

# Case report on effect of T-AYU-HM Premium on Post vaccination Covid-19 infected patient

Dr. Atul Desai<sup>1</sup>, Dr. Kavita Desai<sup>1</sup>, Dr. Hemshree Desai<sup>2</sup>, Mr. Rutvij Desai<sup>3</sup>, Dr Chirag Desai<sup>4</sup>, Nishita Prajapati<sup>4</sup>, Dhruvi Patel<sup>4</sup>, Nikita Champaneri<sup>4</sup>, Pinki Purohit<sup>4</sup>

1. Dhanvantari Clinic, Ayurveda Healthcare and Research Centre, Vyara-Gujarat
2. Master's Students in Public Health; University of Glasgow, Scotland, United Kingdom.
3. Student of Medicine; Manila Central University; Philippines.
4. Department of Pharmacology; ROFEL Shri G M Bilakhia College of Pharmacy, Vapi.

**Abstract:** Covid-19 has impacted the world in such a way that nobody requires any further introduction about it. Vaccines have definitely played a significant role in preventing mortality in covid-19. Perception about vaccine needs spreading awareness at constant interval in India. Many countries have reported post vaccination positive cases of Covid-19 in patients. Considering the percentage it was very negligible. Current case report highlight post vaccination a patient was found RT-PCR positive with clinical complains. Mr. Y a businessman with a history of first dose of ChAdOx1-s vaccination consulted the clinic with complains of fever, body ache, cold, breathlessness, cough, and weakness. On examination C-reactive protein was 5.5 and CT value for RT-PCR was 23. Considering SpO2 and other parameters patient consented for treatment and it was initiated with T-AYU-HM Premium and onion steam vaporization. Patient advised strict home quarantine and adherence to the treatment. Vaccines can definitely prevent further complications but it cannot prevent a person from getting infected. Therefore, prevention and post infection treatment measures are still consider vital area to focus on further research on integrated treatment approach. Appropriate treatment measures can prevent post infection complications in Covid-19 patients. We observed that Onion steam vaporization and T-AYU-HM Premium had a remarkable impact on the patient's clinical and pathological signs and symptoms.

**Keywords:** Covid-19, T-AYU-HM Premium, RT-PCR, ChAdOx1-s.

**Introduction:** The current coronavirus disease 2019 (Covid-19) outbreak is a global emergency, with its quick spread and high mortality rate causing widespread havoc. The number of patients infected with SARS-CoV2, the causal agent of Covid-19, is quickly rising around the world. <sup>[1]</sup> SARS-CoV-2 is a single-stranded RNA virus belonging to the Coronaviridae family. Its name corona is derived from its "crown-like morphology".<sup>[2]</sup> Coronaviruses have a zoonotic origin; they are transmitted from animals to humans. <sup>[3]</sup> The incubation period can range from 1-14 days, the average is 5 days. SARS-CoV-2 uses angiotensin-converting enzyme 2 (ACE-2) for cell entry.<sup>[4]</sup> ACE-2 is expressed in the lung, heart, and kidney. The binding of a virus on a receptor will alter oxygen saturation and thereby initiate various clinical complications in patients. The altered oxygen saturation and elevated inflammatory mediators in the lungs are major reasons for mortality in covid-19.<sup>[5]</sup> Patients with existing comorbidities or autoimmune problems are exposed to a higher risk of mortality in covid-19. In the fight against coronavirus, patients' immune systems play a crucial role in response and recovery.<sup>[6]</sup> Vaccines have played a tremendous role in preventing mortality in Covid-19. Despite its profound benefit and advantages, many countries have observed a breakthrough infection in negligible percentages. A "vaccine breakthrough infection" is an infection that occurs after a person has been fully vaccinated. People who have been fully immunized and acquired vaccination breakthrough infection are less likely to develop the serious disease than those who have not been fully vaccinated and get Covid-19. Even when fully vaccinated people experience symptoms, they are usually milder than in unvaccinated people. <sup>[7-9]</sup>

**Case Presentation:** This case report was observed at Dhanvantari covid-19 care centre during second wave 2021. The case presented here is highlighting post vaccination positive RT PCR, presences of symptoms, and its treatment with Ayurvedic system of medicine in covid-19. Prior to proceeding, the patient has provided his consent to proceed with ayurvedic treatment and utilize the information for better healthcare in the future.

**History:** A patient Mr. Y, 35years old was reported at Dhanvantari Ayurvedic Healthcare and Research Centre, Vyara, India on March 30, 2021. Mr. Y has received his first dose of chAdOx1-s vaccination on March 27, 2021. Professionally, he is a businessman.

**Case Report:** Mr. Y presented to the clinic with complains of fever, body ache, cold, breathlessness, cough, and general weakness. On laboratory screening, it was found that the CRP level was elevated and the RT-PCR and HRCT results came positive indicating the patient was Covid-19 positive. The laboratory parameter reports are listed in table 1.

Table 1: Laboratory details on baseline investigation.

