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# A case report of hair loss after tirzepatide treatment

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## Abstract

***Introduction.*** Tirzepatide is a relatively new drug that acts as an agonist of both glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP) receptors, used in the treatment of type 2 diabetes and obesity. Although it has a positive safety profile, there have been reports of adverse reactions, including hair loss. ***Material and Methods.*** The article describes the case of a 33-year-old woman who developed hair loss after six months of treatment with tirzepatide, despite relatively normal laboratory results. ***Results.*** Four months after discontinuing the medication, the patient observed a spontaneous reduction in hair loss and the regrowth of new hair. ***Conclusions.*** This case shows that tirzepatide treatment may cause an adverse reaction – hair loss. This mechanism is likely indirectly related to rapid weight loss or metabolic changes. *(Farm Współ 2026; 19: 56-59) doi: 10.53139/FW.20261905*

*Keywords: tirzepatide, obesity, glucagon-like peptide-1 receptor agonists, hair loss*

**List of abbreviations**

| | |
|---|---|
| ALT | Alanine Aminotransferase |
| anti-TG | Anti-Thyroglobulin Antibodies |
| anti-TPO | Anti-Thyroid Peroxidase Antibodies |
| AST | Aspartate Aminotransferase |
| BMI | Body Mass Index |
| CA-19.9 | Carbohydrate Antigen 19-9 |
| CEA | Carcinoembryonic Antigen |
| CRP | C-Reactive Protein |
| FD | Folliculitis Decalvans |
| FT3 | Free Triiodothyronine |
| FT4 | Free Thyroxine |
| GGTP | Gamma-Glutamyl Transpeptidase |
| GIP | Glucose-Dependent Insulinotropic Peptide |
| GLP-1 | Glucagon-Like Peptide-1 |
| HDL | High-Density Lipoprotein |
| IgE | Immunoglobulin E |
| LDL | Low-Density Lipoprotein |
| SmPC | Summary of product characteristic |
| TSH | Thyroid-Stimulating Hormone |

## Introduction

Tirzepatide is an innovative incretin-based drug that, as an agonist of both glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP) receptors, shows antihyperglycemic effects [1]. Clinical trials have demonstrated its effectiveness in both weight reduction and glycemic control in patients with type 2 diabetes [2]. Due to the growing popularity of tirzepatide in obesity treatment, new observations regarding potential side effects have occurred. One of the possible adverse reactions of tirzepatide is hair loss. The article aims to present a case of a woman who was obese at the beginning of treatment and developed noticeable hair loss and thinning after six months of tirzepatide therapy. Consent for publication was obtained from the patient, who agreed to the publication of her anonymized data.

Hair loss (alopecia) is a condition characterized by a reduced number of active hair follicles, leading to diffuse or localized thinning of hair on the scalp or body. One of the most common mechanisms of this condition is telogen effluvium. This condition is characterized by diffuse hair loss within months of significant systemic stress, due to premature follicular transition from the anagen (active growth phase) to the telogen (resting phase). The telogen phase lasts approximately 3 months, after which excessive hair loss ensues [3].

Risk factors for telogen effluvium include:

- sudden weight loss,
- nutritional deficiencies (like iron, zinc, B vitamins),

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- physical or psychological stress,
- hormonal disturbances,
- certain medications (retinoids, beta-blockers, antidepressants, chemotherapeutic agents),
- viral infections, chronic systemic diseases, scalp disorders.

In the context of pharmacotherapy, hair loss may result from direct toxic effects on hair follicles or from indirect effects through metabolic and hormonal changes [3-5].

## Case report

A 33-year-old woman, a healthcare professional (pharmacist) who independently made decisions regarding her treatment and investigations, with obesity before therapy initiation (Body Mass Index - BMI 31.8 kg/m$^2$), began treatment with tirzepatide at an initial dose of 2.5 mg once weekly, which was increased to 5 mg weekly after four months. She did not follow the standard 4-week dose increase schedule because the lowest possible dose was already providing an effective weight-loss result. The therapy lasted approximately six months. During treatment, she consumed smaller, lower-calorie meals than before; otherwise, her lifestyle habits remained unchanged. The woman did not consume alcohol or use any other substances. During treatment, she lost 15 kg of body weight, representing a 16% reduction. The average rate of weight loss was approximately 2–3 kg per month.

After the first dose of tirzepatide, the woman experienced muscle aches and increased fatigue, which resolved within one day and did not recur. During the course of treatment, she noticed an increased hair loss after about 4 months of using the medication. Upon completing tirzepatide therapy and reaching a BMI of 26.6 kg/m$^2$, she noticed subjective diffuse hair thinning. The hair loss was non-scarring, and there were no accompanying signs of inflammation or scalp itching.

Laboratory tests performed in the fourth month of therapy showed the following parameters within normal ranges: amylase, anti-TG, anti-TPO, AST, CA-19.9, CEA, complete blood count, CRP, D-dimers, ferritin (47,30 ng/ml, reference range: 13,00 – 150,00), FT3, FT4, GGT, glucose, glycated hemoglobin, HDL cholesterol, insulin, iron, total bilirubin, total IgE, TSH, vitamin B12 and vitamin D.

Slightly elevated values included:

- red blood cells: 5.19 million/μL (normal range: 4–5 million/μL),
- creatinine: 93.4 μmol/L (normal: 44–80 μmol/L),
- total cholesterol: 197 mg/dL (normal: 115–190 mg/dL),
- non-HDL cholesterol: 148.70 mg/dL (recommended: <130 mg/dL),
- LDL cholesterol: 127.30 mg/dL (normal: <115 mg/dL),
- triglycerides: 107 mg/dL (normal: <100 mg/dL),
- ALT: 49 U/L (normal: 10–35 U/L),
- alkaline phosphatase: 106 U/L (normal: 35–104 U/L).

