



CODEN [USA]: IAJPBB

ISSN : 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4394183>Available online at: <http://www.iajps.com>

Research Article

**SYSTEMATIC STUDY OF VITAMIN C USE IN COVID-19****<sup>1</sup>Dr Aqsa Baloch,<sup>2</sup>Dr Syeda Faiqa Batool Bukhari,<sup>3</sup>Dr Deeba Yousaf,  
<sup>1,2,3</sup>MBBS, Rawalpindi Medical University, Rawalpindi.****Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

*The first case of coronavirus became pronounced in 1960, the symptoms and signs and symptoms were cold. According to a 2001 perception, a number of the five hundred human beings were observed to have flu - like signs and symptoms, and there were 17-18 instances with terrific coronavirus. Corona changed into considered an enormous virus until 2002. According to a report, the coronavirus unfolds to many nations, USA (Hong Kong), Hong Kong, Singapore and Thailand, Vietnam and Taiwan in 2003 with a medical symptom of acute breathing syndrome. By the time microbiologists become aware of it as coronavirus, there are now eight,096 transfused patients. In 2004, the World Health Organization (WHO) and the Centers for the Treatment and Prevention of Coronavirus-Related Diseases announced an emergency within the country. On December 31, 2019, the Wuhan Fitness Commission in Hubei Province, Republic of China, the National Fitness Commission, China Centers for Disease Control and Prevention (CDC), and the WHO wholesale a collection of 27 Seafood pneumonia instances in Huanan. So now we will do nothing but save you. According to the pharmacological houses and the recommendation on Vitamin C and Vitamin D contained in this newsletter, it is determined to be of a high popular in terms of COVID-19 prevention and treatment. An immunomodulatory interest, interest frithocsaídeacha, antimicrobial advantage, interest in virus hobby of antiparasitic and antifungal interests, and so forth.*

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Please cite this article in press Aqsa Baloch et al, *Systematic Study Of Vitamin C Use In Covid-19*, Indo Am. J. P. Sci, 2020; 07(12).

**INTRODUCTION:**

The first case of corona virus became pronounced in 1960, the common symptoms and signs are similar to symptoms of cold. According to a 2001 perception, a number of the five hundred human beings were observed to have flu - like signs and symptoms, and there were 17-18 instances with terrific coronavirus. According to a report, the coronavirus unfolds to many nations, USA, Hong Kong, Singapore and Thailand, Vietnam and Taiwan in 2003 with a medical symptom of acute breathing syndrome. By the time microbiologists become aware of it as coronavirus, there are now 8096 transfused patients. In 2004, the World Health Organization (WHO) and the Centers for the Treatment and Prevention of Coronavirus-Related Diseases announced an emergency within the country. On December 31, 2019, the Wuhan Fitness Commission in Hubei Province, Republic of China, the National Fitness Commission, China Centers for Disease Control and Prevention (CDC), and the WHO collectively have a collection of 27 Seafood pneumonia instances in Huanan. According to the report, people with this situation have signs of fever, shortness of breath, and dry cough. It spread swiftly for the duration of the location each day, and on 11 March 2020, the WHO declared it a virus called COVID-19. According to a WHO file in China, scientific symptoms encompass 85% pyrexia at some degree of the infection and 45% at an early degree of the sickness. 67.7% of humans with dry cough and cough with sputum have been seen in 33.4% of patients. 18.6% of patients had shortness of breath, 30% sore throat 4.8% nasal congestion. Nausea and vomiting were localized in 5% of sufferers and diarrhea in 3.7%. Several research has well-considered destruction of the lung parenchyma, with irritation of the intestines and massive congestion. Lung weights extended for the elapsing of contamination and a small pleural effusion of smooth serous fluid (pulmonary edema) became detected. According to Xu et al., 2020, the x-ray viewing stated bilateral pneumonia, and the biopsy sample specified longish alveolar bilateral harm with fibromyxoid exudates. No vaccination or therapy developed for the prevention and routine care from this COVID-19 virus; certain antivirals, corticosteroids, nonsteroidal anti-inflammatory medications (NSAIDS), plasma convalesce and immunoglobulin G are successfully used in the treatment of SARS-CoV-2 since there has been no developed vaccine or prescription against extreme coronavirus (2019). Prevention and use of sanitizers with a minimum of 60% ethanol content, like hand wash for at least 20 seconds with soap. To prevent contact with known facial T-zones, pupils, nose, mouth and people with symptoms of SRS-CoV-2. To

