

**OBSERVATIONAL STUDY OF EFFECTS OF AZITHROMYCIN AND
NUTRACEUTICALS ON COVID-19 PATIENTS**

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ABSTRACT

Azithromycin is an antibiotic, member of macrolide family. According to our survey study it is effective against bacterial and inflammatory disease (e.g.: sore throat). Our study do not promote azithromycin to be prescribed in Covid-19 pandemic as it is antiviral disease and number of patients has been prescribing azithromycin. When azithromycin was prescribed along with hydroxychloroquine, it showed effective in early stage in some patient while others has to change the prescription, hence use of azithromycin should stopped in covid-19 pandemic to avoid side effect of antibiotic. Nutraceutical foods has medicinal effect on health of human beings. It can prevent and treat disease, it consist of food

supplements like, probiotics and prebiotics, vitamins, herbal product, zinc, minerals and carbohydrates etc. Due to its naturally extracted food material, it has no side effect in many case and possess multiple therapeutic effect with lacking unwanted side effect which, trends consumer interest. It has also been in interest of antibacterial, antiviral and anti-inflammatory properties of nutraceutical, during covid-19 pandemic. Nutraceuticals does not have these properties but it promotes these activities indirectly by inducing increase in immune response. We conducted an online survey among 382 residents of India using quota sampling for gender, age and regional distribution. Data on Azithromycin consumption during pandemic, Use of Nutraceuticals for symptomatic treatment, Food consumption pattern before and during the pandemic were collected with a questionnaire. The purpose of this survey and review is to give main interest in nutraceutical to which anti-inflammatory and

antiviral roles has been taking part in younger adults at the time of their diagnosis or treatment. The pandemic caused sudden lifestyle changes, through social distancing and isolation at home, which represented a massive impact on food habits of people. In our survey we observed a drastic change in food habits and people's preferences shifted towards healthier foods that build up immunity.

KEYWORDS: Covid-19, Azithromycin, Nutraceutical, Vitamins, Probiotics, Giloy, Food behaviour, Carbohydrates, Proteins.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) was detected initially in late December 2019 in Wuhan, Hubei Province, China. It is an emerging respiratory infection caused by a novel coronavirus called Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2). Unfortunately, a curative treatment or vaccines for the SARS-CoV-2 virus were not developed that time, and the available medical interventions were supportive only. A limited number of in vitro and clinical studies have reported that some medications such as chloroquine, hydroxychloroquine, remdesivir and azithromycin have the potential to reduce the duration and symptoms of COVID-19 infection.^[1] our study is mainly based on observation of use of Azithromycin and its effects on Covid-19 patients. Azithromycin, an antibiotic with potential antiviral and anti-inflammatory properties, has been used to treat COVID-19.^[2]

Apart from antibiotics and pharmaceutical treatment, most people relied on consumption of nutraceuticals for treating common infections during pandemic.

Nutraceutical is a term derived from “nutrition” and “pharmaceutics.” The term is applied to products that are isolated from herbal products, dietary supplements (nutrients), specific diets, and processed foods such as cereals, soups, and beverages that other than nutrition are also used as medicine. Nutraceuticals are nutritional supplements which are used for health purposes other than nutrition. They may be used to improve health, provide physiological benefit, delay the aging process, prevent chronic diseases, increase life expectancy, or support the structure or function of the body. Nutraceuticals having multiple therapeutic effects are Honey, Vitamin sources, Green tea, Omega-3 supplements or sources, Giloy, Probiotics, Majority of Protein sources. Nowadays, nutraceuticals have received considerable interest due to potential nutritional, safety and therapeutic effects. The growing knowledge regarding

these products' ability to prevent or delay the occurrence of various health disorder has contributed in escalating the popularity and awareness of these products.^[3] Nutraceuticals are gaining popularity globally due to the rising awareness of their numerous health benefits among consumers. Our survey stresses on the use of such Nutraceuticals during Covid-19 pandemic and their beneficial effects observed.

In our Article the most commonly consumed Nutraceuticals were found to be Giloy, Honey, Multivitamins, Probiotics, Certain minerals by common people during Pandemic as a preventive measure against Covid-19.

