

SFDA SAFETY SIGNAL

“A signal is defined by the SFDA as reported information on a possible causal relationship between an adverse event and a drug, the relationship being unknown or incompletely documented previously. Usually more than a single report is required to generate a signal, depending upon the seriousness of the event and the quality of the information. A signal is a hypothesis together with data and arguments and it is important to note that a signal is not only uncertain but also preliminary in nature”

03-09-2023

Saudi Food and Drug Authority (SFDA) – Safety Signal of COVID-19 Vaccine NRVV AD (CHADOX1 NCOV-19) and the Risk of Chronic Inflammatory Demyelinating Polyradiculoneuropathy

*The Saudi Food and Drug Authority (SFDA) recommends all health care professionals to be aware of the safety signal of **Chronic Inflammatory Demyelinating Polyradiculoneuropathy** associated with the use of **ChAdOx1-S/nCoV-19 Vaccine**. The signal has been originated as a result of routine pharmacovigilance monitoring activities.*

Introduction

The AstraZeneca ChAdOx1-S/nCoV-19 [recombinant] vaccine is a replication-deficient adenoviral vector vaccine against coronavirus disease 2019 (COVID-19). The vaccine expresses the SARS-CoV-2 spike protein gene, which instructs the host cells to produce the protein of the S-antigen unique to SARS-CoV-2, allowing the body to generate an immune response and to retain that information in memory immune cells. ^[1] Chronic inflammatory demyelinating polyneuropathy (CIPD) is a neurological disorder that involves progressive weakness and reduced senses in the arms and legs. It is caused by damage to the fat-based protective covering on nerves called the myelin sheath. CIPD can happen at any age and in both genders but is more common in young adult men. ^[2] The aim of this review is to evaluate the risk of CIPD associated with the use of the vaccine and to suggest regulatory recommendations if required.

Methodology

Signal Detection team at SFDA performed a signal review using National Pharmacovigilance Center (NPC) database, and World Health Organization (WHO) database, VigiBase, with literature screening to retrieve all related information to assess the causality between Chronic Inflammatory Demyelinating Polyradiculoneuropathy and ChAdOx1-S/nCoV-19 vaccine use. The search conducted on May 2023.

Results

Case Review: Signal detection team at SFDA have searched Saudi national database and WHO database to find individual case safety reports (ICSRs) of CIPD associated with ChAdOx1-S/nCoV-19 vaccine. While the search resulted in zero reported local cases, the search in the WHO database resulted in 69 global case-reports. The authors used signal detection tool (Vigilyze) to retrieve all reported

cases.^[3] Authors also applied WHO-UMC causality assessment criteria on top 30 ICSRs with completeness score of (1.0).^[4] Among them, 29 cases of CIPD were possibly linked to the vaccine.

Datamining: The disproportionality of the observed and the expected reporting rate for drug/adverse drug reaction pair is estimated using information component (IC), a tool developed by WHO-UMC to measure the reporting ratio. Positive IC reflects higher statistical association while negative values indicates less statistical association, considering the null value equal to zero. The results of (IC= 0.8) revealed positive statistical association for the vaccine/ADR combination.^[3]

Literature: On May 2023, the author searched for eligible publication using terms “ChAdOx1-S/nCoV-19 vaccine” and “Chronic inflammatory demyelinating polyneuropathy”.

The signal was detected from a Phase 3 safety and efficacy trial of AZD1222 (ChAdOx1 nCoV-19) Covid-19 vaccine. Chronic inflammatory demyelinating polyneuropathy (CIPD) was mentioned in related unsolicited adverse event of special interest (AESIs), serious (4) .adverse event and medically attended adverse event (MAAEs) One case report was found. It reported four patients with chronic inflammatory demyelinating polyneuropathy after ChAdOx1 nCoV-19 vaccine vaccination.^[5]

Furthermore, (CIPD) was mentioned in Canadian Drug Monograph under precautions and adverse events sections.^[6]

Conclusion

The weighted cumulative evidence identified from assessed cases, literature and datamining are sufficient to suggest causal association between ChAdOx1-S/nCoV-19 vaccine and CIPD. Health care professionals and health regulators must be aware of the potential risk in vaccine recipients.

Report Adverse Drug Events (ADRs) to the SFDA

The SFDA urges both healthcare professionals and patients to continue reporting adverse drug reactions (ADRs) resulted from using any medications to the SFDA either online, by regular mail or by fax, using the following contact information:

National Pharmacovigilance Center (NPC)
Saudi Food and Drug Authority-Drug sector
4904 northern ring branch rd
Hittin District
Riyadh 13513 – 7148
Kingdom of Saudi Arabia
Toll free number: 19999
Email: NPC.Drug@sfd.gov.sa

References:

- 1- World Health Organization (WHO), 2021. AstraZeneca ChAdOx1-S/nCoV-19 [recombinant], COVID-19 vaccine. [online] Available at: < <https://www.who.int/publications/m/item/chadox1-s-recombinant-covid-19-vaccine> > [Accessed 25/5/2023].]
- 2- Chronic inflammatory demyelinating polyneuropathy (CIPD). National Institute of Neurological Disorders and Stroke. Available at: [https://www.ninds.nih.gov/health-information/disorders/chronic-inflammatory-demyelinating-polyneuropathy-cidp#:~:text=Chronic%20inflammatory%20demyelinating%20polyneuropathy%20\(CIDP\)%20is%20a%20neurological%20disorder%20that,feeling%20in%20fingers%20and%20toes](https://www.ninds.nih.gov/health-information/disorders/chronic-inflammatory-demyelinating-polyneuropathy-cidp#:~:text=Chronic%20inflammatory%20demyelinating%20polyneuropathy%20(CIDP)%20is%20a%20neurological%20disorder%20that,feeling%20in%20fingers%20and%20toes) (Accessed 25/5/2023).
- 3- Vigilyze.who-umc.org. 2023. [online] Available at: <https://vigilyze.who-umc.org/> [Accessed 25/05/2023].
- 4- World Health Organization WHO (2013). WHO-UMC system for standardised case causality assessment. Available at <https://www.who.int/publications/m/item/WHO-causality-assessment> [Accessed 25/05/2023].

- 5- De Souza, A., Oo, W.M. and Giri, P. (2022) 'Inflammatory demyelinating polyneuropathy after the chadox1 ncov-19 vaccine may follow a chronic course', Journal of the Neurological Sciences, 436, p. 120231. doi:10.1016/j.jns.2022.120231.
- 6- VAXZEVRIATM covid-19 vaccine (ChAdOx1-s [recombinant]), solution for ... Available at: <https://covid-vaccine.canada.ca/info/pdf/astrazeneca-covid-19-vaccine-pm-en.pdf> (Accessed: 18 June 2023).