Journal of Asian Multicultural Research for Medical and Health Science Study *ISSN: 2708-972X*
Vol. 5 No. 3, 2024 (page 001-004)
DOI: https://doi.org/10.47616/jamrmhss.v5i3.540

Desvenlafaxine Induced Constipation in A Geriatric Patient: A Case Report

Rishav Kumar Singh[1], Girish Joseph[2], Prabhjot Kaur[3], Neena Bhatti[4], Dinesh Badyal[5]

[1]Student, Phase III Part 2, Christian Medical College & Hospital, Ludhiana

[2,4]Assistant Professor, Department of Pharmacology, Christian Medical College & Hospital, Ludhiana

[3]Pharmacovigilance Associate, AMC, Christian Medical College & Hospital, Ludhiana

[5]Professor & Head, Department of Pharmacology, Christian Medical College & Hospital, Ludhiana

Received: August 29, 2024 Received in Revised: September 28, 2024 Accepted: October 17, 2024

Abstract

India being a developing country has a high burden of Tuberculosis (TB). It is a communicable disease and a major global heath challenge. Considering the impact of this illness on both individual patients and public health, it is critical to comprehend the effectiveness and adverse pharmacological profile of the medications. Although most patients on a daily ATT regimen do not encounter the documented ADRs listed below, doctors and patients should be concerned about them. For example, rifampicin induced discoloration of body fluids is often overlooked as it is "innocuous". Nonetheless, Adverse drug reaction (ADRs) reports on these drugs are scarce in proportion especially in regards to the most common ADRs like antitubercular treatment (ATT) induced chromaturia.

Keywords: Desvenlafaxine, Constipation, SNRI, Adverse Drug Reaction

Introduction

Major depressive disorder (MDD) is defined as a psychiatric illness and manifests as persistent feelings of sadness or loss of interest in activities for at least 2 weeks (Zhdanava et al., 2021). According to the current DSM-5 diagnostic criteria, MDD is characterized by low mood, loss of enjoyment or interest, increased or decreased hunger, hypersomnia or insomnia, agitation or slowdown of psychomotor function, energy loss or exhaustion, feelings of shame, worthlessness, difficulty focussing or making decisions and lastly suicidal ideation (Malgaroli et al., 2021). The patient's treatment regimen for MDD includes medications such as SNRIs (Selective Serotonin and Noradrenaline Reuptake Inhibitors), SSRIs (Selective Serotonin Reuptake Inhibitors), MOAI (Mono-amine oxidase Inhibitors) and TCAs (Tricyclic Antidepressants). Amongst these class of drugs, SNRIs emerged n the 1990s to shield the patients from the side effects of SSRIs. The currently available SNRIs include venlafaxine, desvenlafaxine and duloxetine. The efficacy of desvenlafaxine has been reported as similar to SSRIs (Karrouri et al., 2021).

Desvenlafaxine is an anti-depressant drug that acts by blocking the reuptake of both noradrenaline and serotonin. The recommended starting dose for venlafaxine is 75 mg/day, divided into 2 or 3 doses. Tolerance and clinical response will determine whether the dose is increased to 150 mg/day and, if necessary, up to 225 mg/day. The most commonly observed ADRs (Adverse drug reactions) were headache, nausea, reduced appetite and abdominal pain.

Coughing, dizziness and diarrhoea were less frequently reported. Similar to the majority of SSRIs, an increase in incidence of suicidal ideation was also noted (Naseeruddin et al., 2024).

One of the lesser reported adverse drug reactions of SNRIs is constipation (Jani & Marsicano, 2018). According to Vigiaccess database out of a total of 20,000 ADRs reported with desvenlafaxine, only 400 cases were reported with constipation, which represents only 2% of the total ADRs reported (Vigi Access, 2024). It has been observed that when using antidepressants, patients with severe MDD frequently experience gastrointestinal adverse effects that can cause them to stop taking their medication (Oliva et al., 2021). Therefore, it is important to report any gastrointestinal issues occurring from the use of desvenlafaxine.

Case Description

A 62 year old gentleman presented on 9th March 2024 to the Psychiatry OPD with signs of severe depression for which he was prescribed Desvenlafaxine (SNRI), 100mg, OD. The patient presented on 13th March 2024 to the Psychiatry OPD with complaints of constipation for which he was prescribed a laxative (milk of magnesia + liquid paraffin) in the form of syrup. The patient took the medicine for a span of 10 days. After this duration, patient reported still having constipation although the severity had decreased than before. There was no change in dose of desvenlafaxine. The Naranjo's score was 5 (probable) and the causality assessment showed probable correlation with the current adverse event (Naranjo et al., 1981).