The compounds present in Giloy have effective against various disorders, such as diabetes, cancer, neurological problems, fever, etc.^[4] The constituents of *Tinospora cordifolia* that were found to be Cordifolioside A, Palmatine, β -Ecdysone, and Magnoflorine has shown to have a widely varying pharmacological effects including anti-inflammatory and immunomodulatory activities.^[5] Honey plays an important role as an antioxidant, anti-inflammatory, anti-bacterial agent and augments the adherence of skin grafts and wound healing process.^[6] Honey and its compounds are drawing attention as an effective natural therapy because of its ability to attenuate acute inflammation through enhancing immune response. Several studies have proved its potential healing capability against numerous chronic diseases/conditions, including pulmonary disorders, cardiac disorders, diabetes, hypertension, autophagy dysfunction, bacterial, and fungal infections. Honey may be beneficial for patients with COVID-19 by boosting the host immune system, improving comorbid conditions, and antiviral activities.^[7] The main job of probiotics, or good bacteria, is to maintain a healthy balance in your body. When bad bacteria enters the body and increases in number. Good bacteria works to fight off the bad bacteria and restore the balance within the body. Good bacteria supports the immune function and controls inflammation.^[8]

Zinc is purported to be a vital mineral during COVID-19 infection because of its dual immunomodulatory and anti-viral properties. Studies have shown that zinc supplementation is able to decrease COVID-19 related symptoms such as lower respiratory tract infection. Omega-3 fatty acids exert anti-viral effects by inhibiting influenza virus replication. According to the European Society for Parenteral and Enteral Nutrition expert statement, the use of omega-3 fatty acids may improve oxygenation in COVID-19 patients, although firm evidence is still missing.^[9]

Vitamin C is well known to confer a protective benefit in infectious disease. Indeed, supplementation is known to support respiratory defence mechanisms, preventing viral infections, and reducing their duration and severity as well as having anti-histamine properties that can improve flu-like symptoms. Interestingly, patients with acute respiratory infections such as, pneumonia or tuberculosis have decreased plasma vitamin C concentrations and, vitamin C administration reduces the severity and duration of pneumonia in elderly patients. This key protective action against respiratory infection makes it a target of interest in COVID-19.^[9]

Vitamin D has been shown to enhance innate immunity through promoting the release of defensins and cathelicidins, the latter of which have demonstrated direct antimicrobial effects against enveloped and non-enveloped viruses. Vitamin D modulates helper T cell responses. It reduces T helper type 1 immune responses and induces Th2 responses. Vitamin D may prevent cytokine storms in patients with Covid-19.^[10,11]

Antioxidant and surfactant-mediating properties of vitamin A derivatives may have a protective role in the pathogenesis of ARDS, a known complication of severe cases of COVID-19. Vitamins B6, B12, and folate play important roles in both innate and adaptive immune responses and contribute to the normal function of the immune system. Deficiencies in these vitamins can impair immune functions. Vitamin B6 reduces the function and proliferation of T-lymphocytes and inhibits cytokine/chemokine release. Vitamin B12 (cobalamin) deficiency is particularly common in the elderly due to reduced absorption, and induces an imbalance in the cytokine and growth factor network in the CNS. Niacin (B3), folate (B9), and B12 being possible contenders for therapeutic strategy for Covid-19.^[11]

COVID-19 severely affects to those that are immunosuppressed, those with chronic ailments, and the elderly. Immunosenescence refers to the gradual deterioration of the immune system with age. Vitamin E has been illustrated to enhance T lymphocyte-mediated immune function in response to mitogens and IL-2 but also neutrophil and natural killer function, the decline of which is seen with increasing age. Oxidative stress is one of the driving pathological mechanisms of COVID-19. Vitamin E ingestion is known to lower the production of super-oxides and perhaps tilt the balance back in favour of antioxidants.^[11]

Zinc is a key trace mineral, involved in many biological processes including immunity and it is vital in both the innate and acquired responses to viral infection. The macrophage is

adversely affected by zinc deficiency, which can dysregulate intracellular killing, cytokine production, and phagocytosis. Zinc also functions as an antioxidant and can stabilize membranes.^[12] Zinc is purported to be a vital mineral during COVID-19 infection because of its dual immunomodulatory and anti-viral properties. Studies have shown that zinc supplementation is able to decrease COVID-19 related symptoms such as lower respiratory tract infection.^[9] Omega-3 fatty acids mainly consist of alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA). ALA is an essential fatty acid. EPA and DHA are to be consumed externally through diet.^[13] Omega-3 fatty acids are well known to have favourable effects on immunity and inflammation. Of interest, omega-3 fatty acids exert anti-viral effects by inhibiting influenza virus replication. According to the European Society for Parenteral and Enteral Nutrition expert statement, the use of omega-3 fatty acids may improve oxygenation in COVID-19 patients, although firm evidence is still missing.^[9]

Food supplies energy, enables growth and repair of tissues and organs. It also protects the body from disease and regulates body functions.^[14] The pandemic caused sudden lifestyle changes, through social distancing and isolation at home, which represented a massive impact on food habits of people.

