

The highest (3600 IU) reported overdose of insulin glargine ever and management

Sir,

Insulin glargine (LANTUS® SOLOSTAR®; Sanofi Aventis, Deutschland) – relatively a new medication in the treatment of diabetes mellitus – is a long-acting insulin for meeting the basal insulin requirement with an ongoing effect up to 24 h.^[1,2] In literature, there are small number of cases regarding with overdose use of insulin glargine. One of these cases with regard to insulin glargine overdose was by Lu and Inboriboon, who had reported a case of suicide attempt with 2700 units of insulin glargine resulting 96 h of hypoglycemia.^[3] Herein, we report another case of insulin glargine overdose resulting 120 h of hypoglycemia in a diabetic patient who had attempted suicide with 3600 units of insulin glargine. To our knowledge, this is the highest reported insulin glargine dose ever.

In this present case, a 45-year-old-male patient with type-2 diabetes mellitus and major depression was admitted to emergency department with the loss of consciousness after self-administered 3600 units of insulin glargine. Patient's laboratory

findings on admission were as follows: Blood glucose level - 20 mg/dl, potassium - 2,8 mmol/L, serum level of sulfonylurea - 0,0 mg/ μ L, C-peptide - 0.0956 (0.51–2.7 ng/mL normally), and serum insulin value - 216 mU/L (2.6–25 normally). Patient treated with continuous intravenous dextrose infusion and 1 mg of glucagon hydrochloride. On follow-up, the patient needed 120 h of intravenous glucose infusion for the recurrent hypoglycemic episodes. At the end of the 5th day, no hypoglycemia attack was observed. The patient discharged without any permanent complications on the 6th day of hospitalization. Then, he referred to a psychiatry clinic. Hypoglycemia is the most frequent side effect of insulin glargine. The timing of hypoglycemia and its duration differs according to the insulin formulations. Insulin glargine is known to have no peak effect. The plasma concentration versus time profile of insulin glargine is relatively more stable with no peak in 24 h compared to conventional human insulin.^[4,5] This allows once-daily administration as basal therapy. However, overdose use of insulin glargine may rarely present with prolonged hypoglycemia attacks.^[3]

As a result, we aimed to emphasize in this letter that emergency and intensive care physicians should be aware of overdose use of insulin glargine present with prolonged hypoglycemia attacks. In these cases, intensive care physicians should immediately initiate continuous dextrose infusions, and the patients should be monitored closely with frequent blood glucose samples to prevent the risk of prolonged hypoglycemia episodes.

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Conflicts of interest

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**Fatih Karatas, Suleyman Sahin,
H. Gulsah Karatas¹, Pinar B. Karsli¹,
Cengizhan Emre², Fatih Kivrakoglu³**

Department of Medical Oncology,
Diskapi Yildirim Beyazit Training and Research Hospital,
¹Department of Physical Treatment and Rehabilitation,
Diskapi Yildirim Beyazit Training and Research Hospital,
²Department of Anesthesiology and Toxicology,
Yenimahalle State Hospital,
³Department of Internal Medicine and Medical Oncology,
Diskapi Yildirim Beyazit Training and Research Hospital,
Ankara, Turkey

Correspondence:

Dr. Fatih Karatas,
Department of Medical Oncology,
Diskapi Yildirim Beyazit Training and Research Hospital, Ankara, Turkey.
E-mail: m_f_karatas@hotmail.com

References

- Owens DR, Griffiths S. Insulin glargine (Lantus). *Int J Clin Pract* 2002;56:460-6.
- Reinhart L, Panning CA. Insulin glargine: A new long-acting insulin product. *Am J Health Syst Pharm* 2002;59:643-9.
- Lu M, Inboriboon PC. Lantus insulin overdose: A case report. *J Emerg Med* 2011;41:374-7.
- Dunn CJ, Plosker GL, Keating GM, McKeage K, Scott LJ. Insulin glargine: An updated review of its use in the management of diabetes mellitus. *Drugs* 2003;63:1743-78.
- Chan WB, Ngai WW, Tong PC. Treatment satisfaction with insulin glargine in insulin-naive type 2 diabetes patients – A Hong Kong based registry. *J Diabetes Mellitus* 2014;4:232-41.

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