Discussion

World Health Organization (WHO) defines adverse drug reaction (ADR) as “a response to a medication that is noxious and unintended and occurs at doses normally used in man.” ADRs not only increase the burden on the healthcare system but also have a detrimental impact on patients' quality of life. Their rising rates of illness and mortality present a severe threat to public health (Abhilasha et al., 2024). Constipation is defined as a lack of satisfactory defecation which incorporates various symptoms and may be either chronic or sporadic (Barberio et al., 2021). It is of two types depending on the underlying cause-primary and secondary. Primary is usually due to an anorectal sensory-motor or colon neuromuscular dysfunction, while secondary has been associated with medication use. Laxatives such as magnesium salts and lactulose are frequently administered to alleviate the symptoms associated with constipation (Sharma et al., 2020).

The primary mechanism behind constipation associated with SNRI use is the role of 5-HT3 (5-hydroxytryptamine 3 receptor antagonist) also known as serotonin receptor (Hoyer, 2020). The SNRIs such as desvenlafaxine exhibit their primary action through serotonin receptor as they cause inhibition of the serotonin and norepinephrine transporter (Naseeruddin et al., 2024). Desvenlafaxine are prescribed when patients are not responding to SSRIs. However, they have reported a higher incidence of gastrointestinal side effects and lesser tolerability as compared to SSRIs although the efficacy remains the same (Karrouri et al., 2024). It has been noted that if patient has a problem of constipation avoid with SNRI intake, SSRIs can be used as they stimulate intestinal transit but they do not improve the pain of constipation (Hanna-Jairala & Drossman, 2022).

There have been very scant reports regarding constipation associated with SNRI, in particularly desvenlafaxine use. Considering this and that the anti-depressants exhibit different types of gastrointestinal side effects depending on the mechanism of action of the drug (Oliva et al., 2021), it is imperative to report the above mention study for further research in this domain.

Conclusion

Desvenlafaxine is being used as an antidepressant in treating major depression disorders and a high number of adverse drug reactions have been reported with the suspect drug out of which occurrence of constipation with the drug is significant. Laxatives are used for the treatment of constipation. It is important to understand the mechanism behind constipation occurrence associated with different anti-depressant use.

References

Abhilasha, P., Bhatti, N., Joseph, G., & Badyal, D. K. (2024). Sodium Valproate-Induced Hyperammonemia: A Case Series in a Tertiary Care Hospital. *Cureus*, *16*(7).

Barberio, B., Judge, C., Savarino, E. V., & Ford, A. C. (2021). Global prevalence of functional constipation according to the Rome criteria: a systematic review and meta-analysis. *The Lancet Gastroenterology & Hepatology*, *6*(8), 638-648.

Hanna-Jairala, I., & Drossman, D. A. (2022). CENTRAL NEUROMODULATORS IN IRRITABLE BOWEL SYNDROME. WHY, HOW AND WHEN. *Official journal of the American College of Gastroenterology| ACG*, 10-14309.

Hoyer, D. (2020). Targeting the 5-HT system: Potential side effects. *Neuropharmacology*, *179*, 108233.

Jani, B., & Marsicano, E. (2018). Constipation: evaluation and management. *Missouri medicine*, *115*(3), 236.

Karrouri, R., Hammani, Z., Benjelloun, R., & Otheman, Y. (2021). Major depressive disorder: Validated treatments and future challenges. *World journal of clinical cases*, *9*(31), 9350.

Malgaroli, M., Calderon, A., & Bonanno, G. A. (2021). Networks of major depressive disorder: A systematic review. *Clinical Psychology Review*, *85*, 102000.

Naranjo, C. A., Busto, U., Sellers, E. M., Sandor, P., Ruiz, I., Roberts, E. A., ... & Greenblatt, D. J. (1981). A method for estimating the probability of adverse drug reactions. *Clinical Pharmacology & Therapeutics*, *30*(2), 239-245.

Loschi, J., Minuti, G., dos Santos, A. A., de Lima Antonio, J. A., Abuhab, A., Sommer, C., ... & Zanin, M. E. (2024). Avaliação da Biodisponibilidade Relativa/Bioequivalência entre formulações orais de desvenlafaxina 50 mg, em participantes brasileiros, saudáveis, em condições de jejum e pós-prandial. *Brazilian Journal of Health Review*, *7*(1), 1575-1588. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534829/

Oliva, V., Lippi, M., Paci, R., Del Fabro, L., Delvecchio, G., Brambilla, P., ... & Serretti, A. (2021). Gastrointestinal side effects associated with antidepressant treatments in patients with major depressive disorder: a systematic review and meta-analysis. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *109*, 110266.

Sharma, A., Rao, S. S., Kearns, K., Orleck, K. D., & Waldman, S. A. (2021). Diagnosis, management and patient perspectives of the spectrum of constipation disorders. *Alimentary pharmacology & therapeutics*, *53*(12), 1250-1267.

Vigi Access. World Health Organisation; 2015. Available from:https://www.vigiaccess.org/. [Last accessed on 2024 Aug 23].

Zhdanava, M., Pilon, D., Ghelerter, I., Chow, W., Joshi, K., Lefebvre, P., & Sheehan, J. J. (2021). The prevalence and national burden of treatment-resistant depression and major depressive disorder in the United States. *The Journal of clinical psychiatry*, *82*(2), 29169.