stop crowded areas and keep social distance at least 6 metres from each other. Personal protective equipment (PPE), which includes surgical mask, double gloves, fully sleeves coats, eye protection lids, etc., must be used by healthcare practitioners above 65 years of age, which also requires to keep their pets especially dogs in quarantine, as there are several cases of human-to-dog infection. The use of N95 facial mask is also expected to prevent the spread of droplets. The signs of fever and pneumonia may therefore be successful against COVID 19 by using a first-line antipyretic medication including paracetamol. Medical evidence for SARS-CoV-2 has been identified on anti-virative medications, such as chloroquine, hydroxychloroquine, Remdesivir, Lopinavir/Ritonavir, Favipiravir, Nitazoxanide, Lactoferrin, corticosteroids and plasma convalescent treatment. The role of vitamins including vitamin C and vitamin D in SARS-CoV-2 is also seen. (Bae & Kim, 2020).

In 1920, vitamin C was first described as a vitamin C deficiency disorder by Albert Szent Gyorgyi, of the Szeged University in Hungary. The ascorbic acid is widely referred to and synthesised by both plants and many mammals. In the interchangeable application, ascorbic acid and vitamin C, are abbreviated as AA. Citrus fruit, kiwi, pineapple, papaya, strawberries, onions, broccoli and green leafy foods are the key sources of vitamin C. This essential mineral is not presented in animals, including Guinea pigs and human pigs. The intake of vitamin C is 100 times more than that of other vitamins. Vitamin C's daily need for 100-200 mg helps reduce the risk of chronic diseases. Due to certain causes, a poor eating patterns, lifestyle influences, such as unbalanced diets, physiological stress, reduced/increasing micronutrient demands, different diseases and exposure to toxins are not fulfilled, etc. Vitamin C leads to a range of pharmacological functions throughout the body, including immuno modulation, antioxidant activity, antimicrobial activity, anti-viral activity and anti-pest activity, etc. (Brown & Hullender, 2020)

**RESPIRATORY ILLNESS:**

Vitamin C is normally taken into consideration safe; However, the mentioned catastrophic effects of high-dose intravenous vitamin C (HDIVC) are the production of oxalate kidney stones. Due to its aid blessings, low fee and protecting profile it's far an appealing candidate for the treatment of breathing infections. A Cochrane evaluation looking at placebo-controlled studies that tried 2 hundred mg / day or extra of oral food vitamin C to save you and deal with human beings without a blood attack discovered that

supplementation did no longer reduce the frequency of the populace, however doses of 6- 8 g / day changed into related to a shorter length and severity of bloodless signs, and forty-six% had been symptom-free within 24 hours at an 8 g dose. A subgroup assessment of research with sharply expanded bodily pressure showed that the incidence turned into half of in this population. Based on those consequences, eating vitamin C may be useful for humans uncovered to brief intervals of full of life exercising or for those with energetic bloodless signs and symptoms and symptoms in immoderate doses. (Duchmann, 2020)

Vitamin C bioavailability is 100% with an unmarried oral dose of 200 mg, but drops to 33% with an unbound 1250 mg dose in a wholesome person. In addition, inflammatory cytokines reduce sodium-based vitamin C provider isoform (SVCT2), resulting in depleted C. Intracellular weight-reduction plan. As a result of limitations in bioavailability associated with vitamin C consumption in intense contaminants, the speculation that healing plasma levels to lessen the levels of oxidative stress generated in severely ill human beings with oral treatment isn't possible. The biggest look at examining the position of intravenous vitamin C overdose (50 mg / kg each 6 hours for four days) in sepsis-related ARDS, the CITRIS-ALI examine, checked out humans with chest ache and it did now not improve the business enterprise at a substantial high dose in the type of organ issues or inside the markers for inflammation and vascular damage. Mortality, despite the fact that secondary quit-consequences, reduced significantly in most people of patients on Vitamin C. (Baladia, Beatriz Pizarro, Ortiz-Muñoz, & Rada, 2020) Other writers commented on how the records can be in addition used to disguise the actual ones. Conclusions from statement and thus confusing aspects of this technical check are likely to be deceptive. Meta-analysis of intravenous vitamin C supplementation in significantly unwell patients (burns, sepsis and septic surprise) has proven that this could result in financial savings on stress results, shortened duration of live in the ITU and reduced need for mechanical air circulate within the patient without the pinnacle. As usual. Influencing mortality. (Kalil, 2020)

