10 days. Up to 10 days of treatment, the same percentage of the resolution was observed in either of the groups. However, the resolution rate was found more in the Allopathic and Ayurvedic groups, in comparison to the Allopathic group only, by day 16 of the treatment. This proportion became 1 by day 20, suggesting 100 % relief by this time in the Allopathic and Ayurvedic groups. Unlike the Allopathic and Ayurvedic groups, the recovery proportion in the Allopathic only group by day 20 was 0.8, suggesting visible lagging behind. However, the estimated p-value was 0.0756, indicating that the differences between the two curves were statistically nonsignificant. This non-significance was likely to be due to the small sample size. Therefore, a statistically significant medicinal effect on COVID-19 symptoms in the Allopathic group, in comparison to the Allopathic and Ayurvedic groups, could not be established. A larger uniform sample size in patient distribution is needed to have statistical significance. No, side effects were observed for Ayurvedic medicines in this study. This was another important finding.

Discussion

The aim of this research was to establish the effectiveness of Ayurvedic medicines for COVID-19 infection. The premise for this research has been the identification of the epidemic in Ayurveda, an indication of therapeutics for disease with symptoms similar to those of mild to moderate cases of COVID-19, and findings on immune-modulatory, anti-viral, and anti-inflammatory effects of the Ayurvedic products being studied or their individual constituents [16,17,18,19]. From the historical ground, Ayurveda is a well-known form of treatment. Medicines used in this research were according to the knowledge from many texts of Ayurveda. The existing natural chemical compounds in these medicines are known for well-established safety profiles in other indications, which were also proved by the

present study. The authors confirmed by the exclusion point that no critical patient was studied in this research. Nevertheless, the present research has reported observations encouraging sufficient proof to consider the benefits of Ayurvedic compounds against the COVID-19 virus and needs similar research on a larger number of patients. The present research was observed and evaluated by well-qualified physicians. The harms and burdens of the Ayurvedic medicines given in the present research were evaluated prior to their application to patients.

Moreover, the Ayurvedic medicines applied in current research have a strong base in Ayurveda, with no adverse effects on their use. The formulations and recommended indications of the Ayurvedic extracts given here are already documented in Ayurveda, indicating that these medicines have already been in use with no side effects. The authors noticed that the cases who selected Ayurvedic and Allopathic medicines together improved their signs and symptoms quicker in comparison to those who took only Allopathic treatments. This was proved by the more percentage of research participants on Ayurvedic plus Allopathic medicines improving early days as compared to those who took Allopathic only. Nearly most of the patients on Ayurvedic plus Allopathic medicines totally improved their symptoms by the 17th day of therapy while the recovery proportion was slower at 0.8 among those who decided to take the Allopathic only. As the sample size is small, this reporting with a log-rank p-value of 0.0756 was not quite statistically significant. COVID-19 does viremia after entering the body and the commonest clinical manifestations are fever, fatigue, diarrhea, and other non-specific symptoms. The phytochemicals existing in the Ayurvedic extracts mentioned here have mechanisms of action at various steps of viremia, like as, inhibiting viral entry [16], preventing viral replication (unpublished data), and lessening the inflammation of the airway tract and strengthening immunity [17]. Reports from a randomized placebo-controlled pilot clinical study revealed that the effectiveness of these Ayurvedic compounds on a greater patient pool upholds our observations from current research [20]. The findings that Ayurvedic plus Allopathic medicines were doing comparatively quicker symptomatic relief of COVID-19 in comparison to Allopathic-only treatment actually testifies to the newly originated concept of herb-drug interactions (HDI) [21]. Due to an enhancement in the belief of integrative treatment protocol of combining conventional and complementary principles, a good understanding of HDIs has become necessary, because, this does not every time lead to synergism [21]. In this scenario, the combinatorial treatment is found to have experienced a synergistic impact which is proved by visibly lesser symptomatic relief of COVID-19 in the Allopathic group only. Thus, despite of a pre-meditated design, the current research was shaped non-uniform sizes of the study groups was a weak point of the present study. However, both the study groups were comparable in terms of many more, except for the sizes of groups. It was found that the gender distribution within both groups (65 % male, 35 % female in the Allopathic and Ayurvedic group versus 70 % male, 30 % female in the Allopathic group only) clearly tells that they are comparable in terms of the disease prevalence with respect to gender. COVID-19 confirmed patients in the present study were mildly symptomatic, hence, the efficacy of Ayurvedic compounds on severe cases and cases with a number of co-morbidities needs more evaluation as the reports from this study cannot be applied to them. However, the research

was non-blind and was based on case priority rather than random allocation. These weaker points might cause a lack of balance on unmeasured values. Nevertheless, the report from the present research does serve as a forerunner for a randomized study with a larger sample size to address these draw backs effectively.

Conclusion

In conclusion, this research reports that in comparison to Allopathic medications only, Allopathic along with Ayurvedic medicines can lessen the time to symptomatic resolution in mildly symptomatic COVID-19 cases. This research also emphasizes the effectiveness of Ayurvedic products (with *Tinospora cardifolia*) against COVID-19 infection.

Conflict of interest-none

Acknowledgement-none

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