The woman had regular menstrual cycles. Androgen levels (testosterone and DHEA-S) were not measured during laboratory testing. Information from dermatological assessment and trichoscopy is not available. The woman was not taking any other medications, herbal products, or dietary supplements. She also did not suffer from any chronic or acute medical conditions, such as androgenetic alopecia, diabetes, or hypothyroidism. She also had no history of psychological stress.

Four months after discontinuing tirzepatide treatment, the woman observed a spontaneous reduction in hair loss and the appearance of regrowing hair. After six months, her hair was back to its original volume. She did not use any medications or products to promote hair regrowth.

The woman did not experience any other adverse reactions related to the use of the medication.

## Discussion

According to the Summary of Product Characteristics (SmPC) for tirzepatide (brand name: Mounjaro), version dated 23 Jan 2026, hair loss is listed as a common adverse reaction, occurring in≥1/100 to <1/10 patients [6].

In the SURMOUNT-1 clinical trial investigating tirzepatide for the treatment of obesity, the following frequencies of alopecia were observed:

- Tirzepatide dose 5 mg: 5.1%
- Tirzepatide dose 10 mg: 4.9%
- Tirzepatide dose 15 mg: 5.7%
- Placebo: 0.9% [7].

In another study, SURMOUNT-3, after achieving≥5.0% weight reduction during a 12-week intensive lifestyle intervention, participants were randomized (1:1) to receive either the maximum tolerated dose of tirzepatide (10 mg or 15 mg) or placebo once weekly for 72 weeks. In this trial, alopecia was reported in

Table I. Hair loss as an adverse drug reaction among GLP-1 analogues approved for the treatment of obesity [6,11,12]

| Active substance | Trade name | Frequency according to SmPC | SmPC version |
|---|---|---|---|
| Tirzepatide | Mounjaro | Common (≥1/100 to <1/10) | 23 Jan 2026 |
| Semaglutide | Wegovy | Common (≥1/100 to <1/10) | 17 Feb 2026 |
| Liraglutide | Saxenda | Not listed | 26 Jun 2025 |

7% of the treatment group compared to 1.4% in the placebo group [8].

Hair loss may result from indirect biochemical mechanisms, also observed with other GLP-1 analogues such as semaglutide and liraglutide [9,10]. Table I presents a comparison of the incidence of hair loss as an adverse drug reaction among GLP-1 analogues approved for the treatment of obesity.

Rapid weight loss can trigger physiological stress, which can lead to telogen effluvium. This effect is also well documented in patients undergoing bariatric surgery, in which a significant weight loss often leads to hair loss [13]. Tirzepatide, a potent appetite suppressant, can lead to reduced intake of essential nutrients, even when laboratory values remain within the normal range. Additionally, the early systemic symptoms (muscle pain, fatigue) may indicate transient systemic responses to the initiation of therapy. The absence of inflammation, normal laboratory results, and diffuse patterns of hair loss may suggest a diagnosis of telogen effluvium caused by metabolic stress. In most cases, the condition is reversible, as demonstrated by the cessation of excessive hair loss and regrowth within a few months after weight stabilization.

Interestingly, the opposite effect - hair regrowth associated with tirzepatide use - has also been reported in the literature. The first case described a 57-year-old man with androgenetic alopecia who experienced significant improvement in hair density after six months of tirzepatide monotherapy. His bloodwork before treatment revealed hemoglobin A1C of 5 (normal, <5.7), C-peptide 2.14 (normal, 0.8-1.8), fasting insulin 13.1 (normal, 5-12), and fasting glucose 99 (normal, 70-100), with an insulin resistance score of 3.2 (normal, <2), indicative of insulin resistance. The treatment was initiated due to this condition, accompanied by overweight (BMI 33.45 kg/m$^2$) and signs of acanthosis nigricans. The patient was not receiving any other anti-alopecia therapies. After 1 year of treatment, he lost approximately 13.6 kg, with continued hair regrowth. Simultaneously, metabolic parameters, including fasting insulin levels and the insulin resistance index, were normalized. The authors of the article suggest that, by minimizing insulin resistance, tirzepatide prevents the pathogenic follicle miniaturization responsible for alopecia [14]. In the second case, a man in his 40s presented with a 30-year history of recalcitrant folliculitis decalvans (FD). In May 2023, the patient initiated weekly subcutaneous tirzepatide for weight management, titrating from 2.5 mg to 12.5 mg. His FD was managed with clobetasol spray and crisaborole ointment every 5 to 7 days. Over the subsequent 9 months, he lost over 50 pounds. Concurrently, the patient reported significant, unexpected resolution of FD symptoms despite maintaining his original treatment regimen. Clinical examination revealed a marked reduction in erythema and fluctuance, alongside decreased pain and drainage. Notably, the patient also experienced substantial hair regrowth in previously affected areas. The authors of the article emphasize the potential anti-inflammatory and immunomodulatory properties of GLP-1 receptor agonists in the management of FD [15].

## Conclusion

This case indicates hair loss as an adverse reaction to tirzepatide therapy, although the mechanism is most likely indirectly related to rapid weight loss or metabolic changes. In clinical practice, it is advisable to monitor patients receiving incretin-based therapies for dermatological symptoms and to provide them with appropriate nutritional and psychological support.

Conflict of interest
None

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