PARAMETERS	VALUES
Hb (gm/dl)	15.4
RBC (in millions)	4.77
Neutrophils (%)	58
Lymphocytes (%)	38
WBC (Per microlitre)	4800
Platelets (Per microlitre)	172000
ESR ( mm/hr)	10
CRP (mg/L)	5.2
Blood Pressure (mmHg)	141/83
Body Temperature(°C)	33
SpO2 (%)	99/99
PR (per minute)	94/140
Weight (in Kg)	67.910KG
X-ray	+VE
RT-PCR	+VE (31-03-2021) CT- value- 23
Antibody IgG	<0.50 Non-reactive IgG Ab

Considering symptoms and laboratory parameters patients did not require any hospitalization or integrated treatment approach. Patient was asked to follow home quarantine and treatment of T-AYU-HM Premium 600 mg tablet BD, Acupen tablet BD for 21 days, and onion steam vaporization for 2 minutes once in a day for five days. Tablet Paracetamol 650 mg was prescribed for fever and when it is required only. Frequent follow up and SpO2 were assessed through telephonic communications. Following the 5-day medical treatment, he was free of all symptoms except weakness. For a clearer clinical picture, observations were made on days 5 and 21. IgG antibody test was negative on the 5<sup>th</sup> day and positive on the 21<sup>st</sup> day. The laboratory results are mentioned in table 2.

Table 2: Laboratory parameters report during follow-up visit.

PARAMETERS	VALUES (04-04-2021) 5 <sup>th</sup> day	VALUES (20-04-2021) 21 <sup>st</sup> day
Hb(gm/dl)	14.5	14.3
RBC(in millions)	4.65	4.52
Neutrophils (%)	68	59
Lymphocyte (%)	26	37
WBC (Per microlitre)	11600	7100
Platelet (Per microlitre)	381000	258000
ESR (mm/hr)	-	10
CRP (mg/L)	1.5	0.4
Interleukin-6 (pg/ml)	-	1.5
Body Temperature (°C)	-	33
SpO2 (%)	100/99	99
PR (per minute)	87/142	75
Antibody IgG (AU/ml)	-	1889.0
Weight (in Kg)	67.90	68.18

**Discussion:** The infection of SARS-COV2 in the patient confirmed by a CT result of 23 suggested mild to moderate level infection, chest HRCT, and CRP level. <sup>[10]</sup> One possible reason for being at high risk of becoming infected is the patient's profession, where he belongs to a business, so he might have frequent interaction with consumers. Important biomarkers observed on borderline marks indicated possible chances of inflammation in the patient. With treatment, CRP improved remarkably and ESR remained, indicating that the patient's inflammatory response have resolved. Inflammatory responses were reduced, which reduced the likelihood of breathing difficulties. Interleukin-6 reported 1.5 pg/ml, indicating no pulmonary damage. <sup>[11]</sup>

The objective behind vaccine creation might be to create a spike protein that remains stable in the prefusion shape as a target against which the immune system may be trained to react. <sup>[12]</sup> The CDC continuously monitors all the Covid-19 vaccines, licensed by the FDA for their safety and effectiveness against new and emerging variants. Although Covid-19 positive cases were observed in people who have received one or both vaccine doses, the risk of infection, hospitalization and mortality in vaccinated people are significantly lower than in unprotected people. <sup>[13-14]</sup>

Mr. Y's medicine chart is comprised of a T-AYU-HM Premium tablet, which has immunomodulatory activity. T-AYU-HM Premium is also claimed as an effective anti-oxidant for red blood cells. As a result, RBC and hemoglobin levels remained normal during treatment. The results of White blood cells, lymphocytes, neutrophils, and platelets were indicating there was an improvement in inflammatory condition. The improvement in hemoglobin and red blood corpuscle levels also contributed in preventing further oxygen-mediated complications. The onion steam vaporization might prevent the virus from spreading to the lungs and other body organs. The steam might also prevent mucus congestion or inflammation in the upper respiratory tract. <sup>[15-18]</sup> Antibody IgG test results on the 5<sup>th</sup> day were 0.50 AU/ml, which is considered negative, however on the 21<sup>st</sup> day, it was 1889.0 AU/ml, which is regarded positive and demonstrates the presence of antibodies against SARS-CoV2 as part of the immune system.

Antigen-antibody complexes are recognized by leukocytes and macrophages because IgG binds to them. After an infection or immunization, IgG is mostly important for long-term immunity.<sup>[19]</sup> No doubt IgG should neither consider for diagnosis of condition nor the evaluating level of immunity in patients.

**Conclusion:** The patient might infected prior or post vaccination considering his occupation. The person might get infected with or without vaccination for covid-19. We can't stop a person to getting infected but with the help of vaccination mortality can definitely prevented. The current case study suggests mild level cases infected after vaccination can easily be managed through alternative system of medicine and home quarantine. This might prevent unwanted utilization of antibiotics or anti-viral by patients. More such kind of observational cases should be monitored to develop better treatment strategies for patients infected post vaccination either after first dose or during break through infections.

**Acknowledgement:** The authors would like to express sincere thanks to patient and his family member for providing consent for the study.

