JOURNAL OF FUNCTIONAL VENTILATION AND PULMONOLOGY
© 2021 JFVP. *www.jfvpulm.com. Print: ISSN 2650-1988. Online: ISSN 2650-3506*
J Func Vent Pulm 2021; 37(12): 1-84
DOI: 10.12699/jfvpulm.12.37.2021.80

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CASE REPORT

Subacute Raynaud' syndrome associated with a rare adverse drug reaction of Vaxzevia - AstraZeneca COVID-19 vaccine: A case report

Syndrome de Raynaud subaiguë associé à un rare effet indésirable médicamenteux du vaccin Vaxzevia-AstraZeneca COVID-19: Rapport de cas

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ABSTRACT

In the current pandemic of SARS-CoV-2, the fast development of vaccines is mandatory due to many deaths and cases across the world since the beginning of the outbreak.

The European Medicines Agency (EMA) has allowed emergency use authorization for treatment with the Vaxzevria (ChAdOx1-S, AstraZeneca) vaccines in the European Union. There are a lot of adverse drug reactions observed during the vaccination campaign, the most common side effects are tenderness, pain and bruising at the injection site, headache, tiredness, muscle pain, general feeling of being unwell, chills, fever, joint pain and nausea, and can also rarely cause anaphylactic shock. The recognition of adverse drug reactions of the vaccine Vaxzevria plays an important role in minimizing vaccine-induced adverse reactions.

In this report, we record and analyze a rare case of peripheral cyanosis appearing after being vaccinated, and sharing the way to resolve this problem to contribute to the data of adverse drugs reaction regarding Vaxzevria.

KEYWORDS: **SARS-CoV-2 vaccine; Vaxzevria - AstraZeneca vaccine; Raynaud' syndrome; Adverse drug reaction.**

RÉSUMÉ

Dans la pandémie actuelle de SRAS-CoV-2, le développement rapide de vaccin était obligatoire en raison de nombreux décès et cas à travers le monde depuis le début de l'épidémie.

L'Agence Européenne des Médicaments (EMA) a autorisé d'utilisation d'urgence pour le traitement avec les vaccins Vaxzevria (ChAdOx1-S, AstraZeneca) dans l'Union Européenne. De nombreux effets indésirables médicamenteux ont été observés au cours de la campagne de vaccination, les effets secondaires les plus fréquents sont la sensibilité, la douleur et les ecchymoses au site d'injection, les maux de tête, la fatigue, les douleurs musculaires, la sensation générale de malaise, les frissons, la fièvre, les douleurs articulaires et nausées et peut aussi rarement provoquer un choc anaphylactique. La reconnaissance des effets indésirables du vaccin Vaxzevria joue un rôle important dans la minimisation des effets indésirables induits par le vaccin.

Dans ce rapport, nous enregistrons et analysons un cas rare de cyanose périphérique apparaissant après avoir été vacciné, et partageons la façon de résoudre ce problème pour contribuer aux données d'effet indésirable médicamenteux concer-

MOTS CLÉS: **SARS-CoV-2 vaccin; Vaxzevria - AstraZeneca vaccin; Syndrome de Raynaud; Effets indésirables médicamenteux.**

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INTRODUCTION

The "Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2)" disease has caused a challenging and threatening pandemic globally (COVID-19). This virus is highly contagious and has caused disruption of the world's health and economy. The prevalence and mortality rates of SARSCOV-2 are changing on a daily basis. According to World Health Organization (WHO) as of August 27, 2021, the COVID-19 pandemic involved 216 countries, with 214.468.601 confirmed cases including 4.470.969 death [1].

During the COVID-19 pandemic, globally people are facing major health care challenges, lockdowns, anxiety and stress, as there is no specific treatment and vaccination for this pandemic.

