

Justicia adhatoda - A Proven Medicine for COVID-19: Clinical Survey Report**Sobitri Sen¹, Abhrajit Bag² and Arijit Bag^{3*}**¹Department of Chemical Sciences, Indian Institute of Science Education and Research Kolkata, West Bengal, India²Barajaguli Gopal Academy, Jaguli, Nadia, West Bengal, India³Department of Applied Sciences, Maulana Abul Kalam Azad University of Technology, Simhat, Haringhata, West Bengal, India***Corresponding Author:** Arijit Bag, Department of Applied Sciences, Maulana Abul Kalam Azad University of Technology, West Bengal, India.**Received:** March 29, 2021**Published:** May 24, 2021© All rights are reserved by **Arijit Bag., et al.****Abstract**

Background: In our previous report, we mentioned that natural alkaloids vasicoline, anisotine, etc. present in *Justicia adhatoda* leaf extract are excellent inhibitors of protease and RNA dependent RNA polymerase (RdRp) of the SARS-CoV-2 virus. The prolonged existence of the COVI-19 pandemic is inspiring researchers to think out a plan to fight against this virus which is frequently changing its genetic material and still life threatening even after the application of vaccines of different companies around the globe.

Objective: Our claim that *Justicia* leaf extract may be excellent herbal medicine and natural prevention material for COVID-19 disease needs clinical evidence in favor of this before getting the approval of its application. The objective of the present report is to proclaim the success of the clinical implementation of *adhatoda*.

Methods: VASAKA tablets and *Adhatoda* Syrup and *Adhatoda* Powder are used among 400 families (near about 1500 people). The application area is located in Erode, Tamil Nadu. A group of people is treated with 5 ml *Adhatoda* Kizhayam on Monday Wednesday and Friday. On Tuesday, Thursday and Saturday, they were given other Tamilnadu herbal Kabasura Kudineer. Another group of people was advised to take VASAKA pack of 60 tablets at the rate of one tablet in an alternate day.

Results: Everyone who had taken the treatment was allowed to live a normal life. They travelled in public transport, worked in industries as regular. After two months, no one is affected by COVID-19 disease though the spread of the disease in the specified area was very high. 15 confirmed patients were treated additionally with *Adhatoda* in addition to Allopathic treatment. All recovered well.

Conclusion: From the clinical study we have reported here, we come to the conclusion that the anti-viral quality of *Adhatoda* which was observed from the simulation studies is justified. It is also observed that *Adhatoda* will be equally effective for the new strain of COVID-19. The results from the clinical trial report of *Adhatoda* presented here is extremely enthusiastic and should be employed to fight against the present pandemic.

Keywords: COVID-19; SARS-CoV-2; *Justicia*

Introduction

The continuation of prolonged pandemic due to SARS-CoV-2 [1-5] retrovirus is provoking researchers to devote themselves to pursue research in the field of drug designing and vaccine mak-

ing for COVID-19 disease [6-11]. In this context, we have reported in our earlier article in March 2020 [12] that different alkaloids present in the *Justicia adhatoda* leaf extract like Vasicoline, Aniso-

tine, etc. have excellent drug efficacy towards COVID-19. Our work was followed by different research groups [13-17] which revealed that *Justicia* leaf extract is among the best proposed drug for COVID-19 according to different molecular simulation results [18-21]. Though, at present (March 25, 2021) there are a handful of vaccines available in the market, the quest for the COVID-19 drug is at the highest level of demand due to its dexterity to frequent mutation [22]. It is now proved that the market available vaccines are unable to give protection against new mutated variety of COVID-19 which is termed as COVID-20 in some articles [23,24]. As a result, the number of new patients per day is increasing rapidly which is termed as the second wave and proclaimed that it may be more harmful than the previous. In this respect, we are prone to know the clinical evidence of success of *Justicia* based drugs against COVID-19. In present article, we have discussed the clinical application report of *Justicia adhatoda*.

