http://www.ijwhr.net

doi 10.15296/ijwhr.2023.09

Open Access Editorial

IJWHR

International Journal of Women's Health and Reproduction Sciences
Vol. 11, No. 2, April 2023, 44

ISSN 2330-4456

Can Ondansetron be an Alternative to Cabergoline for Preventing Ovarian Hyperstimulation Syndrome?

Şükrü Bakırcı[1], Mertihan Kurdoğlu[1*], Arash Khaki[2]

Ovarian hyperstimulation syndrome (OHSS) is a serious iatrogenic complication of infertility treatments, characterized by an increased capillary permeability due to human chorionic gonadotropin stimulated secretion of vasoactive substances from the ovaries. In the development of OHSS, various agents including vascular endothelial growth factor (VEGF) have been implicated (1).

Increased vascular permeability resulting from vascular endothelial growth factor receptor-2 (VEGFR-2) activation by VEGF is an important step in the development of OHSS (2). Although no specific treatment of OHSS exists, when it is administered prophylactically, cabergoline which acts as an antagonist for VEGF-VEGF2 receptor and agonist for dopamine receptor 2, reduces the risk and severity of OHSS without any adverse effect on the maturation of oocyte and fertilization (3, 4).

A neurotransmitter, serotonin, is considered to have a role in the process of new blood vessel formation and in endothelial cell signaling. It has been reported to have some effects similar to those of VEGF (5). A selective antagonist for serotonin 5-HT3 receptor, ondansetron which is widely used to treat nausea and vomiting, showed a similar efficacy to cabergoline in preventing OHSS in an experimental rat study from our clinic, recently (6).

Based on this experimental finding, further clinical studies comparing the results of ondansetron with those of cabergoline to prevent OHSS are warranted, and it would be interesting to see whether ondansetron might be used as an alternative to cabergoline.

Ethical Issues

Not applicable.

Şükrü Bakırcı graduated from Faculty of Medicine, Afyon Kocatepe University, Afyon, Turkey in 2012. In 2017, he completed her residency in the field of Obstetrics and Gynecology at Faculty of Medicine, Kırıkkale University, Kırıkkale, Turkey. In Turkey, his first place of work as an obstetrician and gynecologist was Mardin Dargeçit State Hospital. Later, he worked in Kırıkkale Yüksek İhtisas Hospital for 2 years. After working in the İzmir Dikili State Hospital for about 1 year; currently, he has been working as an Assistant Professor in the Department of Obstetrics and Gynecology at Kırıkkale University Faculty of Medicine since 2020. His areas of interest are obstetrics, perinatology, gynecology, and reproductive endocrinology.

Conflict of Interests

The authors have no conflicts of interest to disclose.

References

1. Nastri CO, Ferriani RA, Rocha IA, Martins WP. Ovarian hyperstimulation syndrome: pathophysiology and prevention. J Assist Reprod Genet. 2010;27:121-128. doi:10.1007/s10815-010-9387-6
2. Carizza C, Abdelmassih V, Abdelmassih S, et al. Cabergoline reduces the early onset of ovarian hyperstimulation syndrome: a prospective randomized study. Reprod Biomed Online 2008;17:751-755. doi:10.1016/s1472-6483(10)60401-4
3. Zaidise I, Friedman M, Lindenbaum ES, Askenazi R, Peretz BA, Paldi E. Serotonin and the ovarian hyperstimulation syndrome. Eur J Obstet Gynecol Reprod Biol 1983;15:55-60. doi:10.1016/0028-2243(83)90297-6
4. Zamani A, Qu Z. Serotonin activates angiogenic phosphorylation signaling in human endothelial cells. FEBS Lett. 2012;586:2360-2365. doi:10.1016/j.febslet.2012.05.047
5. Elchalal U, Schenker JG. The pathophysiology of ovarian hyperstimulation syndrome--views and ideas. Hum Reprod. 1997;12:1129-1137. doi:10.1093/humrep/12.6.1129
6. Bakirci S, Sagsoz N, Devrim T, Sahin Y, Bulanik M, Gozuyukari H. Effect of ondansetron for preventing of ovarian hyperstimulation syndrome: in an experimental rat model. Gynecol Endocrinol. 2022. doi:10.1080/09513590.2022.2163233

Received 3 January 2023, **Accepted** 25 January 2023, **Available online** 5 February 2023

[1]Department of Obstetrics and Gynecology, Kırıkkale University Faculty of Medicine, Kırıkkale, Turkey. [2]Editor-in-Chief of International Journal of Women's Health and Reproduction Sciences.
*Corresponding Author: Mertihan Kurdoğlu, Tel: +90 318 333 50 00 (Internal: 5215), Email: mkurdoglu@kku.edu.tr