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Letter to the Editor

Semaglutide: a gendered phenomenon—women's increased vulnerability to adverse drug reactions in the global weight loss trend

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Semaglutide represents an emblematic case of how a drug originally developed for a specific indication can transform into a global phenomenon, with both clinical and social implications. Originally designed as a GLP-1 receptor agonist for the treatment of type 2 diabetes, semaglutide quickly gained a new dimension of use due to its proven effectiveness in reducing body weight.[1] This phenomenon, however, has paved the way for massive off-label use, particularly among women eager to lose weight,[2] a trend reflected both in pharmacovigilance data and global web searches.

The analysis of the most recent pharmacovigilance data, extracted from the FDA Adverse Event Reporting System (FAERS) Public Dashboard,[3] provides a clear picture of the adverse drug reactions (ADRs) associated with semaglutide when used for weight loss purposes. A total of 5310 cases have been reported, of which 3896 involve women (73.35%), 1161 men (21.85%), and 253 unspecified cases (4.8%). This distribution highlights how women are more prone to adverse reactions, likely due to higher social and cultural pressure to lose weight, which leads them to use the drug more frequently than men. Among the most common ADRs are gastrointestinal disorders, with 1011 cases of nausea (19.04%), 677 of vomiting (12.75%), and 449 of diarrhea (8.45%). Improper use of the product is also consistently reported and represents a significant issue, with 1114 cases of off-label use (20.97%) and 903 of use in unapproved indications (17%). The data also show that the most affected age group is between 18 and 64 years, accounting for 54.41% of cases, followed by the 65–85 age group (13.69%). The temporal analysis of the reports reveals a steady growth over the years, with a significant peak in 2024, with 2638 reported cases (49.68%).

In parallel with the growth of ADR reports, there has been an exponential increase in global interest in semaglutide, particularly in its commercial form, Ozempic. Through an analysis of Google Trends, it is clear that the drug has become a topic of great global relevance, with significant peaks of interest between 2019 and 2024. Countries such as Canada, the United States, Australia, Brazil, and Ireland lead this trend, with Canada recording the highest interest score (100), followed by the United States (85) and Australia (85). This interest reflects not only the drug's effectiveness but also the impact of media campaigns, influencers, and discussions on social media,[4,5] which have contributed to promoting Ozempic as a sort of "miracle solution" for weight loss.[6]

Pharmacovigilance data reveal that women are significantly more exposed to ADRs than men, and the temporal analysis of reports shows a concerning trend, with an exponential increase in cases in recent years, culminating in 2024.

The growing global interest in semaglutide, fueled by media campaigns, influencers, and social media platforms, has turned the drug into a true social phenomenon, especially among women. This situation highlights the urgency of strategies

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to promote conscious and regulated use, as well as to minimize issues related to self-medication and abuse. To address these challenges, it is crucial to implement targeted educational campaigns for both healthcare professionals and the public to raise awareness of the appropriate use of semaglutide and the risks associated with off-label use. Regulatory authorities should enhance monitoring systems and enforce measures to ensure the drug's use aligns with approved indications. Moreover, collaboration with media platforms could facilitate the dissemination of accurate information, counteracting misinformation[7], and discouraging the promotion of unregulated uses.

Declarations

Ethics approval and consent to participate

Since all data were processed from sources with anonymized data and the study does not include any information that could make the patient identifiable, the approval of the Ethics Committee and consent to participation were not considered necessary.

Consent for publication

Not applicable.

Author contributions

Eleonora Castellana: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Writing – original draft.

Maria Rachele Chiappetta: Supervision; Validation; Visualization; Writing – review & editing.

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Competing interests

The authors declare that there is no conflict of interest.

Availability of data and materials

The authors declare the availability of data and materials.

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