Vitamin C is widely accepted as healthy, but high-dose intravenous vitamin C (HDIVC) adverse effects reported include the formation of oxalate kidney stone. It is appealing to treat respiratory tract infections with its possible advantages, low cost and protection profile. A analysis by Cochrane on placebo-controlled trials of 200 mg/day or more oral vitamin C to avoid and treat the occurrence of the common cold showed

that supplementation did not decrease the overall public frequency, but 6–8 g/day doses were paired with a shorter time and severity of frequent cold symptoms of 46% symptoms free within 24 hours after the 8g dose. A subgroup analysis of severe physical stress tests showed that in this demographic it halved the rate. Based on these observations, for those with active symptoms vitamin C can be beneficial either in brief physical exercises or in large doses. (Nunes, 2020)

#### MECHANISM OF ACTION OF VITAMIN C.

Vitamin C plays a critical homeostatic position as an antioxidant. It is known to show off direct virucidal pastime and boom interferon production. It has powerful mechanisms inside the innate and adaptive immune machine. Vitamin C reduces reactive oxidizing species (ROS) and infections by way of weakening NF-κB activation. (“Researchers to study whether vitamin D offers protection against COVID-19,” 2020)

A new analysis of 140 COV ID 19 effects, such as pneumonia in Wuhan, has shown that vitamin C at a dosage of 24 g/day was administered on clincialtrials.gov at a dose of 7 days intravenously (Identifier: Nct04264533). According to the report of National Instituts of Health (NIH) experts, a dosage of (1.5 g/kg/body weight) Vitamin C was found to be healthy without serious side effects, thus, based on proof of anti-oxidants such as vitamins C is found to be safe without any major side effects. In 50 mild to extreme COVID 19 patients in China were administered intravenously with a vitamin C dosage of 10g and 20g/day at every 8-10 hours, although in vital circumstances vitamin C bolus was used with an increased oxygenation indice for both. This lead to the recovery and liberation of all patients. According to a few patients with COVID 19 caused pneumonia who were admitted, by February 2020 they had been moved to the intensive care unit (ICU) because of the ARDS and shock state. The US Research Triangle Institute (RTI) recorded a drop in the dosage of 15g/day of vitamin C intravenously for four days in 167 patients with sepsis-related ARDS. (Trovas & Tournis, 2020)

#### METHODS

A systematic research method has emerged as a hiring technique to uncover scientific, animal and in vitro studies which could clarify the mechanisms via which vitamins can play a function inside the combat in opposition to COVID-19. Medline (considering the fact that 1946), EMBASE, Cochrane Trials Program, Clinicaltrials.Gov, and WHO International Program of Clinical Trials have been searched using the superior

seek approach. from eleven May 2020, supplemented by using a newspaper search and Internet article using the Nexis media database. (“Not enough evidence for use of vitamin D in prevention or treatment of COVID-19, NICE rapid guidance concludes,” 2020)”

### CONCLUSIONS:

The COVID-19 pandemic is a worldwide phenomenon that influences loads of hundreds of humans worldwide. Day by using day, COVID-19 rafts are at the upward thrust in global time. Every attempt can be made to keep away from this. As we discover, no remedy has but been evolved to recover from COVID-19. Medications and vaccines are currently being tested. There is a preference for the end result to be seen right away. So now we will do nothing but save you. According to the pharmacological houses and the recommendation on Vitamin C and Vitamin D contained in this newsletter, it is determined to be of a high popular in terms of COVID-19 prevention and treatment. An immunomodulatory interest, interest frithocsaídeacha, antimicrobial advantage, interest in virus hobby of antiparasitic and antifungal interests, and so forth.

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