JAMBI MEDICAL JOURNAL
Jurnal Kedokteran dan Kesehatan

p-Issn : 2339-269x
e-Issn : 2580-6874

Vol. 11, No. 4, November 2023
DOI: 10.22437/jmj.v11i4.28921
Journal homepage: https://online-journal.unja.ac.id/kedokteran

Case Report

Herpetic Neuralgia After Inactivated Covid-19 Vaccination : A Case Report

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Article History:

Received Oct 24, 2023
Accepted Nov 27, 2023

Keyword:

Herpetic Neuralgia
Vaccination
Varicella Zoster Virus
Covid 19

ABSTRACT

The COVID-19 pandemic has made prevention procedures against the rapidly spreading infection a top priority. Inactivated COVID-19 vaccines have been developed and authorized for use in some countries including Indonesia, where the Sinovac vaccine has been distributed to health care workers and the elderly. There have been no reports of herpes zoster reactivation after the Sinovac vaccine in Indonesia yet. Advanced age may be a risk factor in reduction of cell-mediated immunity that related to VZV reactivation.However, this article reports an unusual case of varicella zoster virus (VZV) reactivation in a patient who received the COVID-19 vaccine. This is the first case of VZV reactivation following Sinovac COVID-19 vaccination. It is very difficult to establish a straightforward relationship between herpes zoster and inactivated COVID-19 vaccine, immune dysregulation created by the vaccine may play a role in the reactivation of latent VZV infection in the current case. There is a need for further review and studies in the future.

INTRODUCTION

Since the emergence of coronavirus disease 2019 (COVID-19) pandemic, the prevention procedure for the rapidly spreading infection has become priority. The DNA-based/RNA-based vaccines, non-replicating viral vector vaccines, and inactivated vaccines have been developed for COVID-19 prevention.[1] CoronaVac (Sinovac Life Sciences, Beijing, China), an inactivated vaccine against COVID-19, containing inactivated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been studied for its efficacy and safety either in adults ad elderly.[2,3] The inactivated COVID-19 vaccines are authorized for use in some countries including Indonesia which started vaccination program in January 2021.

Cell-mediated immunity showed significant role in the prevention of VZV reactivation. Reduction of cell-mediated immunity related to aging or disease is associated with a reduction in VZV-specific T cells, disrupting immune surveillance and increasing the risk of reactivation, with age being the major risk factor for 90% of cases of HZ.[4]

This vaccine has been approved by the Indonesian regulatory authorities. The vaccination has been widely distributed in Indonesia for health care workers and high risk group of patients (elderly).[3] There was no report about herpes zoster reactivation after Sinovac vaccine in Indonesia yet. Most commonly reported adverse effects of the inactivated vaccines are injection site pain, fever, headache, nausea, vomiting, etc.[2] Herein, we report an extraordinary case of varicella zoster virus (VZV) reactivation in a patient who was vaccinated against COVID-19.

CASE PRESENTATION

A 82-year-old male with a history of cerebrovascular accident, hypertension, chronic pulmonary obstructive disease was consulted to us for erythematous, painful, and pruritic lesions on left side of face. Currently, the patient was not on any immunosuppressive therapy. He reported that one days after the second application of inactivated COVID-19 vaccine, some stinging and painful (burning sensation) pimple-like lesions had appeared involving the left side of his face. No other symptoms such as fever, dyspnea, or cough were accompanied. Dermatological examination showed some crusted, hemorrhagic vesicles upon an erythematous base occupying an area of first and second dermatome of trigeminal nerve. The routine blood test result was unremarkable. Our final diagnosis was herpes zoster, and we started on oral acyclovir for one week, gabapentin 100 mg 2 times daily, and neurotropic vitamin. He did not mention any factor that would contribute to the development of herpes zoster such as immunosuppressive drug use, radiation therapy, physical trauma, or psychological stress. The vesicle and pain improved after one therapy and no further complications.

DISCUSSION

Varicella zoster virus (VZV) remains latent in dorsal-root or cranial-nerve ganglia after primary infection. Herpes zoster caused by reactivation of VZV may occur spontaneously. Our case report suggest spontaneous reactivation. Recently, VZV reactivation in immunocompetent cases during COVID-19 infection has also been reported, which is suggested to develop as a result of COVID-19-induced lymphopenia and T cell mediated immunity.[5,6] The median time between COVID-19 diagnosis to development of herpes zoster was reported as 5.5 days.[6]

The reactivation appeared 1 day (24 hours) after COVID-19 vaccination in our case. Additionally, Walter et al [7] have reported three cases of herpes virus reactivation following inactivated influenza, hepatitis A, and rabies with Japanese encephalitis vaccines. It is considered that vaccine-related immunomodulation including suppression of cellular immunity by live attenuated vaccines and attenuated alloreactivity caused by inactivated hepatitis B vaccine may be responsible for the reactivation of herpes virus infections.[7,8] Advanced age may be a risk factor in reduction of cell-mediated immunity that related to VZV reactivation.[9]

