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Potential Risk of Acute Pancreatitis with GLP-1 Receptor Agonists

Hadir Aljohani, Maha Alghamdi, Nouf S. Al-Fadel, Fawaz. Al-Harbi1
1 Drug Safety and Risk Management department, Executive Directorate of Pharmacovigilance, Drug Sector, Saudi Food and Drug Authority, Riyadh, Saudi Arabia.

Introduction

The risk of acute pancreatitis has been reported with the use of all GLP-1 receptor agonists, raising important safety concerns.

Objective

Given the severity of this adverse event, this review aims to evaluate the necessity of implementing additional risk minimization measures (RMMs) specifically targeted at the risk of acute pancreatitis associated with these medications.

Methods

We conducted a systematic search across multiple databases, including PubMed, Embase, Google Scholar, and ClinicalTrials.gov, from inception to April for eligible English publications. Additionally, on March, 2025, we retrieved global cases from the World Health Organization (WHO) database (VigiBase) and the local adverse drug events database at the Saudi Food and Drug Authority (SFDA) regarding reported cases of GLP-1 receptor agonist-induced acute pancreatitis. Finally, we reviewed regulatory documents submitted to the SFDA, particularly the "Periodic Benefit Risk Evaluation Report".

Results

Our search identified two interventional studies, seven observational studies, and ten published case reports on the risk of acute pancreatitis linked to GLP-1 receptor agonists.

Six local cases were recorded: three with liraglutide, two with dulaglutide, and one with semaglutide. Only one case each of dulaglutide and liraglutide showed a possible relationship due to reasonable temporal associations; the others were unassessable due to insufficient data. In VigiBase, 8,889 cases were associated with GLP-1 receptor agonists, with 100 cases having a completeness score of ≥0.8 (including liraglutide, tirzepatide, and lixisenatide). Cases assessment are shown below (Figure 1)

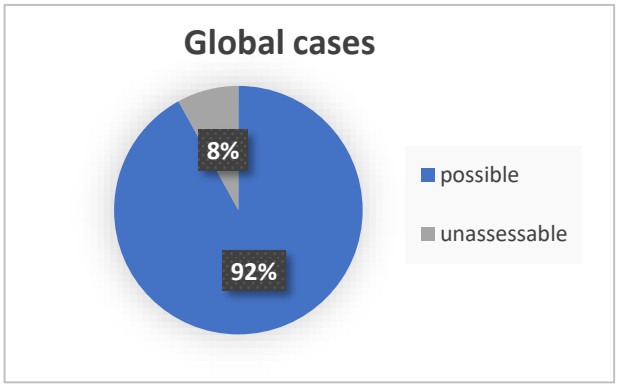

Figure 1:Results of the assessment of 100 cases.

Conclusions

Given the findings from our review, the SFDA recommended issuing a Direct Healthcare Professional Communication (DHPC) from marketing companies to inform healthcare providers about serious adverse events linked to GLP-1 receptor agonists, especially the risk of pancreatitis.