EDITORIAL

GLP-1 RECEPTOR AGONISTS FOR OBESITY: MIRACLE THERAPY OR EMERGING MISUSE?

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INTRODUCTION

Obesity is now recognized as one of the most pressing health problems of the 21st century. It contributes substantially to the rising burden of non-communicable diseases, including type 2 diabetes, cardiovascular disease, and several forms of cancer. Despite persistent public health campaigns promoting diet and exercise, long-term, population-level weight reduction has remained difficult to achieve.

In this setting, glucagon-like peptide-1 (GLP-1) receptor agonists—particularly Semaglutide and Liraglutide, have been welcomed as a major advance in the management of obesity. Initially developed for the treatment of type 2 diabetes, these agents have demonstrated impressive weight-reducing effects in clinical trials. [1]

However, the rapid growth in their use has also raised important concerns. Increasing demand, off-label prescribing, high costs in many settings, and uncertainty about long-term safety all prompt a critical question: are GLP-1 receptor agonists a genuine therapeutic breakthrough, or are we witnessing the early stages of misuse? This question becomes even more complex in low- and middle-income countries such as Pakistan, where patterns of access, affordability, and regulation differ substantially from those in high-income nations.

The Promise: A Shift in How We Treat Obesity

GLP-1 receptor agonists mimic the action of endogenous incretin hormones. They enhance glucose-dependent insulin secretion, slow gastric emptying, and promote a sense of fullness. In large clinical trials, these mechanisms have translated into meaningful weight reduction.

The STEP programme, for example, showed that once-weekly Semaglutide can produce an average loss of around 15% of initial body weight—results that were previously seen mainly after bariatric surgery. [2] Beyond weight loss, GLP-1 receptor agonists provide broader metabolic benefits, including improved glycaemic control, reduced cardiovascular risk, and possible renal protection. For individuals with obesity-related complications, these drugs are therefore much more than cosmetic interventions; they can be life-changing.

Another important effect of these therapies is conceptual. Their success supports the view of obesity as a chronic, relapsing disease with biological underpinnings, rather than a simple failure of willpower. This shift in perspective can reduce stigma and encourage a more compassionate and structured medical approach to treatment. In this sense, GLP-1 receptor agonists appear to represent a genuine “miracle” of modern pharmacology.

The Pakistani Context: Access, Affordability, and New Risks

Global discussions about GLP-1 receptor agonists often stress the high cost of branded products such as Ozempic. In Pakistan, the situation is more nuanced. Over recent years, the local pharmaceutical market has introduced less expensive synthetic and biosimilar GLP-1 formulations, which have widened access to these drugs.

At first sight, this seems like a highly positive development. More affordable products can help overcome one of the main barriers to evidence-based obesity and diabetes treatment. Yet this same expansion in access has created new challenges.

First, regulatory oversight of biosimilars and compounded preparations remains variable. Unlike originator products that undergo extensive Phase II and III trials, some locally manufactured or imported alternatives may lack robust long-term safety and efficacy data. Questions about bioequivalence, dose consistency, and the full spectrum of adverse effects remain only partially answered.

Second, lower cost has encouraged a rise in over-the-counter purchasing and self-medication. In many urban centres, GLP-1 injections are increasingly sought as a quick route to weight loss, often without appropriate

clinical assessment or follow-up. In a system where prescription regulations may not always be strictly enforced, this trend is worrying.

Third, the promotion of GLP-1 receptor agonists by private clinics and aesthetic or wellness practices has helped normalize their use for essentially cosmetic purposes. In the absence of clear national guidelines, prescribing habits can vary widely across practitioners, increasing the likelihood of irrational use.

Thus, while improved affordability has expanded one dimension of access, it has simultaneously exposed gaps in regulation, ethics, and clinical governance that demand urgent attention.

Key Concerns: Misuse, Overmedicalization, and Inequity

1. Off-Label and Cosmetic Use

One of the most visible trends globally—and now in Pakistan—is the use of GLP-1 receptor agonists by individuals who do not meet criteria for clinical obesity. Social media promotion, celebrity endorsements, and strong cultural pressures around body image have all contributed to driving demand. This pattern raises clear ethical concerns about prescribing for essentially cosmetic reasons and about the medicalization of normal variations in body weight and shape. [3]

2. Clinical Prioritization and Resource Use

Globally, there have been reports of supply shortages. In Pakistan, outright shortages might be less common, but misallocation of available stock is a concern. People with genuine metabolic needs may experience interrupted treatment, while others access these medications for marginal or non-medical reasons. Without clear prioritization policies, these situations can directly result in poorer outcomes for high-risk patients.