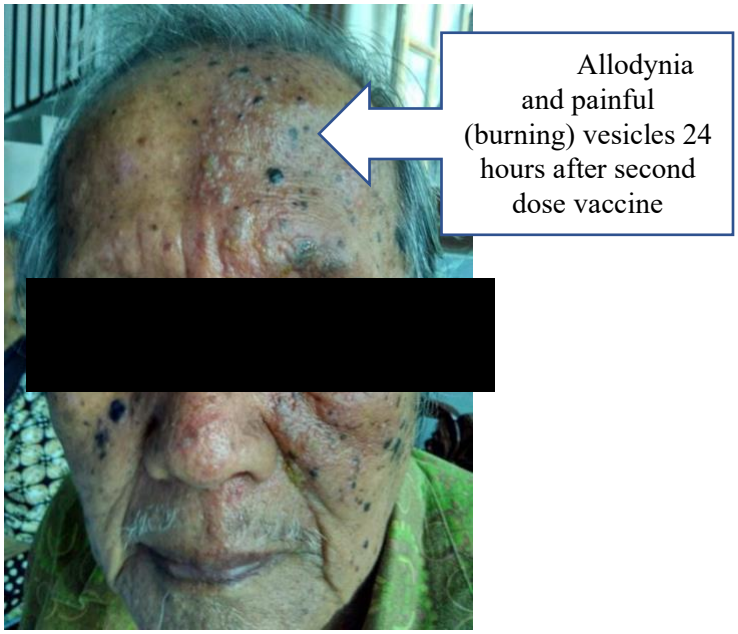

Figure 1. Herpetic neuralgia after COVID-19 vaccine

Figure 2. Herpetic neuralgia

To our knowledge, this is the first case of VZV reactivation following Sinovac COVID-19 vaccination. It is very difficult to establish a straightforward relationship between herpes zoster and inactivated COVID-19 vaccine, immune dysregulation created by the vaccine may play a role in the reactivation of latent VZV infection in the current case. There is a need for further review and studies to elucidate the relationship between the vaccination and herpes zoster reactivation due to planned massive vaccination.

Our report has a number of limitations. First, the study design is not structured to determine a causal relationship between vaccination and HZ. The diagnosis of herpetic neuralgia was based solely on clinical finding.

CONCLUSION

This case report may raise awareness to a potential causal link between COVID-19 vaccination as a trigger of HZ reactivation in high risk patients. In our study the only risk factor was advanced age. Further vigilance and safety monitoring of COVID-19 vaccination side effects is warranted in Indonesia. Clinical registry of safety of COVID19 vaccination among high

risk subjects will provide further insight into this open question.

ACKNOWLEDGMENT

Informed consent and permission for publication of medical images were obtained from the patient.

DECLARATIONS

We declare that there is no conflict of interest of all authors in this work. No financial support was provided for the conduct, preparation, collection, analysis, interpretation, and writing of the report.

REFERENCES

1. *Sharma O, Sultan AA, Ding H, Triggle CR. A review of the progress and challenges of developing a vaccine for COVID-19. Front Immunol. 2020; 11:585354.*
2. *Zhang Y, Zeng G, Pan H, et al, Safety, tolerability, and immunogenicity of an inactivated SARS-CoV-2 vaccine in healthy adults aged 18-59 years: a randomised, double-blind, placebo-controlled, phase 1/2 clinical trial. Lancet2020.*
3. *Baraniuk C, What do we know about China's covid-19 vaccines?BMJ2021;373:n912.*
4. *Lloyd-Sherlock P, Muljono P, Ebrahim S. Ageism in Indonesia's national covid-19 vaccination programme BMJ 2021; 372 :n299*
5. *Saati A, Al-Husayni F, Malibari AA, Bogari AA, Alharbi M. Herpes zoster co-infection in an immunocompetent patient with COVID-19. Cureus. 2020; 12(7):e8998*
6. *Feerira ACAF, Romão TT, Macedo YS, Pupe C, Nascimento OJM. COVID-19 and herpes zoster co-infection presenting with trigeminal neuropathy. Eur J Neurol. 2020; 27(9): 1748- 1750.*
7. *Walter R, Hartmann K, Fleisch F, Reinhart WH, Kuhn M. Reactivation of herpesvirus infections after vaccinations? Lancet. 1999 Mar 6;353(9155):810.*
8. *Johnson RW, Alvarez-Pasquin M-J, Bijl M, Franco E, Gaillat J, Clara JG, et al. Herpes zoster epidemiology, management, and disease and economic burden in Europe: a multidisciplinary perspective. Ther Adv Vaccines. 2015 Jul;3(4):109–20.*
9. *Kawai K, Yawn BP. Risk Factors for Herpes Zoster: A Systematic Review and Meta-analysis. Mayo Clin Proc. 2017 Dec;92(12):1806–21.*