

Successful desensitisation with Aspart-Degludec (Ryzodeg™) in a patient anaphylactic to insulin: a case report

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Objective:

To describe a case of insulin desensitisation with Aspart-Degludec (Ryzodeg™) in a patient who developed pruritic wheals to glargine (Optisulin™) and anaphylaxis to detemir (Levemir™).

Clinical features:

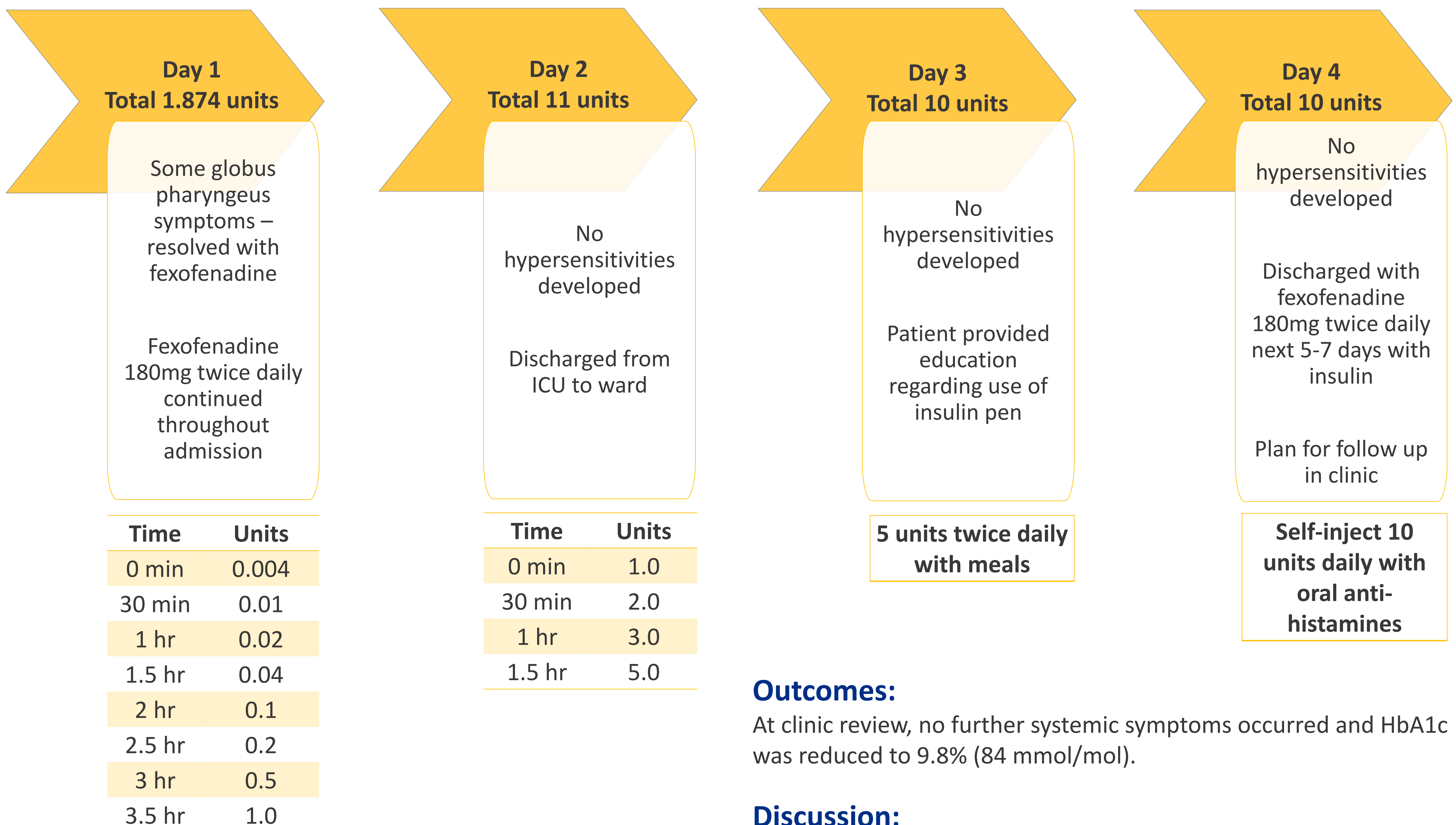
A 51-year-old female with poorly controlled type-2 diabetes mellitus (T2DM) and severe insulin allergy was electively admitted to the intensive care unit (ICU) for insulin desensitisation in 2021.

History of presenting complaint:

- Injection-site reactions to Optisulin™ and anaphylaxis to Levemir™ in 2018, thus managed on oral hypoglycaemics only
- HbA1c increased from 10% (86mmol/mol) to 11.5% (102mmol/mol)
- After discussion, patient was for insulin desensitisation in ICU

Patient progress:

Figure 1: Flow chart of patient's progress and desensitisation protocol



Past medical history:

- Ischaemic heart disease (IHD)
- T2DM – on oral hypoglycaemics (OHG) – Empagliflozin 25mg daily, gliclazide modified release 120mg daily, metformin modified release 2g daily

Literature review:

- Successful cases describe the use of human insulin and certain analogues, although the evidence for the latter is scarce¹
- Patients may have ongoing mild hypersensitivity and reoccurrence of severe allergy; particularly when therapy is interrupted²

Pharmacist interventions:

- ICU pharmacist reviewed literature for insulin, dosing regimens and safety parameters
- Ryzodeg™ selected for desensitisation
- Protocol communicated to pharmacy aseptic units to prepare incremental doses of Ryzodeg™

Outcomes:

At clinic review, no further systemic symptoms occurred and HbA1c was reduced to 9.8% (84 mmol/mol).

Discussion:

Insulin desensitisation is an effective option for patients with mild or severe allergy. Risks of missed doses was explained to patient such as temporary loss of tolerance, recurrence of anaphylaxis and potential need for repeat desensitisation.

This study describes successful incremental desensitisation with Ryzodeg™, which could prove as safe and effective.



References:

1. Wu P, Ji C, Wang M, Zou S, Ge W. Desensitization of allergy to human insulin and its analogs by administering insulin aspart and insulin glargine. *Annales d'Endocrinologie* [Internet]. 2013 Feb 1 [cited 2023 Sep 27];74(1):56–8. Available from:
2. Jacquier J, Chik CL, Senior PA. A practical, clinical approach to the assessment and management of suspected insulin allergy. *Diabetic Medicine* [Internet]. 2013 Aug 1 [cited 2023 Sep 27];30(8):977–85.