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THE EFFECTIVENESS AND SAFETY OF DASIGLUCAGON IN EMERGENCY MEDICINE

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Dear Editor,

dasiglucagon is a new form of glucagon analogue that has demonstrated potential in the treatment of insulin-induced hypoglycaemia, particularly in emergency scenarios involving individuals with type 1 diabetes mellitus (T1DM). If not properly addressed, severe hypoglycaemia is a serious and potentially life-threatening consequence of insulin therapy. Dasiglucagon overcomes certain drawbacks of traditional glucagon, such as its volatility in liquid state and the requirement for reconstitution prior to usage [1].

The American Diabetes Association (ADA) categorizes hypoglycaemia into three tiers, with severe hypoglycaemia necessitating prompt medical care [2]. Despite its success, traditional glucagon treatment faces limitations due to its chemical instability and the intricate delivery procedure. Dasiglucagon, which received approval from the USFDA in 2021, provides a stable and readily available option that can be administered rapidly, guaranteeing prompt therapy [3, 4].

A systematic review and statistical analysis of five randomized controlled studies, published until May 2023, assessed the effectiveness and safety of dasiglucagon in treating insulin-induced hypoglycaemia in individuals with type 1 diabetes mellitus. The main metric of interest was the duration of recovery, which was defined as the time required to increase plasma glucose levels to at least 20 mg/dL. It was found that dasiglucagon significantly shortened the time needed to recover compared to both the placebo (mean difference [MD]: –24.73 minutes) and oral glucose (MD: –15.00 minutes). Nevertheless, there was no statistically significant distinction between dasiglucagon and conventional glucagon (mean difference: –0.76 minutes) [5].

The investigation also evaluated the number of patients who experienced recovery at 10, 20, and 30 minutes after the intervention. At the 10-minute mark, dasiglucagon demonstrated a greater rate of recovery compared to placebo (odds ratio [OR]: 33.20) and oral glucose, but the difference was not statistically significant when compared to conventional glucagon (OR: 1.76). According to a study, dasiglucagon showed more effectiveness than placebo at both 20 and 30 minutes. However, there was no notable difference in efficacy compared to glucagon [6].

The safety research indicated that dasiglucagon was linked to a greater occurrence of treatment-emergent

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adverse events (TEAEs) such as nausea, vomiting, and headache in comparison to both placebo and oral glucose. Nevertheless, there was no notable disparity in the occurrence of treatment-emergent adverse events (TEAEs) between dasiglucagon and conventional glucagon. The research did not show any correlation between the occurrence of treatment-emergent adverse events (TEAEs) and the dosage administered [6].

A phase 3 trial demonstrated the efficacy and safety of a single subcutaneous dosage of 0.6 mg dasiglucagon in the treatment of severe hypoglycaemia in patients with type 1 diabetes mellitus (T1DM). The trial determined that dasiglucagon exhibited superior efficacy compared to both placebo and oral glucose, inducing prompt and enduring elevations in blood glucose levels. Nevertheless, its effectiveness was similar to that of traditional glucagon, with no notable disparities in safety profiles [6].

A separate study investigating the clinical effectiveness and safety of dasiglucagon in treating severe hypoglycaemia in patients with type 1 diabetes mellitus confirmed these results, emphasizing its fast-acting nature in increasing blood glucose levels and its positive safety record, which is similar to that of natural glucagon [7].

The main benefit of Dasiglucagon is its inherent stability in liquid form, which avoids the requirement for reconstitution prior to administration. This readily available formulation greatly decreases the time required for preparation and administration, which is vital in emergencies. The user's text states that the ease of use of a certain product or system has a positive impact on adherence to treatment procedures and outcomes for patients [4].

Dasiglucagon is a notable breakthrough in the treatment of insulin-induced hypoglycaemia in patients with type 1 diabetes mellitus (T1DM) [8]. Empirical research and comprehensive analysis validate its effectiveness and safety, establishing it as a potential treatment option for severe hypoglycaemia. Additional active-controlled noninferiority trials are necessary to definitively show the superiority of dasiglucagon over traditional glucagon. However, present findings indicate that dasiglucagon can be a dependable emergency treatment for diabetic patients [6, 9].

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Conflict of interest

The authors declare no conflict of interest.

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