

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”

31-05-2023

Saudi Food and Drug Authority (SFDA) – Safety Signal of Levothyroxine and Risk of Vertigo

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

Introduction

Oral levothyroxine is primarily indicated for treating primary, secondary, and tertiary hypothyroidism. Primary hypothyroidism is when the problem occurs in the thyroid gland. Secondary hypothyroidism is when the problem is in the pituitary gland, and there is a decrease in the production of thyroid-stimulating hormone (TSH). Tertiary hypothyroidism is sporadic. Additionally, levothyroxine has FDA approval for pituitary thyrotropin suppression as an adjunct to surgery and radioiodine therapy to manage thyrotropin-dependent well-differentiated thyroid cancer. This activity covers important information about prescribing levothyroxine, including mechanism of action, pharmacology, adverse event profiles, eligible patient populations, and monitoring, and highlights the interprofessional team's role in managing various forms of hypothyroidism with levothyroxine. ^[1] Vertigo is an abnormal sensation of motion. It can occur in the absence of motion or when a motion is sensed inaccurately. Spinning vertigo is usually of inner ear origin. Disequilibrium is a sensation of impending fall or of the need to obtain external assistance for proper locomotion. It is sometimes described as a feeling of improper tilt of the floor, or as a sense of floating. This sensation can originate in the inner ear or other motion sensors, or in the central nervous system. Positional vertigo is a sensation of spinning that occurs after the patient's head has moved to a new position with respect to gravity. ^[2] The aim of this review is to evaluate the risk of Vertigo associated with the use of Levothyroxine and to suggest regulatory recommendations if required.

Methodology

Signal Detection team at the National Pharmacovigilance Center (NPC) of Saudi Food and Drug Authority (SFDA) performed a comprehensive signal review using its national database as well as the World Health Organization (WHO) database (VigiBase), to retrieve related information for assessing

the causality between Levothyroxine and the risk of Vertigo. ^{[3][4]} WHO-Uppsala Monitoring Centre (UMC) criteria have been used as standard for assessing the causality of the reported cases. ^[5]

Results

Case Review: The search in the Saudi local database resulted in one not-assessable case due to insufficient information on the drug and ADR.^[3] Globally, the number of resulted cases for the combined drug/adverse drug reaction is 12,678 ICSRs as of March 21st, 2023. ^[4] The reviewers have extracted and assessed thirty cases with highest completeness score. The causality assessment resulted in six probable cases, twenty one possible cases and three unlikely cases

Data Mining: 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 result of (IC= 4.4) revealed a positive statistical association for the drug/ADR combination, which means “Vertigo” with the use of “Levothyroxine” have been observed more than expected when compared to other medications available in WHO database. ^[4]

Conclusion

The weighted cumulative evidence identified from causality assessment of the reported cases, and data mining are sufficient to support a causal association between Levothyroxine and the risk of Vertigo. Health regulators and health care professionals must be aware of this potential risk and it is advisable to monitor any signs or symptoms in treated patients.

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. Eghtedari B, Correa R. Levothyroxine. [Updated 2022 Sep 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK539808/>
2. Walker HK, Hall WD, Hurst JW, editors. Clinical Methods: The History, Physical, and Laboratory Examinations. 3rd ed. Boston: Butterworths; 1990. PMID: 21250045.
3. Saudi Vigilance (2023). retrieved from: <https://ade.sfd.gov.sa> [accessed 21/03/2023]
4. Vigilyze.who-umc.org. 2021. [online] Available at: <<https://vigilyze.who-umc.org/>> [Accessed 7/29/2021].
5. World Health Organization WHO (2013). WHO-UMC system for standardised case causality assessment. Available at <https://www.who.int/publications/m/item/WHO-causalityassessment> [Accessed 21/03/2023]