SUPPLEMENTARY TEXT 14

DESENSITIZATION IN INSULIN HYPERSENSITIVITY

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Insulin is a peptide hormone produced by beta cells of the pancreatic islets. It is also a key component in the management of diabetes mellitus. Currently, the most widely used insulin types are human insulin (NPH, regular insulin) and insulin analogues (ie, Aspart, Lispro, Detemir, Glargine).

Allergy to insulin has been reported, although the frequency has significantly decreased with the introduction of insulin analogues (1). To diagnose insulin allergy, one must both confirm allergy to insulin and exclude allergy to additives in the formulation (ie, protamine or cresol) (2). Due to the possibility of cross-reactivity, It is important to know if patients are allergic to one or several kinds of insulins, in order to find out if there is an alternative treatment.

Immediate systemic reactions to insulin that persist despite changing the insulin preparation may need desensitization for further administration. Multiple protocols for insulin desensitization have been described in the literature, most commonly using small, increasing doses of SC insulin (3-6) or continuous subcutaneous insulin infusion (7-9), and less commonly, IV insulin (10) with successful outcomes. There has been described a great variability in the starting dose (1,000,000-fold to 1000-fold diluted from 100 IU/mL), as well as in the schedule of dose increase, from 10-fold to 2-fold, every 15 to 30 minutes to reach the target dose (11). These protocols also included pretreatment regimens adding antihistamines and corticosteroids. We should remember that during the procedure it is essential to control blood glucose levels on a regular interval and coordination with the endocrinology department is recommended. Additional protocols have reported successful insulin desensitization in patients with diabetic ketoacidosis (12-13).

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