Given the lack of specific therapy for and the rapid spread of this virus, vaccination would be a significant tool in the fight against the SARSCoV-2 pandemic. In January 2021, the European Medicines Agency (EMA) authorized use of the viral vector coronavirus disease 2019 (COVID-19) vaccine Vaxzevria (ChAdOx1-S, AstraZeneca) in the European Union. The vaccine has been granted a conditional marketing authorisation or emergency use in more than 80 countries across six continents. More than 800 million doses of COVID-19 Vaccine AstraZeneca have been supplied to more than 170 countries worldwide, including more than 100 countries through the COVAX Facility.

Given the scale-up of mass vaccination campaigns across the world, it is likely that new adverse reactions will occur that were not reported in the initial trials. The present report aims to describe a case of peripheral cyanosis as rare adverse drugs reactions after immunization with the viral vector vaccine Vaxzevria [2].

CASE REPORT

A 43 years old Vietnamese man with good health status who had not any recognized health problem in the past and excluded any medications and no medical history nor allergies. He received the first injection of Astrazeneca (Lot. PV46707 – intramuscular injection) on August 13th, 2021. Three days after injection, the patient discovered purple bruises on the fingertips and toes, no pain in the fingertips, and no other signs; the patient had no fever and had a stable health condition.

After five days, the patient continued to have the purple bruises in his fingertips and toes without the signs of improvement. Thus, the patient went to the hospital for examination and was hospitalized at Ninh Thuan General Hospital, Ninh Thuan Province, Vietnam, on August 19th, 2021, with the bluish of the fingers and toes extremities as a main chief complaint *(Figure 1)*.

The clinical examination found the patient was in a good health condition. He denied having fever, sore throat nor any dry cough or difficulty breathing. He had not experienced any recent tiredness or diarrhea. He did not reported another additional symptom for Covid-19 infection or epidemic Covid-19 risk factor. There were any symptoms of arterial or venous thrombosis which had been found in clinical examination.

The results of laboratory testing showed RT-PCR Covid-19 was negative. All the biochemical parameters related to DIC (disseminated intravacular coagulation) were in the normal range. Platelet counting was normal; D-dimer was lower than upper normal limit; fibrinogen level was in normal range. The vital signs were in normal levels'' SpO2 was 98%. The final diagnosis was extremities cyanosis or Raynaud's phenomenon (secondary Raynaud's) due to adverse drug reactions after immunization with the viral vector vaccine Vaxzevria.

The patient was treated with systemic corticosteroid (methyl prednisolone: 125mg, intravenous, for 3 days), enoxaparin (lovenox: 1mg/kg, subcutaneous, for 3 days), and vasodilatiors with calcium chanel blocker (nifedipin: 20mg, PO, 1 tablet/day, for 3 days), trimetazidin (vastarel 35 mg, PO, 1 tablet/day, for 3 days), and pentoxyphyllin (100mg, intravenous injection, for 3 days).

After three days of treatment, the patient recovered completely without sequelae. There was no vasospasm symptom. Raynaud' syndrome was disappeared after three days of treatment *(Figure 2)*.

All the biochemical laboratory parameters including complete blood count, D-dimer and Fibrinogen were in the normal limits. The patient was then self-monitored at home, and after one week of observation. The patient did not found any further abnormal signs or symtomps after discharged.