Macronutrients, or macros, are essential nutrients the body needs in large quantities to remain healthy. Macronutrients provide the body with energy, help prevent disease, and allow the body to function correctly. There are three main types of macronutrients: proteins, fats, and carbohydrates.^[15] Protein calorie malnutrition impairs host immunity with particular detrimental effects on the T-cell system, resulting in increased opportunistic infection and increased morbidity and mortality in hospitalized patients. Arginine supplementation may enhance or preserve immune function and theoretically improve the host's capacity to resist infection.^[16] Diets high in fat influence immune responses and thus can affect the onset and severity of autoimmune disease. A low-fat diet can reduce the development of disease by maintaining normal immune responses. Unsaturated fat may influence T helper cell activity and therefore antibody production, whereas saturated fats may affect cellular immune responses which are dependent on membrane contact.^[17]

Prevention and/or correction of all risk conditions associated with serious COVID-19 disease (obesity, hyperglycemia, high glycemic variability, insulin resistance, hypertension) is mandatory, in consideration of new waves of infections, in the absence of effective

pharmacological therapies and vaccination. This could be obtained with a nutritional strategy aimed to induce fat mass loss, to reduce chronic inflammation, hepatic and systemic insulin resistance, and to improve nutritional status, cardiovascular health, immune response, glucose homeostasis and blood pressure control.^[18] Some dietary carbohydrates are quite healthy when consumed as part of a balanced diet, while others can be toxic, especially if overconsumed.^[19] Carbohydrate quality seems to have a more important role in population health than carbohydrate amount. A strong case can be made for consumption of high GL grains, potato products, and added sugars (especially in drinks) being causally related to obesity, diabetes, cardiovascular disease, and some cancers; whereas non-starchy vegetables, whole fruits, legumes, and whole kernel grains appear protective. Nevertheless, the metabolic effects of total and high GI carbohydrate may vary among individuals, depending on the degree of insulin resistance, glucose intolerance, or other inherited or acquired biological predispositions.^[20]

Survey

Plans of work

- Conducting a population survey on “OBSERVATIONAL STUDY OF EFFECT OF AZITHROMYCIN AND NUTRACEUTICALS IN COVID-19 PATIENTS AND COMMON PEOPLE.”
- Preparation of questionnaire for Google form.
- Analysing all responses
- Aggregation of similar factors for study
- Converting data from verbal to non-verbal (graphs, bar diagrams, pie charts) form in Microsoft excel
- Comparison study data.

Survey methodology

We conducted an online survey among 382 residents of India using quota sampling for gender, age and regional distribution. Data on Azithromycin consumption during pandemic, Use of Nutraceuticals for symptomatic treatment, Food consumption pattern before and during the pandemic were collected with a questionnaire.

Step 1- Sampling Size and The study population:- This includes determining who will participate in the survey – The survey was kept open to people of all age groups to study the effect of Azithromycin and Nutraceuticals as well as the Diet behaviour on covid-19 patients.

This survey was conducted online between 11th of February and 20th of February 2022 among 219 people.

Step 2- The study tools:- This includes deciding the type of survey- The most accessible and user friendly mode of survey was sought out to be google forms which were circulated to people via digital mode.

Step 3- Study design and setup:- This includes designing the survey questions and the layout – The survey was divided into 4 section, 1st section include the patients information, 2nd section include questionnaire on azithromycin, 3rd on nutraceutical and 4th on diet habits followed in covid-19 pandemic.

Step 4- Survey questionnaire formation:- The questions touched upon topics like, what is the action of azithromycin shows in Covid-19 patients? Which nutraceuticals preferred for boosting immunity? Also which type of diet they followed in covid-19 pandemic?

Step 5- Distributing the survey:- The survey was circulated among people of Maharashtra belonging to various age groups and sects of the society.

Step 6- Analysing the responses:- The responses were converted into tabular and graphical formats.

The following steps were followed for that-

- 1) The obtained data was segregated on the basis of people who aware about corona virus or who infected by corona virus.
- 2) This segregation was done for each parameter i.e., Age, sex,
- 3) Percentage was calculated for each one of them.

Survey form

Survey Form For Covid 19 Patients.

This form is for survey purpose and Project work only. Personal information will not be used for any other purpose.

Prepared by students of Ideal Institute Of Pharmacy, posheri, Wada.
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 Under Guidance of :
 Sir :- Dr. Dileep kumar Bharati. (Principal of Ideal Institute of Pharmacy) .

