

## Trailblazer Tepezza for thyroid

Aamna Khatoon<sup>1</sup>, Fatima Kaleem Ahmed<sup>2</sup>, Amna Kaleem Ahmed<sup>3</sup>

Dear Editor, Teprotumumab is a human monoclonal antibody that blocks the insulin-like growth factor-1 receptor (IGF- 1R). Approved by the Food and Drug Administration (FDA) on January 21<sup>st</sup>, 2020, under the brand name Tepezza, to be used as the treatment for Graves eye disease in adults based on its landmark success in the randomised double-blind clinical trials named OPTIC study.<sup>1</sup>

A meta-analysis published in the International Journal of Clinical Practice in 2023 stated that at week 24 of treatment, Teprotumumab had been shown to significantly improve proptosis in 71.86% participants, diplopia in 73.65% of participants and decrease tissue inflammation, as measured by the clinical activity score to zero or one, thus improving the overall quality of life.<sup>2</sup> Even though the drug has adverse effects namely alopecia, fatigue and headache, the risk of these occurring was the same as the placebo group. Other potential side effects included nausea, dry skin and muscle spasms which were deemed mild.<sup>3</sup> One manageable side effect reported was hypoglycaemia, especially in individuals already diagnosed with diabetes, which could be corrected by adjusting their anti-diabetic medication. Importantly, this drug should be avoided in pregnancy due to its prospective teratogenic effects<sup>2</sup>. The promising statistics outweigh the risks associated with the drug and make teprotumumab a game-changer for thyroid eye disease patients. Pakistan has a 2% prevalence of hyperthyroidism, with a major (90%) contribution from Graves' disease.<sup>4</sup> Although this 2%

seems insignificant, yet it amounts up to 4.2 million people. Unfortunately, this drug has not reached Pakistan yet and we still resort to using conventional treatments namely lubricants and steroids despite their worrying side effects and contraindications in patients having other comorbid conditions which majority of the people of Pakistan suffer from such as diabetes, hypertension, osteoporosis and hepatic dysfunction.<sup>5</sup> The government should subsidize the use of this novel drug in TED patients by incentivizing its availability and training physicians to monitor the patients taking the infusions. The patients will need to be educated about the adverse profile and danger signs when to report their symptoms to the doctor. Teprotumumab is not just a treatment, it is a cure for most patients. Should we not switch from using the current harmful conventional drugs to the more contemporary ones with better outcomes?

**DOI:** <https://doi.org/10.47391/JPMA.20296>

**Disclaimer:** None.

**Conflict of Interest:** None.

**Source of Funding:** None.

### References

1. Michelle Ting, Daniel G Ezra. Teprotumumab: a disease modifying treatment for graves' orbitopathy. *Thyroid Res.* 2020; 13:12.doi: 10.1186/s13044-020-00086-7.
2. Lin F, Yao Q, Yu B, Deng Z, Qiu J, He R. The Efficacy and Safety of Teprotumumab in Thyroid Eye Disease: Evidence from Randomized Controlled Trials. *Int J Clin Pract.* 2023; 2023:6638089.doi: 10.1155/2023/6638089.
3. Stan MN, Krieger CC. The Adverse Effects Profile of Teprotumumab, *J Clin Endocrinol Metab.* 2023; 108:e654-62.doi: 10.1210/clinem/dgad213.
4. Attaullah S, Haq BS, Muska M. Thyroid dysfunction in Khyber Pakhtunkhwa, Pakistan. *Pak J Med Sci.* 2016; 32:111-5. doi: 10.12669/pjms.321.8476.
5. Khan SH, Malik U, Ahmed F, Siddiqui ZK, Munir S, Rashid N. Conservative Management of Thyroid Eye Disease. *J Coll Physicians Surg Pak.* 2021 May;31(5):599-601.doi: 10.29271/jcpsp.2021.05.599.

.....  
<sup>1,2</sup>Bahria University Medical and Dental College, Karachi, Pakistan; <sup>3</sup>4th Year MBBS Student, Jinnah Medical and Dental College, Karachi, Pakistan.

**Correspondence:** Aamna Khatoon. **Email:** [aamna0156@gmail.com](mailto:aamna0156@gmail.com)

**ORCID ID:** 0009-0007-3804-1333

**Submission complete:** 14-03-2024 **First Revision received:** 04-10-2024

**Acceptance:** 05-10-2024 **Last Revision received:** 04-10-2024