#### References:

- [1] Yang L, Liu S, Liu J, Zhang Z, Wan X, Huang B, Chen Y, Zhang Y. Covid-19: immunopathogenesis and Immunotherapeutics. Signal transduction and targeted therapy. 2020; 5(1):1-8.
- [2] Zumla A, Chan JF, Azhar EI, Hui DS, Yuen KY. Coronavirus—drug discovery and therapeutic options. Nature reviews Drug discovery. 2016; 15(5):327-47.
- [3] Vijaykrishna D, Smith GJ, Zhang JX, Peiris JS, Chen H, Guan Y. Evolutionary insights into the ecology of coronaviruses. Journal of virology. 2007;81(8):4012-20.
- [4] Li W, Moore MJ, Vasilieva N, Sui J, Wong SK, Berne MA, Somasundaran M, Sullivan JL, Luzuriaga K, Greenough TC, Choe H. Angiotensin-converting enzyme 2 is a functional receptor for the SARS coronavirus. Nature. 2003; 426(6965):450-454.
- [5] Yamada T, Wakabayashi M, Yamaji T, Chopra N, Mikami T, Miyashita H, Miyashita S. Value of leukocytosis and elevated C-reactive protein in predicting severe coronavirus 2019 (Covid-19): a systematic review and meta-analysis. ClinicaChimica Acta. 2020; 509:235-43.
- [6] Jin Y, Yang H, Ji W, Wu W, Chen S, Zhang W, et al. Virology, epidemiology, pathogenesis, and control of Covid-19. Viruses. 2020; 12:372. doi: 10.3390/v12040372.
- [7] CDC COVID-19 Vaccine Breakthrough Case Investigations Team. COVID-19 Vaccine Breakthrough Infections Reported to CDC - United States, January 1-April 30, 2021. MMWR Morb Mortal Wkly Rep. 2021;70(21):792-793. Published 2021 May 28. doi:10.15585/mmwr.mm7021e3
- [8] More on SARS-CoV-2 Infection after Vaccination in Health Care Workers. N Engl J Med. 2021; 385:2.
- [9] Shahstri J, Parikh S, Aggarwal P, et al. Severe SARS-CoV-2 Breakthrough Reinfection With Delta Variant After Recovery From Breakthrough Infection by Alpha Variant in a Fully Vaccinated Health Worker. Front. Med.2021; <https://doi.org/10.3389/fmed.2021.737007>
- [10] Saeed GA, Gaba W, Shah A, et al. Correlation between Chest CT Severity Scores and the Clinical Parameters of Adult Patients with COVID-19 Pneumonia. Radiol Res Pract. 2021; 2021:6697677. Published 2021 Jan 6. doi:10.1155/2021/6697677
- [11] Liu T, Zhang J, Yang Y, Ma H, Li Z, Zhang J, Cheng J, Zhang X, Zhao Y, Xia Z, Zhang L. The role of interleukin-6 in monitoring severe case of coronavirus disease 2019. EMBO molecular medicine. 2020; 12(7):e12421.
- [12] Xia X. Domains and functions of spike protein in Sars-Cov-2 in the context of vaccine design. Viruses. 2021; 13(1):109.
- [13] Keehner J, Horton LE, Binkin NJ, Laurent LC, Pride D, Longhurst CA, Abeles SR, Torriani FJ. Resurgence of SARS-CoV-2 infection in a highly vaccinated health system workforce. New England Journal of Medicine. 2021; 385(14):1330-2.
- [14] Antonelli M, Penfold RS, Merino J, et al. Risk factors and disease profile of post-vaccination SARS-CoV-2 infection in UK users of the Covid-19 Symptom Study app: a prospective, community-based, nested, case-control study. Lancet Infect Dis. 2022; 22(1):43-55. doi:10.1016/S1473-3099(21)00460-6
- [15] Desai A., Desai K., Desai H., Desai C., Desai R. A Case Report on the Effects of Onion Steam Vapour/Nebulisation and T-AYU-HM Premium Tablets in Covid-19 Patient. J Pharm Sci Bioscientific Res. 2020. 10(2):171-174
- [16] Desai A, Desai H, Desai C , Desai J, Mansuri A. Possible role of medicinal plants in Covid-19: A Brief Review, International Journal of Science & Engineering Development Research,2020; 5(4), 205 209,doi:http://www.ijedr.org/papers/IJSDR2004034.pdf
- [17] Desai A., Desai H., Desai C. , Desai R., Possible Role of T-AYU-HM Premium and Other Herbal Drug Treatments In Covid-19, International Journal of Science & Engineering Development Research,2020; 5(4), 272 - 274, doi:http://www.ijedr.org/papers/IJSDR2004047.pdf
- [18] Desai A, Desai K, Desai H, Desai C, Desai R. Treatment of T-AYU-HM Premium and Onion Steam Vaporization on Possible Reinfection or Reactivation Covid-19 Patient: A Case Study. Int. J. Pharm. Sci. Drug Res. 2021; 13(1):103-106. DOI: 10.25004/IJPSDR.2021.130116
- [19] Jacofsky D, Jacofsky EM, Jacofsky M. Understanding antibody testing for Covid-19. The Journal of arthroplasty. 2020; 35(7):S74-81.