Antibiotic (Azithromycin)

Azithromycin is an antibiotic medication used for the treatment of a number of bacterial infections. This includes middle ear infections, strep throat, pneumonia, etc. This antibiotics is given to Covid Patient to reduce Strep Throat.
 अजिथ्रोमाइसिन हे एक प्रतिजैविक औषध आहे जे अनेक जिवाणू संक्रमणांच्या उपचारांसाठी वापरले जाते. यामध्ये मधल्या कानाचे संक्रमण, स्ट्रेप थ्रोट, न्यूमोनिया इत्यादींचा समावेश आहे. हे अँटीबायोटिक्स कोविड पेशंटला स्ट्रेप थ्रोट कमी करण्यासाठी दिने जातात.

Survey Form For Covid 19 Patients.

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 Switch accounts

***Required**

Nutraceutical Antibiotic

A nutraceutical is defined as any substance that is a food or part of a food and provides medical or health benefits, including the prevention and treatment of disease.
 न्यूट्रास्युटिकल म्हणजे कोणताही घटक जो अन्न किंवा अन्नाचा भाग आहे आणि रोग प्रतिबंध आणि उपचारांसह वैद्यकीय किंवा आरोग्य फायदे प्रदान करतो.

Survey Form For Covid 19 Patients.

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***Required**

Diet you followed

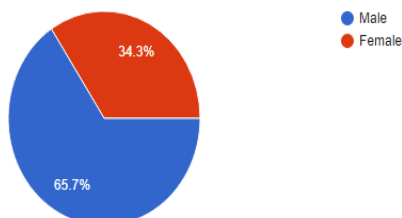
How often do you consume fruits and vegetables ? तुम्ही फळे आणि भाज्या किती वेळा खातात? *

☐ Often / अनेकदा
☒ Sometimes / कधी कधी
☐ Never / कधीच नाही

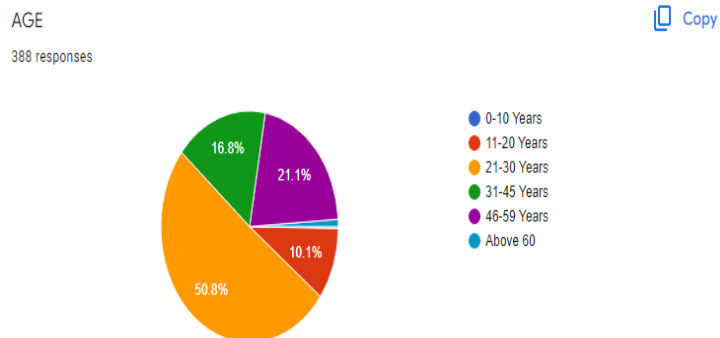
Survey Report: “Observational study of effects of Azithromycin and Nutraceuticals Products on Covid-19 Patients.”

Gender
 388 responses

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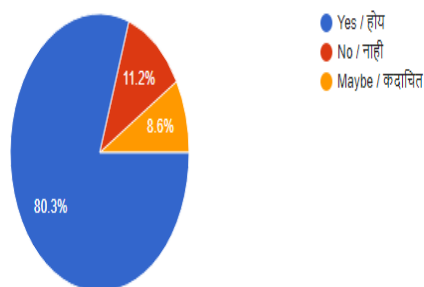
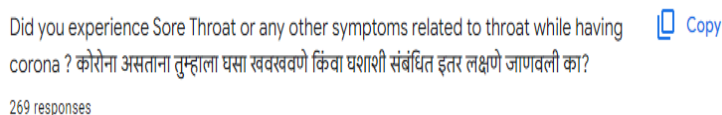


- As per observation see that 388 patients filled the survey for out of which 65.7% where male and 34.3% where female.

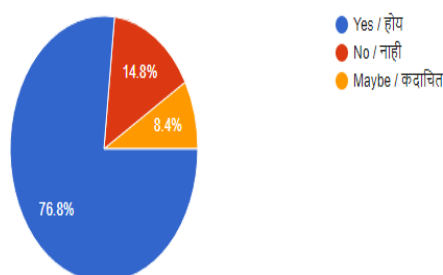
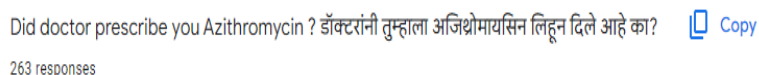


- 50.8% patients were between age group of 21-30 years. 16.8% patients were from 31-45 years age group. 10.1% patients were from age group of 11-12 years. 21.1% patients were from age group of 46-59 years and 1.4% were above 60 years.

