

# COVID-19: A Case Study of Using Vitamin C Enriched Plants and Ascorbic Acid as Cure

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**Abstract** The effects of the Coronavirus Disease 2019 (COVID-19) have culminated in a pandemic of great magnitude, with no specific cure in view. Efforts are ongoing by Alternative medicine practitioners to use an existing or new line of herbal products to manage this novel virus. This study reveals that garlic, ginger, and lime when blended, boiled in water, and allowed to cool before drinking, healed the patient with typical signs and symptoms related to COVID-19. Healing was evident in 3 days as observed in our case study who lives in Abuja, Nigeria after this herbal mixture was taken alongside vitamin C (Ascorbic acid). His family was also advised to be on Ascorbic acid for prophylaxis with none of them isolated; yet, they were not infected. Hence, we posit that herbs with a high content of vitamin C be utilized in the management of cases presenting with typical symptoms of COVID-19.

**Keywords:** COVID-19, ascorbic acid, garlic, ginger, lime

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## 1. Introduction

On March 11, 2020, the World Health Organisation (WHO), in her press briefing, described the COVID-19 outbreak as a threat of public health interest or aptly put, a pandemic [1]. Her Director-General called on nations across the world to expedite action. Perhaps, due to the way, the COVID-19 took its toll on China, Italy, and the United States of America, despite their sophisticated medical technology; and exposed the loopholes in the health systems of the developing countries.

The early signs and symptoms of COVID-19 include fever; cough; loss of taste and smell; chest pains; and shortness of breath. In severe cases, the infection can cause pneumonia, severe acute respiratory syndrome and sometimes death, especially in people with underlying health challenges like organ malfunction, hypertension, and diabetes [2,3].

The Global Coronavirus Infections sums up to 11,179,168 with 528,347 deaths showing a 4.73% death rate and 55.77% survival rate (6,235,173 recoveries), and Nigeria is ranked 48 on the global list of infection with 27,564 reported cases, 628 deaths showing 2.28% death rate and 40.16% survival rate (11,069 recoveries) as reported by Corona Scanner Realtime coronavirus statistics on July 4, 2020, at 12.45 am with a daily infection rate of 454 persons.

The COVID-19 pandemic is currently having a resurgence in China, Singapore, and South Korea while Nigeria is recording a higher number of infections daily, due to increased testing capacity as advocated by Obeta *et al.* [4] and Etukudoh *et al.* [3].

Personal hygiene has been advocated among the healthcare workers [5] as one of the significant ways of prevention, yet, the incidence of the novel virus keeps rising at an alarming rate across the globe, including Africa [6] may be due to the zoonotic nature [7,8] of the novel virus.

In Africa, the use of herbs in the management of myriads of ailments has been a tradition [9], and COVID-19 may not be an exception. The index case, as announced in Nigeria by the Federal Ministry of Health, FMOH [3,10] prompted many herbal medicine practitioners to go on a search for a herbal remedy to contain this disease. The most common herbs in consideration are edible and nutritious plants that have been routinely consumed without toxic effects, which include garlic (*Allium sativum*), ginger (*Zingiber officinale*), and lime (*Citrus Limonum*).

## 2. Case Report

A certain educated man of age 35 years started developing the signs and symptoms typical of COVID-19

in Abuja Nigeria. The signs and symptoms presented were: loss of taste and smell, coughing, fever, headache, chest pains, joint pains, and general body discomfort. He was suspected of having been exposed to the flu due to the nature of his job.

Ordinarily, he could have just called the Nigerian Centre for Disease Control (NCDC) to come to collect his sample and perhaps get him into isolation/treatment. However, the experience his friend had with NCDC with regards to delay, prompted him to call on us for alternative care since getting the attention of NCDC involves lots of protocols leading to delays. The NCDC staff who was contacted via phone calls, adamantly requested that the protocols of registration and sample collection must be duly followed as there is no preference. While the due process was being followed to get the attention of NCDC, we advised him to take some herbal mixture before the staff of NCDC arrives. The solution was made up of two ginger rhizomes, two garlic bulbs, and two lemon fruits all crushed together and homogenized in 200ml of boiling water. He took this solution twice daily with Vitamin C tablets (2000mg/day), while the family members took 1000mg for adults and 500mg for children as prophylaxis.

The symptoms were gone within three days. Hence, no need waiting for the arrival of the staff of NCDC, as he earlier opined. He continued with the mixture for another three days and Vitamin C intake for seven more days after which he tapered the dose of the Vitamin C to 1000mg within five days.

On May 18, 2020, the subject in appreciation put a testimony message to our team when he said: "no matter how Nigeria downplay local contents, we (I in particular) will keep announcing the wonderful discovery of hot water, ginger, garlic, lemon and Vit C tabs in dealing with the virus". The subject also confirmed that no member of his family eventually developed such symptoms.

### 3. Discussion

Though up to today, there is no official treatment that has been named globally to be the Cure for COVID-19 [12], this case study reveals that some herbs can be useful in the treatment and management of symptoms related to COVID-19. This agrees with Omer who opines the use of herbal remedy [13]; Tadepalli who tags alkaloids preparations of Indian Medicinal Plants as novel remedial approaches [14]; Jahan and Onay that demonstrates the antiviral potentials of some medicinal plants that inhibit human coronaviruses [15] and Mirzaie *et al.* describing some traditional medicine options for treatment of COVID-19 [16]. Some studies mostly mention Ginger, Garlic, and Lime as having antiviral properties and immune system boosting capacities [13,14,15,16,17]. Some prefer to describe them as part of nutrition that aid immunity towards the management of coronaviruses [18,19]. Some studies also show that Vitamin C can be gotten from Ginger, Garlic or Lime [11,19]. It is worthy to note that this case report included some doses of Ascorbic acid to the regimen within the time of the alternative therapy. The combinatorial therapy of Ascorbic acid and vitamin C rich fruits is in consonance with the hypothesis

that they could be used in the management of COVID-19 patients [11,22].

This case study has shown that the use of herbs and nutritional vegetables/plants in the management of COVID-19 could eliminate its peculiar symptoms among Nigerians/Africans as suggested in Madagascar, China, India, and other countries [20,21].

The testimony of the subject that no family members developed such symptoms after the use of Vitamin C has also shown that Vitamin C is excellent for prophylaxis in line with Ohanube and Obeta [11] and Ohanube G. [22]. However, this case report is limited by the fact that the COVID-19 was not confirmed through a medical laboratory testing, though the subject presented with the typical symptoms associated with COVID-19.

### 4. Conclusion

Ginger, garlic, lime, and ascorbic acid may have an inhibitory effect on the coronavirus penetration and proliferation in human cells, thereby arresting the multiple symptoms among the infected subject and possibly leading to cure.

Those convalescing from COVID-19 should be encouraged to use the combination of Ginger, Garlic, Lime, and Ascorbic acid by the local health authorities of their country. However, highly debilitated patients, geriatrics, and those with Ulcer should take this combo with caution.

Finally, vitamin C enriched vegetables and fruits should be encouraged in the management of patients presenting with COVID-19 as home remedies; and by traditional medicine practitioners and others, as this age-long practice remains a unique part of the African tradition.

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