

## Adverse Effects of Insulin Detemir

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### Summary

Diabetes is a metabolic disease with high prevalence worldwide.

Insulin detemir is a long acting human analogue insuline, that allows insulin detemir to reversibly bind to albumin, prolonging its action. It presents low risk of nocturnal hypoglycaemia.

We report cases of three patients affected by type 1 diabetes, who developed ecchymosis at injection site after administration of insulin detemir.

We cannot exclude that mannitol, an excipient present in insulin detemir, causes ecchimosys.

**Keywords:** Diabetes; Detemir; adverse drug reaction.

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### Introduction

Diabetes is a metabolic disease with high prevalence worldwide, so in the management of this condition exogenous insulin is used.

Insulin detemir is a long acting human analogue insuline (1), acylated with a 14-carbon fatty acid, that allows insulin detemir to reversibly bind to albumin, prolonging its action. Detemir presents low risk of nocturnal hypoglycaemia(2).

Generally, insulin analogs are well tolerated by individuals.

Allergy to insulin has become rare with human recombinant insulin or its analogs, with an estimated incidence of 1%.

### **Case Report**

We report cases of three patients affected by type 1 diabetes, who developed ecchymosis at injection site after administration of insulin detemir.

The first case regards a 20 years old female, who developed subcutaneous, small ecchymosis 3 days after administration of insulin detemir at the daily dose of 24 U.I.. She was undergoing therapy with insulin Aspart at the daily dose of 15 U.I. The patient stopped treatment and the ecchymosis disappeared. Patient had used insulin glargine in the past.

The second case regards a 13 years old male, who developed subcutaneous, small ecchymosis 2 days after administration of insulin detemir at the daily dose of 20 U.I. He was undergoing therapy with regular human insulin at the daily dose of 22 U.I.

The case was resolved positively by a suspension of the above therapy. Patient used insulin glargine in the past.

The third case regards a 20 years old male who developed subcutaneous, small ecchymosis 7 days after administration of insulin detemir. The patient didn't stop therapy, so ecchymosis persisted for a period and disappeared two months after starting therapy.

All cases were not considered serious and were resolved positively. All of them had no history of any allergy and were expert in administration of insulin.

A causality assessment of the adverse event revealed a probable association of ecchymosis with insulin detemir, as after application of Naranjo Method (score=4)(3).

### **Conclusion**

After observation of described reactions, we did not perform skin tests and we exclude allergy, but we cannot exclude that mannitol, an excipient present in insulin detemir, had caused ecchymosis described. In international literature, is reported a single case of subcutaneous, non pruriginous, slightly painful nodule, in a 31 years old man, that disappeared in 48 hours after suspension of Detemir (4). Generally, reactions at injection site after administration of drugs are considered expected and not serious.

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