Materials and Methods

Background of clinical trial

The efficacy of *Justicia* to prevent or treat COVID-19 was first reported by us in March 2020 which was noticed and get attracted by several common people along with various research groups all over the world. But there was a hesitation around it as a few fake news and unscientific methods of COVID-19 treatment were also made rumor in the society by the time in India and other countries also. As a result, governments of different countries were forced to take action against any harmful propagation of fake methods of COVID-19 treatment though the methods and medicines which were used in different countries were not scientifically full proved and caused death in huge numbers around the globe. In such circumstances, it was very difficult to make an impact on society by this life-saving research which was very unfortunate. Among all of these worlds of disbelief, thank God, there were also few rays of hope.

The Chairman and Managing Director of KSK International, a two Star export house, exporting Leather (www.kskstannery.in) at Erode, Tamil Nadu, India, Mr. Rafiq was impressed and belief in our research work. As soon as he came to know of Bromhexine/*Adhatoda*, in mid-July 2020, he got in touch with a nearby renowned Siddha Company SKM Siddha P. Ltd. He shared the online research papers [12-16], with the Siddha Doctors over there and they were excited. They decided to supply *Adhatoda* for their employees and their families in sufficient volume. This has served as a clinical trial of our proclamation. Though we were not aware of it at that time

and we had no influence over there. Thus, it was a completely unbiased study.

Materials and human strength of clinical trial

SKM Siddha supplied VASAKA tablets, *Adhatoda* Syrup, and *Adhatoda* Powder. A VASAKA pack (Figure 1a) was full of 60 tablets. Another material, Tamilnadu herbal Kabasura Kudineer, was also employed with VASAKA tablet and *Adhatoda* (both in the form of Syrup and Powder) for one part of people under this clinical trial. The total number of people under this trial was divided into two groups. There were 300 people who were the employees of the export house mentioned above was in group-A. In Group-B, there were the family members of the employees of Group-A and their relatives. The number of people in Group-B was nearly 1200.

Method of application

On arriving at the factory in the morning, every employee (Group-A members) was given a dose equivalent to 5 ml *Adhatoda* Kizhayam (Figure 1b) on Monday, Wednesday and Friday. On Tuesday, Thursday and Saturday, they were given Kabasura Kudineer. The members of Group-B people were advised to take a VASAKA tablet at the rate of one tablet in an alternate day for the period of one month.

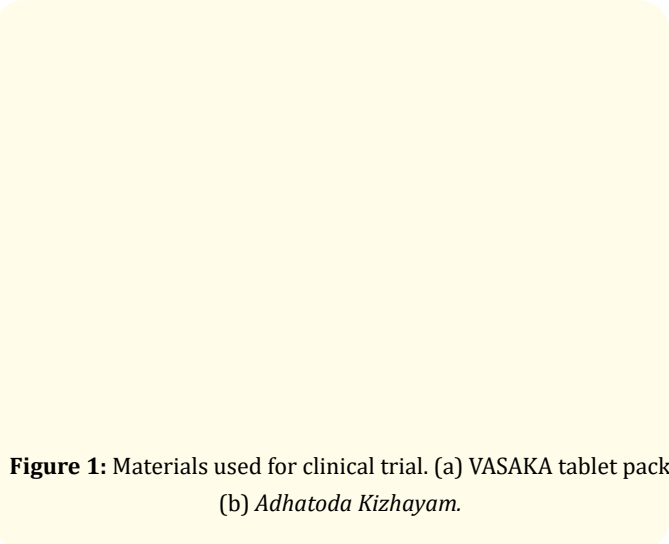


Figure 1: Materials used for clinical trial. (a) VASAKA tablet pack (b) *Adhatoda* Kizhayam.

