

## Domperidone and sudden cardiac death in the elderly due to ventricular arrhythmias in developing countries

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*Dear Editor*, Domperidone is a prokinetic drug used to treat many gastrointestinal conditions including delayed gastric emptying and gastroesophageal reflux disease due to its promotility effects by antagonism on dopamine-2 receptors in the gut. It has also been used as an over-the-counter drug for nausea and vomiting due to its direct action on the chemoreceptor trigger zone involved in vomiting. The drug has gained a lot of popularity as it is more effective than other prokinetic drugs like mosapride and metoclopramide. In addition, it causes less drowsiness than metoclopramide and mosapride because it does not readily cross the blood-brain barrier.<sup>1</sup> However, this drug has many side effects including dry mouth, headache and weight gain.<sup>2</sup> Despite this, domperidone has been used as a prokinetic in many countries for a long time.

However, the more critical concern about the use of domperidone is QT interval prolongation and its association with sudden cardiac death due to ventricular arrhythmias in patients aged 50 years and older and in those taking more than 30mg/day. A meta-analysis conducted in November 2018 by Bor et al. compared the odds of developing cardiovascular events like sudden cardiac death in patients aged >50 taking domperidone more than 30mg/day to patients not taking domperidone or any other drugs was consistent with statistically significant increased risk of sudden cardiac deaths due to ventricular arrhythmias (OR: 2.09, 95% CI, 1.59 to 2.75,  $p < 0.001$ ).<sup>3</sup>

These are not the only studies to show these results. Many other studies have been done so far which showed an association between domperidone usage and sudden cardiac deaths in the elderly. A systematic review published in 2021 pooled data across multiple studies and showed that domperidone was significantly associated with an increased risk of sudden cardiac death and ventricular arrhythmias in older patients when taken more than 30mg/day. In this meta-analysis when data were pooled

across nonoverlapping multiple studies, domperidone was associated with an increased risk of sudden cardiac death in the elderly compared to non-use (adjusted odds ratio: 1.69(1.46-1.95).<sup>4</sup> As far as the young population is concerned, there are very few studies done, so more research needs to be done to find out if domperidone causes sudden cardiac death in young patients.

Despite all these concerns, this drug is still being prescribed in many developing countries, especially in Pakistan. In Pakistan, this drug is being prescribed by every other physician for a lot of conditions causing nausea and vomiting and is often self-medicated because it is readily available over the counter and sold at every pharmacy without the need for any prescription.<sup>5</sup> Physicians should refrain from prescribing this drug to patients, especially the elderly and instead should prescribe other prokinetic drugs if needed.

To prevent self-medication of domperidone, raising awareness about this drug's side effects is important to prevent people from using this medicine. To raise awareness about the potential risks of domperidone use, the healthcare provider can educate patients about the signs and symptoms of heart problems such as palpitations and shortness of breath and advise them to seek medical attention immediately if they experience these symptoms. Additionally, healthcare regulatory authorities can issue warnings about the safe use of domperidone. Doing so could significantly impact and help ensure that domperidone will not be prescribed to patients at risk.

**Disclaimer:** None.

**Conflict of Interest:** None.

**Funding Source:** None.

**DOI:** <https://doi.org/10.47391/JPMA.11377>

### References

1. Song BG, Lee YC, Min YW, Kim K, Lee H, Son HJ, et al. Risk of domperidone induced severe ventricular arrhythmia. *Sci Rep* 2020;10:12158. doi: 10.1038/s41598-020-69053-4
2. McBride GM, Stevenson R, Zizzo G, Rumbold AR, Amir LH, Keir A, et al. Women's experiences with using domperidone as a galactagogue to increase breast milk supply: an australian cross-sectional survey. *Int Breastfeed J* 2023;18:11. doi: 10.1186/s13006-023-00541-9
3. Bor S, Demir M, Ozdemir O, Yuksel K. A meta-analysis on the cardiac

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**Submission complete:** 04-12-2023

**Review began:** 08-03-2024

**Acceptance:** 08-06-2024

**Review end:** 05-06-2024

- safety profile of domperidone compared to metoclopramide. *United European Gastroenterol J* 2018;6:1331-46. doi: 10.1177/2050640618799153
4. Ou LB, Moriello C, Douros A, Filion KB. Domperidone and the risks of sudden cardiac death and ventricular arrhythmia: A systematic review and meta-analysis of observational studies. *Br J Clin Pharmacol* 2021;87:3649-58. doi: 10.1111/bcp.14737
  5. Kalwar A, Mangi RQ, Rehman JU, Ochani S, Faraz M, Kukreja S, et al. Lack of knowledge regarding the misuse of domperidone in Pakistan and its serious consequences: short communication. *Ann Med Surg (Lond)* 2023;85:3239-40. doi: 10.1097/MS9.0000000000000723
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**Author Contribution:**

AR: Topic selection and literature review.

SS: Review and final approval.

HJ: Writing.