3. Cost and Hidden Inequalities

Even when lower-priced alternatives are available, they remain unaffordable for many households. For a significant portion of the population, regular GLP-1 therapy still represents a considerable financial burden.

At the same time, people who can afford even moderately priced preparations may use them for non-essential weight loss. This creates a subtle but important inequity, in which limited resources are disproportionately used by those with the least medical need. [4]

4. Safety, Quality, and Monitoring

The expanding market for biosimilars and compounded products naturally raises concerns around quality assurance. Without effective pharmacovigilance systems, adverse events may be under-recognized and under-reported. Known side effects—including gastrointestinal symptoms, pancreatitis, gallbladder disease, and possible longer-term risks—require careful monitoring over time. In a fragmented healthcare system, where patients may move between providers or obtain drugs from multiple pharmacies, such monitoring is difficult to sustain.

5. Reinforcing a “Quick Fix” Mentality

Perhaps the most far-reaching concern is cultural rather than purely clinical. GLP-1 receptor agonists are sometimes perceived as an easy alternative to sustained changes in diet and physical activity. [5] In a country already facing increasing sedentary lifestyles, aggressive marketing of energy-dense foods, and limited urban spaces for exercise, this perception risks weakening public health messages about prevention. If pharmacotherapy is seen as the main or only solution, long-term efforts to promote healthier environments and behaviours may lose momentum.

Balancing Innovation with Responsibility

The availability of more affordable GLP-1 therapies in Pakistan represents both a major opportunity and a complex challenge. To realize their benefits while limiting harm, a coordinated, multi-level response is required.

Key elements could include:

1. National prescribing guidelines that align with international standards but are adapted to local realities, including criteria for initiation, continuation, and discontinuation of therapy.

2. Stronger regulatory oversight of biosimilar and imported products, with clear requirements for demonstrating quality, safety, and comparability to reference drugs.

3. Public education campaigns that emphasize obesity as a chronic disease and clarify that medicines are intended to complement, not replace, lifestyle measures.

4. Training and support for healthcare professionals to encourage rational prescribing, appropriate patient selection, and regular follow-up.

5. Robust pharmacovigilance systems capable of capturing and analysing adverse events, including collaboration between regulators, professional bodies, and academic institutions.

Professional associations—particularly those representing endocrinologists, diabetologists, general practitioners, and providers of aesthetic medicine also play an important role. They can help define ethical boundaries for cosmetic use, promote evidence-based practice, and advocate for patients who depend on these medicines for their metabolic health.

CONCLUSION

GLP-1 receptor agonists have reshaped the therapeutic landscape of obesity, offering new hope to many patients who have struggled with conventional strategies. Their capacity to promote substantial weight loss and improve cardiometabolic outcomes makes them one of the most significant pharmacological developments of recent years.

In Pakistan, the emergence of cheaper synthetic and biosimilar formulations has added another dimension to this story. Wider access is undeniably valuable, yet it is accompanied by heightened risks of misuse, variable product quality, and uneven regulation.

The central challenge is not to portray GLP-1 receptor agonists as either miracle cures or dangerous missteps, but to acknowledge them as powerful tools that require careful stewardship. Thoughtful integration into clinical practice—guided by evidence, ethics, and strong regulatory frameworks—will determine whether these agents ultimately fulfil their promise or become another example of how rapid innovation can outpace responsible use.

REFERENCES

1. Wilding JPH, Batterham RL, Calanna S, et al. Once-weekly semaglutide in adults with overweight or obesity. N Engl J Med. 2021;384(11):989–1002.
2. Rubino D, Abrahamsson N, Davies M, et al. Effect of continued weekly semaglutide vs placebo on weight loss maintenance. JAMA. 2021;325(14):1414–1425.
3. Kushner RF, Kahan S. Introduction: the state of obesity in 2020. Med Clin North Am. 2020;104(1):1–9.
4. World Health Organization. Obesity and overweight. Geneva: WHO; 2023.
5. Nauck MA, Quast DR, Wefers J, et al. GLP-1 receptor agonists in the treatment of type 2 diabetes. Lancet Diabetes Endocrinol. 2021;9(10):673–684.

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