Survey response of azithromycin



- 269 patients responded for this question and about 80.3% patients suffered from sore throat and only 11.2% patients did not experience sore throat, while 8.6% did not know whether they experienced sore throat.

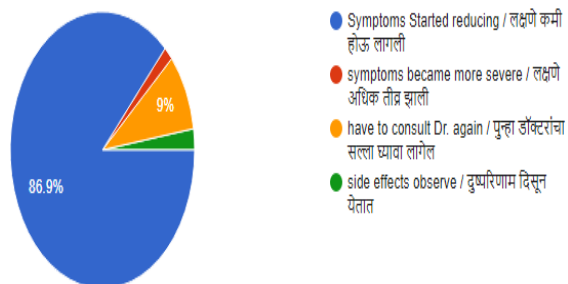


- 76.8% patients were prescribed azithromycin, 14.8% patients were not prescribed by azithromycin and 8.4% responded maybe.

After completion dose of azithromycin . अजिथ्रोमाइसिनचा डोस पूर्ण झाल्यानंतर

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244 responses

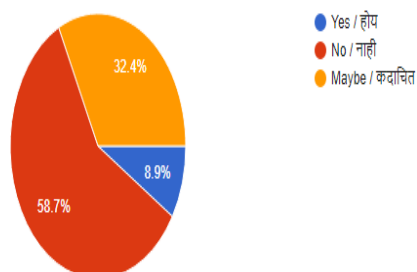


- After completion dose azithromycin about 86.9% patient's symptoms started reducing.
- 9% patients have to consult Dr. again.
- 2.5% patients observe side effects.
- 1.6% patients' symptoms became more severe.

Did you observe any side effects? तुम्हाला साइड इफेक्ट्स आढळले आहेत?

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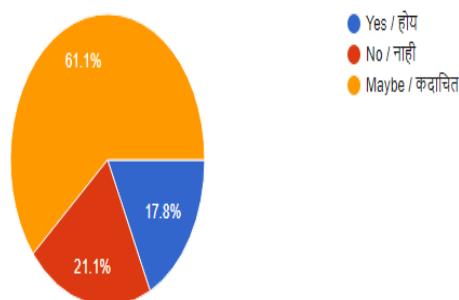
247 responses



- 32.4% patients did not know about side effects observe, 8.9% patients observed side effects and 58.7% did not observe side effects.

If did not cure the symptoms , did you change to nutraceuticals home remedies ? जर लक्षणे बरी झाली नाहीत, तर तुम्ही न्यूट्रास्युटिकल्सच्या घरगुती उपचारांमध्ये बदल केला आहे का?

90 responses



- 61.1% patients did not know about weather they changed to nutraceuticals, while 17.8% went for nutraceuticals and 21.1% did not prefer nutraceuticals.

After reviewing all questions , what is you suggestion , is azithromycin effective or not ? What was your observation before and after taking azithromycin ? सर्व प्रश्नांचे पुनरावलोकन केल्यावर, तुम्ही काय सुचवाल, अजिथ्रोमायसिन प्रभावी आहे की नाही? Azithromycin घेण्यापूर्वी आणि नंतर तुमचे निरीक्षण काय होते?

185 responses

It is effective only in early stages . when it is normal . else it is not effective
effective but symptoms was normal , and in our famliy members my son symptoms was severe hence it was not effective
effective but prescribed more dose, i have to take for 6 days 2 dose everyday.
azithromycin is not working to corona patients
works but in early stage
did not work have to change to home remedies
Azithromycin is well effective
not much effective , have to prescribed more dose

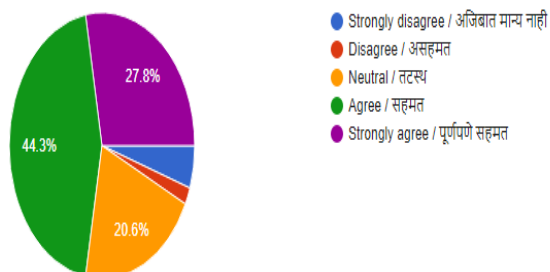
- Patients also gave us suggestion that it was effective only in early stage and in some case symptoms started reducing and once stop taking symptoms arise again. In some case patients has to prescribe more dose, even after more dose symptoms did not cure. Hence as per study azithromycin should stop prescribing to treat against Covid-19 Patients.

