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"

28-10-2024

Saudi Food and Drug Authority (SFDA) – Safety Signal of Benralizumab and the Risk of Pneumonia

*The Saudi Food and Drug Authority (SFDA) recommends all health care professionals to be aware of the safety signal of **Pneumonia** associated with the use of **Benralizumab**. The signal has been originated as a result of routine pharmacovigilance monitoring activities.*

Introduction

Benralizumab is a humanised IgG1 monoclonal antibody. It is indicated as an add-on therapy for people with severe eosinophilic asthma aged 12 years and over. It binds to the interleukin-5 receptor which is expressed on eosinophils and basophils. Antibody binding leads to apoptosis of these cells through cell-mediated cytotoxicity and aims to reduce eosinophilic inflammation. [1] Pneumonia is an umbrella term for a group of syndromes caused by a variety of organisms that result in infection of the lung parenchyma. Classification schemata have helped establish the common organisms responsible for each type of pneumonia and helped to formulate treatment guidelines for efficient management, in both inpatient and outpatient settings. Optimize interprofessional team strategies to improve care coordination and communication to enhance outcomes for patients affected by pneumonia. [2] The aim of this review is to evaluate the risk of Pneumonia associated with the use of Benralizumab 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 Pneumonia and Benralizumab use. The search conducted on August 2024.

Results

Case Review: Signal detection team at SFDA have searched Saudi national database and WHO database to find individual case safety reports (ICSRs). The WHO database resulted in 293 global case-reports while zero local cases found. The authors used signal detection tool (Vigilyze) to retrieve all reported global cases. [3] Authors also applied WHO-UMC causality assessment criteria on 24 extracted ICSRs with top completeness score of 0.8 and above. [4] Among them, 14 cases were probably and

possibly linked to Benralizumab, and 5 cases assessed as not assessable due to lack of valuable information, while the remaining 5 case assessed as unlikely.

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. The IC result is (1.5) for this drug/ADR combination which reflects positive statistical association. [4]

Literature: The signal team searched the literature to find related publications linking this ADR to Benralizumab. In a recently published clinical trial comparing Benralizumab with Placebo treatment, The study result found that 1% of Benralizumab users developed pneumonia compared to placebo 0%. [5]

Conclusion

The weighted cumulative evidence identified from assessed cases, literature and disproportionality analysis are suggestive for causal association between Benralizumab and Pneumonia. Health care professionals and health regulators must be aware of the potential risk in drug 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@sfda.gov.sa

References:

1- Benralizumab for asthma. (2018). Australian prescriber, 41(5), 164–165. https://doi.org/10.18773/austprescr.2018.0512- Cascella M, Al Khalili Y. Short-Term Memory Impairment. [Updated 2023 Jul 17]. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545136/ [Accessed: 02/08/2024].

2- Jain V, Vashisht R, Yilmaz G, et al. Pneumonia Pathology. [Updated 2023 Jul 31]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK526116/ [Accessed: 02/08/2024].

3- Vigilyze.who-umc.org. 2024. [online] Available at: https://vigilyze.who-umc.org/ [Accessed: 03/08/2024].

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: 03/08/2024].

5- Rothenberg, M. E., Dellon, E. S., Collins, M. H., Bredenoord, A. J., Hirano, I., Peterson, K. A., ... & Datto, C. J. (2024). Eosinophil depletion with benralizumab for eosinophilic esophagitis. *New England Journal of Medicine*, *390*(24), 2252-2263.