Results and Discussions

Adhatoda as natural remedy for COVID-19

In spite of alarmingly raise of COVID-19 in the Erode neighbourhood from mid of August to 20th September of 2020 none got affected among the people under our clinical trial. During this time

period, there were manifold cases in the community who did not report to Govt but had fever, loss of smell symptoms. They were home quarantined and recovered. Only those cases were reported and recorded who developed breathlessness problems and got themselves admitted in hospitals. Taking into account of all reported and suspected cases, the COVID-19 active case density at that locality at that period was nearly 5 out of 10. The people under clinical trial were in their daily routine. All Group-A people regularly attended the factory work. They travelled using public transport. In the other hand, Group-B people were also free to go to market and other public places where there was high risk of COVID-19 infection. Fortunately, among 1500 people under *Justicia adhatoda* treatment, none got affected with in the time period of observation. Till this report time (25th March 2021) no one is affected by COVID-19 who took *Adhatoda* treatment within this clinical trial or persons started *Adhatoda* treatment inspired by the initial success of this trial.

From the above study, we can assert that *Justicia adhatoda* leaf extract is a natural remedy for the COVID-19 disease. Its way of working may be the same as described in our earlier report [3]. Here we like to mention that till now we have not performed any simulation or experimental test to know whether any antibody or similar kind of protein secretion happens or not due to the administration of *Adhatoda* tablets/powder. Thus, we could not claim it as a vaccine. But it acts as the same. The only difference is that the expiry time period of its action is yet to be tested. To avoid this limitations we may use it in short time intervals (may be once in a week). A survey was conducted after three months from the beginning of the clinical trial. It is observed that there was no side effect (100% response in favour of no side effect. Data available on request to the corresponding author) of its use. Of course, this is a natural product which is used for cough related problem from the ancient time. It acts as a natural immunity booster also. Thus, there is no risk of its frequent use. The use of *Adhatoda* has another advantage. Both the tested alkaloids, anisotine and vasicoline, which are there in the *Adhatoda* leaf extract inhibit the protease and RdRp of SARS-CoV-2 virus. Thus, it must be equally effective against the new strain of virus load which is termed as COVID-20 virus. In COVID-20 virus, the mutation is observed in the spike protein of the virus. Its way of attack has changed from the previous one. As a result the market available vaccines are unfruitful against the new strain. In this scenario, the importance of *Adhatoda* is enhanced because its action would not be hampered by the viral mutation. In other way, we can say that there is very little chance of the development

of drug resistance against *Adhatoda* by SARS-CoV-2.

Adhatoda as effective drug for COVID-19 positive patients

So far there is a very little test of the use of *Adhatoda* as a drug for active COVID-19 patients. 15 confirmed patients were advised to take *Adhatoda* in addition to Allopathic treatment. All recovered well. Of late, some allopathic doctors have started believing *Adhatoda* in that area and used it when they developed symptoms. All of those patients recover quickly. Interestingly, over 10 persons of different families who developed obvious Covid symptoms but took *Adhatoda* Kiyazham 10 ML or Vasaka tablets twice a day, after breakfast and/or after dinner, when tested for RTPCR after two days, the result was invariably Covid Negative. Therefore, we may conclude that the antiviral quality of *Adhatoda* might be clearing/killing the virus in the nose, throat, and lungs. All those who took to *Adhatoda* showed immediate remarkable improvement in breathing and O₂ levels. Hence, *Adhatoda* may be prescribed for the treatment of severely affected COVID-19 patients.

Conclusion

Further raising of COVID-19, particularly in form of a new variety, and the failure of market available vaccines [25] have increased the anxiety of common people as well as the government of different countries. The extension of lockdown would not be a solution as the global economy has badly infected due to the year-long existence of the COVID-19 pandemic and full or partial lockdowns all over the world [26-30]. The only way to escape from this frightening situation is to find out the cheap and abundant drug for COVID-19. *Justicia adhatoda* based drugs (*Justicia-M/30/200* in Homeopathy, VASAKA in Ayurveda) full fill these criteria in all respect. The clinical trial report of *Adhatoda* presented here is extremely enthusiastic and should be employed to fight against the present pandemic.

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