Survey responses of nutraceuticals

Do you agree that nutraceutical product are beneficial for you over Pharmaceutical product ? फार्मास्युटिकल उत्पादनापेक्षा न्यूट्रास्युटिकल उत्पादन तुमच्यासाठी फायदेशीर आहे हे तुम्ही सहमत आहात का?

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388 responses

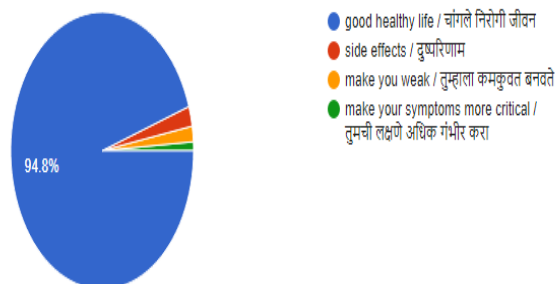


- 43.3% patients agree that nutraceutical product is beneficial for their healthy life over Pharmaceutical product. 20.6% believes it's neutral. While 27.8% patient strongly agrees while 5.2% patients strong disagree. 2.1% patient does not agree with nutraceutical product beneficial over pharmaceutical product.

The purpose of using nutraceutical product is to give न्यूट्रास्युटिकल उत्पादन वापरण्याचा उद्देश देणे आहे

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388 responses



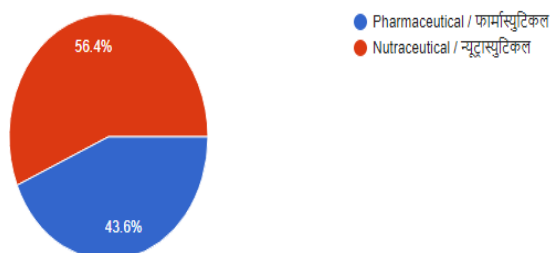
- 94.8% patients believe that purpose of using nutraceutical product is to give good healthy life. Only 2.3% patients observe side effect. 1.8% patient's thinks nutraceutical product make you weak and 1% patients marked as, symptoms made more critical.

which treatment would you prefer to treat antibacterial infection (Sore Throat) ?

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बॅक्टेरियाच्या वाढीस प्रतिबंध करणारा पदार्थ संसर्ग (घसा खवखवणे) उपचार करण्यासाठी तुम्ही कोणते उपचार पसंत कराल?

388 responses

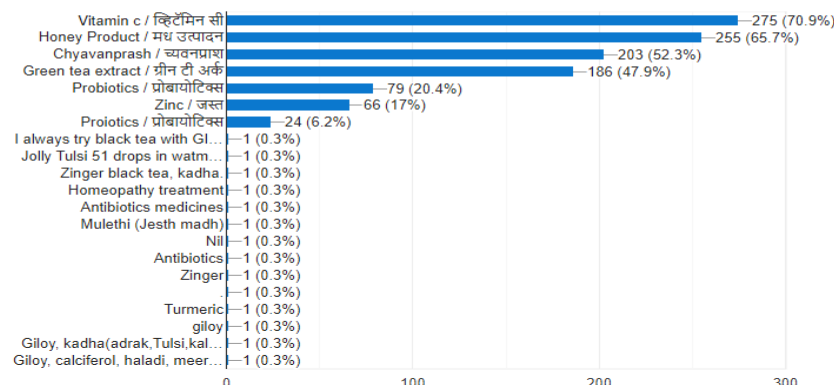


- 56.4% patients prefer Nutraceutical Product while only 43.6% preferred pharmaceutical product.

Mention the below nutraceuticals treatment you would use to treat antibacterial infection (Sore Throat). If you didn't use any of the products listed below, would you like to name other products that you used? बॅक्टेरियाच्या वाढीस प्रतिबंध करणारा पदार्थ संसर्ग (घसा खवखवणे) वर उपचार करण्यासाठी तुम्ही खालील न्यूट्रास्युटिकल्स उपचारांचा उल्लेख करा. तुम्ही खाली सूचीबद्ध केलेल्या कोणत्याही उत्पादनांचा वापर केला नसल्यास, तुम्ही वापरलेल्या इतर उत्पादनांची नावे देऊ शकता का?

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388 responses



- Majority of patient used vitamin c 70.9% and honey 65.7% to treat bacterial infection (Sore Throat). Patients also used product like chyavanprash, green tea extract, zinc, giloy etc.,

Were there any side effects observed after using nutraceutical product? न्यूट्रास्युटिकल उत्पादन वापरल्यानंतर दिसून येणारे दुष्परिणाम ..

234 responses

No
no
No side effects
No
NA
No side effects
Nothing
Not sure
.