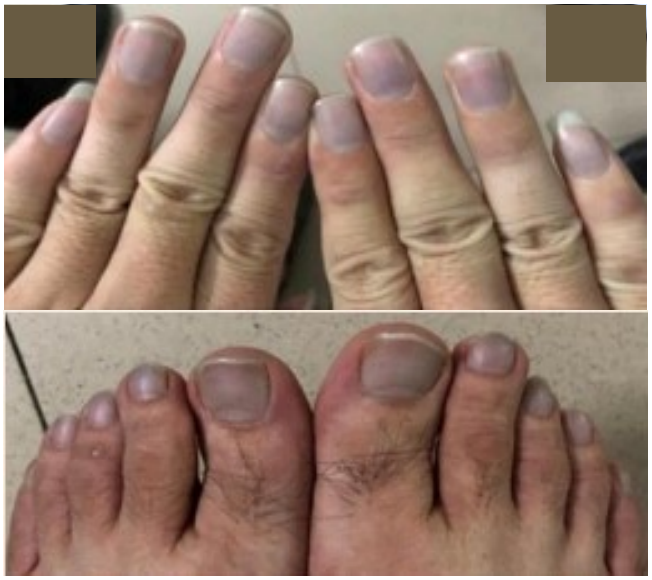

FIGURE 1. *The sign of peripheral cyanosis at 6th day of vaccination.*

FIGURE 2. *Peripheral cyanosis completely recovery after 3 days of treatment with vasodilators.*

DISCUSSION

Adverse drug reactions induced by Vaxzevia was reported.

People receiving Vaxzevria may experience more than one side effect at the same time. The most common side effects are tenderness, pain and bruising at the injection site, headache, tiredness, muscle pain, general feeling of being unwell, chills, fever, joint pain and nausea (feeling sick). Some of side effect was observed up to 1 in 10 peoples, there are thrombocytopenia (low levels of blood platelets), vomiting, diarrhoea, pain in legs or arms, swelling and redness at the injection site, flu-like illness and asthenia (weakness).

The most common side effects with Vaxzevria in the trials were usually mild or moderate and got better within a few days after vaccination. Lymphadenopathy (enlarged lymph nodes), decreased appetite, dizziness, sleepiness, lethargy (lack of energy), sweating, abdominal (belly) pain, itching, rash and urticaria (itchy rash) may affect up to 1 in 100 people.

Thrombosis (formation of blood clots in the blood vessels) in combination with thrombocytopenia (thrombosis with thrombocytopenia syndrome, TTS) may affect up to 1 in 10,000 people. A minimal number of cases of angioedema, Capillary leak syndrome have occurred with Vaxzevria. Allergic reactions have occurred in people receiving the vaccine, including some cases of severe allergic reactions (anaphylaxis) [3].

Clinical characteristics of Peripheral cyanosis

Peripheral cyanosis occurs due to the inability of the body to deliver oxygen-rich blood to the peripheral tissues. Congestive peripheral cyanosis can be caused due to the slowing of blood flow. Ischemic peripheral cyanosis occurs when vasoconstriction leads to diminished peripheral blood flow.

In peripheral cyanosis, there is normal arterial oxygen saturation but increased oxygen extraction by the peripheral tissue in the capillary bed in the setting of peripheral vasoconstriction and decreased peripheral blood flow. This results in a significant difference in the saturation between the arterial and venous blood, with increased deoxygenated blood on the venous side of the capillary beds [4].

Treatment.

In this case, we evaluated the results of the laboratory tests to identify and rule out thrombosis with thrombocytopenia syndrome [5-7], whether or not it occurred in the patient. Results of platelet tests (platelet count, APTT, PT), D-Dimer, Fibrinogen, X-ray, Doppler to rule out possible thrombosis or vascular occlusion in the patient [8,9].

All of the above results and tests helped us feel more secure about the possibility of TTS and decided to carry out supportive treatment for the patient with anticoagulants and medications helping to improve blood flow and oxygen supply to the organs and tissues. However, due to arterial thrombosis due to vaccination is also similar to the symptom of Covid-19 infection, RT-PCR of Covid-19 should be done as soon as possible to rule out this infection or co-infection in suspected patients [10].

CONCLUSION

In our adverse drug reaction case, the Vaxzevria Astrazeneca-induced peripheral cyanosis involved multiple sites, including the fingers, toes, and recovered completely after six days without sequelae. It is essential to recognize the early signs of side effects and immediately have medical intervention to prevent the risks of thromboembolism and other complications.

Healthcare providers should report unusual adverse drug reactions associated with Vaxzevria Astrazenecause.

CONFLICT OF INTERESTS

The authors declare any conflict of interest for this case report.

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