

Multiple allergies to human insulin in the treatment of type 2 Diabetes

E. Matthews, A. Sharma, S. Farooque, D. Gable

Department of Metabolic Medicine, Imperial College Healthcare NHS Trust, St Marys Hospital, Paddington, London W2 1NY



INTRODUCTION

- Once T2DM has been present for many years lifestyle measures and oral agents will require the addition of insulin therapy.
- Insulin can be difficult to use appropriately and patients can feel that they do not tolerate the insulin therapy .
- However, absolute contraindications to insulin secondary to true allergy is rare and the patients difficult to manage

CASE HISTORY

- 52 year old female with a long history of T2DM leading to the development of retinopathy and Neuropathy.
- Developed widespread erythematous rash, local hyperpigmentation and swelling at the injection sites of her Humulin I, with similar symptoms occurring to with a number of other insulin
- All insulin medications were stopped and she was left only on metformin, saxagliptin and dapagliflozin

TREATMENT

- Once tolerance to Hypurin Bovine Lente had been established through intradermal testing, she was started on a regimen of this insulin; HbA1c reduced from 121mmol/mol to 73mmol/mol over the course of five months
- Hypurin Bovine Lente will not be available in the UK for much longer, meaning alternative treatments need to be explored
- The patient has been referred for consideration of bariatric surgery

INITIAL INVESTIGATIONS

- The patient was referred to a specialist is drug allergy
- Specific IgE to insulin was raised (3.39 kUA/L)
- Intradermal testing to IgE was positive for all insulins tested except Hypurin Bovine Lente
- Hypurin Bovine Lente is the only insulin not to contain the excipient metacresol
- It has not yet been possible to test the patient's sensitivity to pure metacresol
- Interestingly, there was no intradermal sensitivity to other, non-insulin medications that contain metacresol

DISCUSSION POINTS

- Insulin allergy is rare but there are a number of reported cases
- Generally, allergies were to bovine insulins and therefore there has been a decreased in incidence since the advent of human insulins
- There is no obviously superior management option, and a patient-specific approach is needed
- Successful management in literature ranges from specific immunotherapy, to desensitisation regimes and continuous subcutaneous insulin
- Hopefully, in this case, bariatric surgery will obviate the need for insulin

References:

1. Heinzerling et al. *Insulin allergy: clinical manifestations and management strategies*. Allergy. 2008 Feb; 63(2): 148-55
2. Bzowycykj et al. *Hypersensitivity reactions to human insulin analogs in insulin-naïve patients: a systematic review*. Therapeutic advances in endocrinology and metabolism. 2018 Feb; 9(2): 53-65
3. Chettiar et al. *Pseudo 'insulin allergy'*. International journal of diabetes in developing countries. 2008 Oct-Dec; 28(4): 132-133