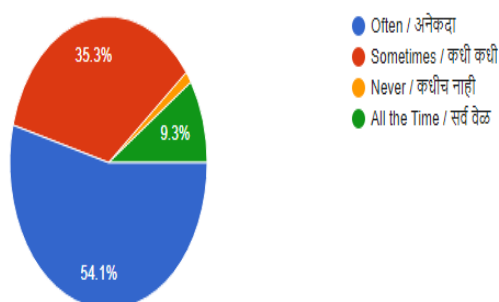
- According to survey report we can see that nobody experience side effects after taking nutraceutical products (home remedies).

Survey responses of food habits

How often do you consume fruits and vegetables ? तुम्ही फळे आणि भाज्या किती वेळा खातात?

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388 responses

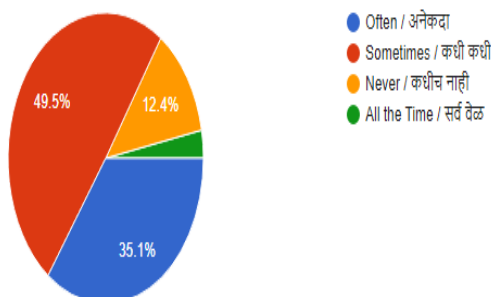


- Out of 388 patients, 35.3% patients consumed fruits and vegetables sometimes, 54.1% patients consumed often, 9.3% patients consumed fruits and vegetable all the time, While only 1.3% patients never consumed fruits and vegetables.

How often do you consume meat/ seafoods ? तुम्ही मांस/सीफूड किती वेळा सेवन करता?

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388 responses

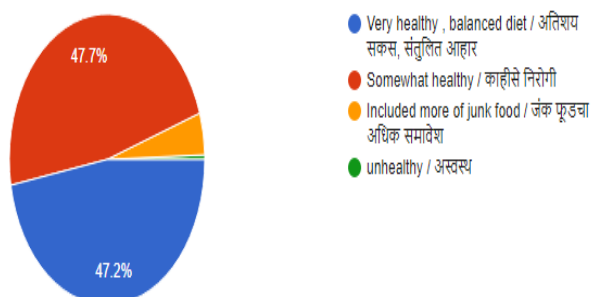


- 35.1% patients consume seafoods/ meat often, while 49.5% patients consume sometimes, rest about 12.4% never consumed seafood and meat and only 3.1% patients eat seafood and meat all the time.

How will you describe your diet before pandemic ? महामारीपूर्वी तुम्ही तुमच्या आहाराचे वर्णन कसे कराल?

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388 responses

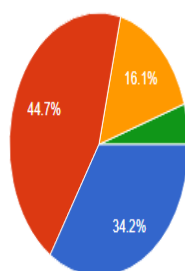


- Before pandemic 47.2% patients followed very healthy, balanced diet and 47.7% patients followed somewhat healthy diet, while 4.6% patients included more junk food in their diet and only 0.5% patients describe their diet in unhealthy manner.

How will you describe your diet during Pandemic? महामारी दरम्यान तुम्ही तुमच्या आहाराचे वर्णन कसे कराल?

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161 responses



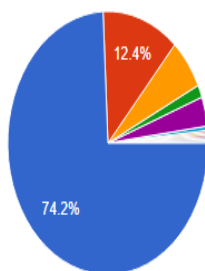
● Very healthy, balanced diet / अतिशय सकस, संतुलित आहार
 ● Somewhat healthy / काहीसे निरोगी
 ● Included more of junk food / जंक फूडचा अधिक समावेश
 ● unhealthy / अस्वस्थ

- During pandemic 34.2% patients were aware about their diet they followed very healthy, balanced diet and 44.7% patients followed somewhat healthy, while 16.1% patients included more junk food.

How often do you consume fast food on a weekly basis? तुम्ही साप्ताहिक आधारावर किती वेळा फास्ट फूडचे सेवन करता?

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388 responses



● 1-2 Times / 1-2 वेळा
 ● 2-3 Times / 2-3 वेळा
 ● 3-4 Times / 3-4 वेळा
 ● 5-6 Times / 5-6 वेळा
 ● Never
 ● No
 ● Don't consume fast food at all.
 ● No applicable

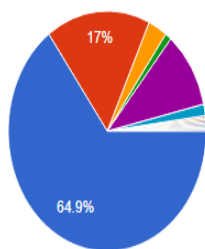
▲ 1/2 ▼

- 74.2% patients consume fast food on weekly basis while 12.4% consume 2-3 times a week, rest all consume fast food 3-4 times and 5-6 time.

