

Insulin Degludec, an alternative to Insulin U500, in severe insulin resistance due to antibodies

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Case report

We report 56 year old Asian male,diabetes from age 26. He had a strong family history of diabetes (both parents and brother).

Given Mixtard Insulin in addition to OHAs after his myocardial infarction in 2011.. His weight was 62 kg. Insulin doses were uptitrated and preparations were changed to maintain the HbA1c around 8-9%. Insulin U100 treatments comprised: Novomix 30, Glargine/Novorapid, Humalog Mix 50 and also a combination of Detemir/Humalog Mix 50.

In 2011, the U100 insulin requirement increased to 3.8 U/KG (300 units a day). His insulin antibodies were positive at 27 (0-5 mg/L).He was changed to Insulin U500 to reduce the injection volume and improve absorption. After initial good response dose were titrated to 35/20/30 units per day (insulin 425 units/day).

In 2013, he was changed to Insulin Degludec U200 at total 62 Units once a day, with improvement in glycaemic control HbA1c reduced to 9%.from 11% His insulin antibody levels normalised to 3.2(0-5) mg/Land his weight remained stable. The reduction in cost was insulin Degludec £120/month vs U500 insulin £200/month

Conclusions

Insulin Degludec is new long acting insulin analogue with a distinct pharmacokinetic and pharmacodynamic profile. It has proved to be less immunogenic and associated with resolution of insulin resistance. Also significant reduction in dose, volume and frequency of injection, with overall improvement in glycaemic control and reduced drug cost

Our case report suggests that insulin Degludec U100/200 could be considered in severe insulin resistance.