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CASE STYDY: BREATHLESSNESS AFTER COVID-19 VACCINATION AND USE OF FORMOTEROL FUMARATE AND BUDESONIDE INHALER FOR MANAGEMENT

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ABSTRACT

Coronavirus disease 2019 (COVID-19) is one of the biggest challenge threatening globally. First case of novel corona virus was detected in Wuhan, China in late 2019. Since then it has spread globally creating worldwide health, socioeconomic and humanitarian crisis. It has cost lakhs of lives globally including India. Since its outbreak in late 2019, the virus has spread globally, creating global health, socioeconomic and humanitarian crises. In record breaking time vaccines were invented and approved by world health organization (WHO) and regulatory agencies for emergency use to limit the spread of Covid-19, even before the completion of conventional phases of clinical trials. However reported side effects of these vaccines are mild to moderate with very rare cases of serious adverse outcomes like myocarditis. We describe a case of healthy young female who develop respiratory problems after COVID vaccination.

KEYWORDS: COVID-19, COVID-19 vaccine, Adverse reactions, Clinical trials, Vaccination, Pharmacovigilance.

BACKGROUND

COVID-19 is an infectious disease caused by a new species of β-coronavirus genus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] As it's a very highly communicable disease it spread all across the globe in no time with very little known facts about the virus manifestations, infectivity, pathogenesis and cure.[2,3] So complete vaccination of all citizens in a very limited time period was the demand of hour which we are still chasing.[4,5] To prevent and protect the lives of citizens government has allowed emergency

use of vaccines. Nearly all vaccines for COVID-19 have some common side effects like pain and swelling at the site of injection, fever, chills, headache, nausea, muscle soreness, joint pain and fatigue. In few individuals, some adverse events have been observed like neutropenia with the AstraZeneca vaccine & heart palpitations with Sputnik V.[6-8] Although various clinical trials concluded that COVID-19 vaccines were well tolerated and had a good safety profile.[9,10]

CASE PRESENTATION

A 32 year old female patient reported with the chief complaint of breathlessness on 1st may 2021. She took her first shot of vaccine 4 days back. Next day of vaccination she developed mild fever and muscle soreness for 3 days. At fourth day she experienced chest tightness, palpitaion and breathlessness which was sudden in onset and was not resolving on rest. She had history of mild seasonal respiratory allergy but she never felt chest tightness and breathlessness in past. She went to emergency department and her ECG was done which was found to be normal except the tachycardia. Her Oxygen saturation was 98% with HR-130 bpm. Her RT PCR test for Covid-19 was negative. Chest x ray was done and it was normal. She was advised to take rest as findings were inconclusive. However patient continued to have breathlessness and chest tightness and meanwhile developed right upper quadrant pain which increases on deep breathing. After investigations she was advised to take foracort 200 mg inhaler for one month. Pain in right upper quadrant has been subsided but she is still having episodes of chest tightness and breathlessness on and off. Presently she is on foracort 200 mg three times a day.

INVESTIGATIONS

Complete routine biochemical investigations along with troponin I, complete hemogram, D-Dimer, COVID IgG against spike protein, CRP, ECG, RT PCR for COVID-19, chest x-ray were performed. Results were SGOT- 68 U/L, SGPT- 109 U/L, ALP- 71 U/L, S Triglycerides- 25mg/dL, S Cholesterol- 211 mg/dL, HDL-54 mg/dL, LDL-108 mg/dL, VLDL-49 mg/dL, Lymphocytes- 49.50%, ESR- 36 mm/hr and CRP-6 mg/dL, D Dimer was 288 ng/mL, Troponin I- 0.5 ng/mL, Anti SARS-CoV2 IgG against spike protein- 0.30 (S/C). Chest X-Ray and ECG were normal.

DISCUSSION

Vaccination along with COVID appropriate behavior is the most important way to prevent the spread of COVID-19 infection. Scientists all over the world are working jointly to

develop effective and safe vaccines to stop the pandemic.[11] This patient has no similar history of chest tightness and breathlessness in past. Onset of symptoms after vaccination points that there may be some pathological response occur after taking vaccine shot. Her liver enzymes were also raised with borderline higher levels of CRP, troponin I with raised ESR and lymphocytes, which also favours this correlation. There are various other case studies which have reported some rare but serious side effects post vaccination.[12,13] However, the exact reasons and the predisposing factors are still the matter of debate and demands extensive research. So, reporting and monitoring of adverse events after vaccination is essential to improve safety profiles. The rapid invention of COVID-19 vaccines has fueled the doubts regarding their safety and contributes to hesitancy to take vaccine.[14] As per the WHO Programme for International Drug Monitoring, COVID-19 vaccines must meet the several requirements stated by the firm to assure the safety of vaccine.[15] So proper pharmacovigilance is the need of hour in present and future era of pandemic where vaccines are the only hope with emerging new variants. It includes timely detection, reporting, assessment, understanding and prevention of adverse reactions in vaccinated population.[16,17]

CONCLUSION

As there is lack of data from long term trials on safety of COVID-19 vaccines so adoption of safety measures, systematic monitoring of vaccinated people for possible adverse reactions to COVID-19 vaccine is crucial. All vaccinated subjects should be monitored for immediate anaphylactic reactions. People should readily report about any unsual side effect they experienced after taking vaccine shot without any hesitancy. As per the available data vaccines are safe and each individual should take vaccine as the benefit of vaccine in preventing COVID associated deaths and complications are still on much higher side than the rare adverse reactions.

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