How often do you consume instant food (Like noodles, canned food, frozen food) on a weekly basis? तुम्ही इन्स्टंट फूड (जसे की नूडल्स, कॅन केलेला अन्न, गोठवलेले अन्न) किती वेळा वापरता?

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388 responses



● 1-2 Times / 1-2 वेळा
 ● 2-3 Times / 2-3 वेळा
 ● 3-4 Times / 3-4 वेळा
 ● 5-6 Times / 5-6 वेळा
 ● Never
 ● No
 ● Once in a month
 ● Sometimes in month

▲ 1/2 ▼

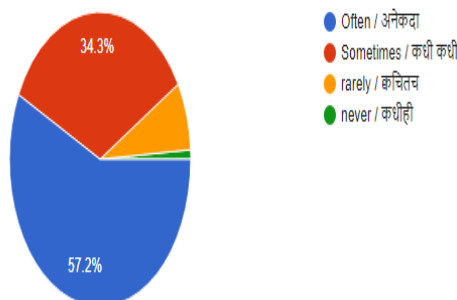
- 64.9% patients consumed instant food 1-2 times while 17% consumed for 2-3 times while very rare rate of patients consumed 3-4 times and 5-6 times.

Do you intake Plant protiens in you diet ? (Nuts, seeds , beans, pulses, spinach etc.)

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तुम्ही आमच्या आहारात वनस्पती प्रथिने घेता का? (काजू, बिया, बीन्स, कडधान्ये, पालक इ.)

388 responses



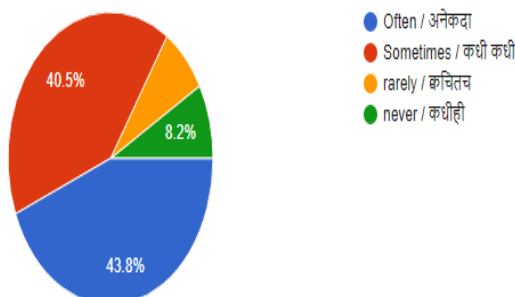
- 57.2% patients often intake plant proteins in their diet, 34.3% patients intake plant protein sometimes while 7.5% patients rarely intake plant protein and only 1% patients never intake plant protein.

Do you intake animal based protien ? (fish , egg, dairy products, chicken etc) तुम्ही प्राणी

[Copy](#)

आधारित प्रथिने खाता का? (मासे, अंडी, दुग्धजन्य पदार्थ, चिकन इ.)

388 responses



- 43.8% patients often intake animal based protein and 40.5% patients sometimes intake animal protein, 8.2% patients never intake animal based protein while 7.5% patients rarely intake plant protein.

CONCLUSION

We conducted a survey report to study whether azithromycin was effective against the covid-19 disease. During the covid-19 pandemic, a huge number of people had symptoms of sore throat in the early stage of covid. To stop the growth of infection azithromycin was

prescribed to the patients. Patients believed that azithromycin was prescribed to cure of disease, but after a complete dose of azithromycin very rare number of patients were cured of the disease, while a huge number of patients had to consult Dr, again. After a complete dose of azithromycin, those patients who did not cure had to increase the dose, even though some patients did not cure from the disease. Patients also observed side effects of azithromycin. When it did not cure patients changed their medication to nutraceuticals and home remedies. Patients also suggested that azithromycin is effective only in the early stage of covid-19 disease, it is not effective during the middle stage of covid-19.

We also asked the question to patients regarding whether nutraceutical products were effective to treat bacterial, inflammatory infections and to increase immunity power. Patients agree that nutraceutical product is beneficial over pharmaceutical product. The patient also believes that the purpose of using nutraceutical products is to give a good healthy life. During pandemic patients used a product like Vitamin C, green tea extract, probiotics, prebiotics, honey, and chyavanprash etc, to cure from bacterial, inflammatory disease and to boost their immunity power. Nutraceutical product or home remedies was effective during covid-19 disease because product like vitamin c boost immunity power and product like probiotics and prebiotics stops the growth of bacterial while green tea extract is anti-inflammatory, hence it was effective and huge number of patient preferred nutraceutical products. There was no side effects observe while using nutraceutical product.

Patients also followed diet during pandemic. Patients started consuming fruits and vegetables on daily bases. They describe their diet as very healthy and balanced diet during covid-19 diseases. Patients avoided and reduce intake of junk food during the pandemic. While who intake more junk had a disease of obesity. Patients also included plant protein and animal protein to their diet while huge number patient preferred plant protein during pandemic.

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