

Abstract N°: 1800**Association between GLP-1 receptor agonists and scalp involvement: results from a multinational case-control study**

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Introduction

GLP-1 receptor agonists (GLP-1 RA) have revolutionized the management of type 2 diabetes (T2D) and obesity, and their worldwide use is growing exponentially. Several recent publications (FAERS analysis, TriNetX cohort study, case series) have reported an association between these treatments and the occurrence of alopecia, but without an appropriate control group, leaving unresolved the share attributable to telogen effluvium related to rapid weight loss versus a specific pharmacological effect. The objective of this study was to characterize scalp involvement with an appropriate control group and to determine whether these effects persist after stratification by weight loss.

Materials and Methods

A multinational cross-sectional study (France, United States, Brazil, Mexico) including 575 GLP-1 RA users and 1,329 controls (type 2 diabetes and/or obesity, BMI >30) with no exposure to GLP-1 RA, recruited from a representative sample in each country. Targeted assessment: unusual hair loss, loss of hair volume/density, dandruff and scalp erythema, nail fragility, dyschromia, changes in thickness, onycholysis and ridges/grooves. Weight loss was measured over a 3-month period, and a stratified analysis was performed to distinguish the drug effect from the weight loss effect.

Results

GLP-1 RA users (mean treatment duration 18.5 months; median 9 months) users reported weight loss over 3 months more frequently than controls (76.3% vs 47.3%; $p < 0.001$). Prevalences of hair and scalp involvement were significantly higher in the exposed group. Unusual hair loss was reported in 50.4% of cases versus 33.5% of controls (OR = 4.49 [3.62-5.56], $p < 0.001$), with new onset hair loss in 26.1% versus 11.6% (OR = 2.67 [2.03-3.50], $p < 0.001$). Loss of hair volume/density affected 42.4% of cases versus 19.3% of controls (OR = 3.23 [2.61-4.00], $p < 0.001$). Scalp erythema was also more frequent (OR = 3.05 [2.34-3.99], $p < 0.001$).

Conclusions

This multinational case-control study confirms, with enhanced statistical power and an appropriate control group,

the risk of alopecia associated with GLP-1 RA and demonstrates that it cannot be reduced to the effect of weight loss alone. The persistence of the signal after stratification supports a specific pharmacological mechanism. The underlying mechanisms are probably multiple and intertwined (telogen effluvium, nutritional deficiencies, hormonal fluctuations); the expression of GLP-1 receptors around hair follicles and the activation of the MAPK/ERK pathway represent a mechanistic avenue to be explored. Systematic dermatological screening including scalp examination should be integrated into the follow-up of patients treated with GLP-1 RA.

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