Case Report

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A Case Report on Suicidal Liraglutide Overdose in a Non Diabetic Female Presented with Hypoglycemia

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Abstract

Background: A 27 years old non diabetic woman with suicidal liraglutide overdose presented in emergency with nausea, vomiting and burning pain abdomen. *Case Presentation*: We reported her blood glucose of 54 mg/dl in emergency, have given her 25% dextrose intravenous bolus and started her on 10% dextrose intravenous infusion, with other supportive medications. Her symptoms improved with intravenous glucose infusion and blood glucose level maintained normal in next 24 hours. Her liver function test and serum amylase remained within normal range. *Conclusion*: In our case one episode of hypoglycaemia was reported in emergency (blood glucose 54mg/dl and drowsiness), though hypoglycaemia was never reported in any previous case report of liraglutide overdose. So, hypoglycaemia, though rare, can still be a possible complication of liraglutide overdose.

Keywords: Liraglutide; Hypoglycaemia.

Introduction

Liraglutide is a once-daily glucagon-like peptide 1 (GLP-1) receptor agonist [1], approved for use as a treatment of type 2 diabetesby the European Medicines Agency (EMA) on July 3, 2009, and by the U.S. Food and Drug Administration (FDA) on January 25, 2010 [2]. Like other drugs of the same class, liraglutide stimulates insulin secretion in a glucose-dependent fashion, i.e. by mimicking the effects of native GLP-1, it enhances the glucose-dependent secretion of insulin from beta cells of pancreatic islets, suppresses elevated glucagon secretion, and slows down gastric emptying and increases satiety has the potential of preventing α-cell mass decline, and inhibits food intake. In addition, experimental studies suggest that the GLP-1 receptor agonists could protect myocardium from ischemic injury, enhancing cardiac function [3].

Fig. 1:

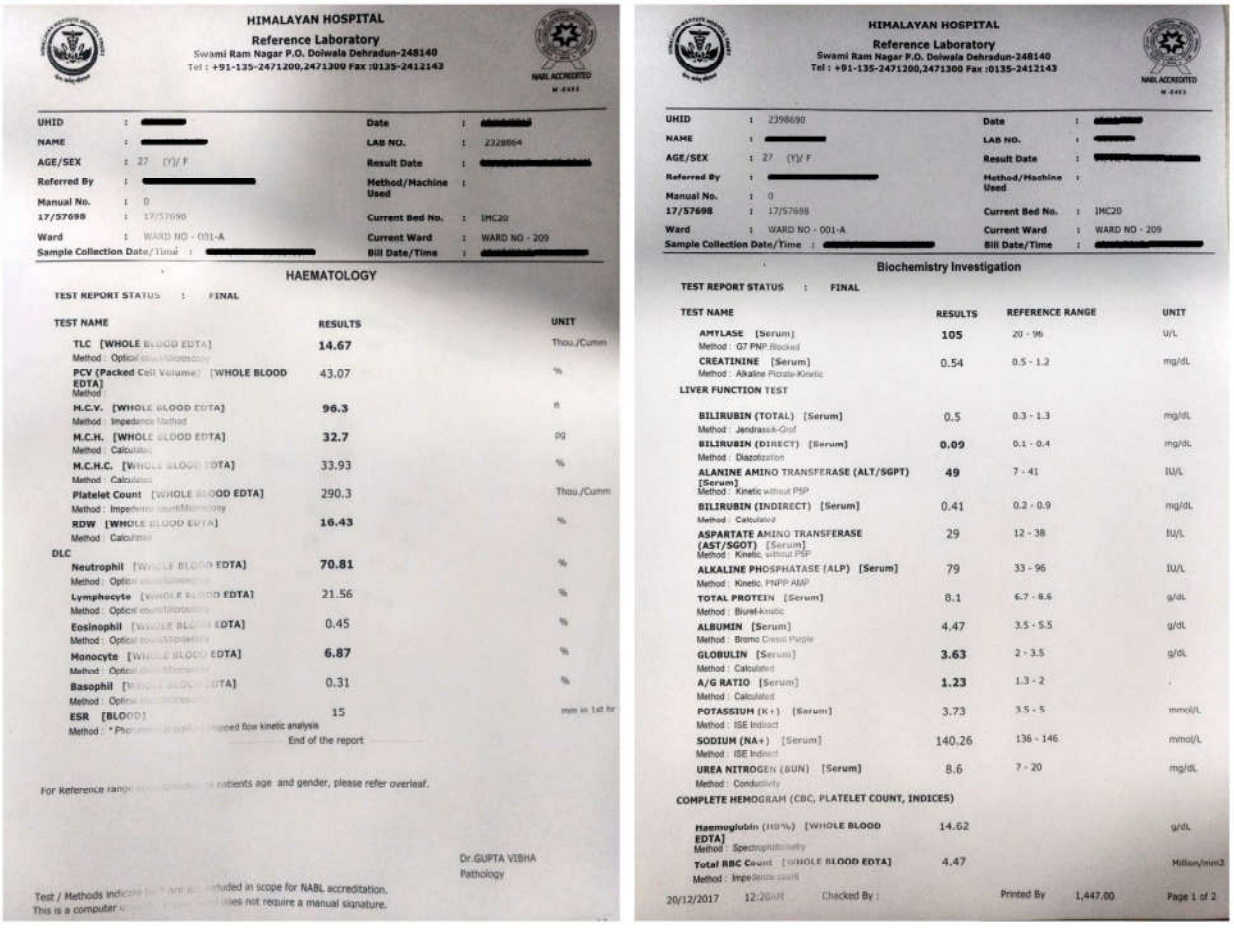
Case History

We report a case of a 27 year old non diabetic married woman, presented in our emergency department after 6 hours of suicidal administration of InjVictoza (Liraglutide) which was used by patient's father, approximately 54 mg (9ml, each ml containing 6mg) subcutaneously on her left deltoid, with 8 episodes of vomiting, severe nausea, epigastric burning pain sensation and drowsiness. She was taken to another hospital within one hour of self-administration of Liraglutide, where her blood glucose was found 61mg/dl. She was treated there with intravenous 10% dextrose solution (500ml) after which her blood sugar was found 215mg/dl. On presentation in our emergency, she was drowsy but following all commands and answering to questions properly. Her heart rate was 110 bpm, blood pressure 110/70mmhg, blood glucose 97mg/dl. She was started on symptomatic management with intravenous pantoprazole and ondansetron and DNS infusion drip. After half an hour of her blood glucose was rechecked and found to be 54mg/dl, so she was transfused with 25% dextrose intravenous bolus and changed to 10% dextrose intravenous infusion. Her liver function test and serum amylase remained within normal range. No further vomiting in next 24 hours of hospitalisation but remained nauseous. She became fully conscious, alert and oriented and maintained her blood glucose after stopping intravenous glucose drip and resuming her on oral diet. She was discharged on request after 24 hours of observation and psychiatric counselling.

Discussion and Conclusion

In our case report, the patient has tendency of hypoglycaemia (<55mg/dl) [4] and required intravenous glucose infusion, though while reviewing the literature, we did not found any reported hypoglycaemia in all previous case reports.

Only few cases [4,5,6,7,8,9,10] of liraglutide overdose or poisoning were reported in literature. Nausea, vomiting and burning pain abdomen are the most common presenting symptoms. None of the cases



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UHID : [redacted] Date : [redacted]
NAME : [redacted] LAB NO. : 2328864
AGE/SEX : 27 (Y)/ F Result Date : [redacted]
Referred By : [redacted] Method/Machine Used :
Manual No. : 0
17/57698 : 17/57698 Current Bed No. : IMC20
Ward : WARD NO - 001-A Current Ward : WARD NO - 209
Sample Collection Date/Time : [redacted] Bill Date/Time : [redacted]

HAEMATOLOGY

TEST REPORT STATUS : FINAL

TEST NAME	RESULTS	UNIT
TLC [WHOLE BLOOD EDTA] Method : Optical	14.67	Thou./Cumm
PCV (Packed Cell Volume) [WHOLE BLOOD EDTA] Method :	43.07	%
M.C.V. [WHOLE BLOOD EDTA] Method : Impedance Method	96.3	fl
M.C.H. [WHOLE BLOOD EDTA] Method : Calculated	32.7	pg
M.C.H.C. [WHOLE BLOOD EDTA] Method : Calculated	33.93	%
Platelet Count [WHOLE BLOOD EDTA] Method : Impedance	290.3	Thou./Cumm
RDW [WHOLE BLOOD EDTA] Method : Calculated	16.43	%
DLC		
Neutrophil [WHOLE BLOOD EDTA] Method : Optical	70.81	%
Lymphocyte [WHOLE BLOOD EDTA] Method : Optical	21.56	%
Eosinophil [WHOLE BLOOD EDTA] Method : Optical	0.45	%
Monocyte [WHOLE BLOOD EDTA] Method : Optical	6.87	%
Basophil [WHOLE BLOOD EDTA] Method : Optical	0.31	%
ESR [BLOOD] Method : * Photometric capped flow kinetic analysis	15	mm in 1st hr

End of the report

For Reference range ... patients age and gender, please refer overleaf.

Dr.GUPTA VIBHA
Pathology

Test / Methods indicated ... included in scope for NABL accreditation.
This is a computer ... does not require a manual signature.

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UHID : 2398690 Date : [redacted]
NAME : [redacted] LAB NO. : [redacted]
AGE/SEX : 27 (Y)/ F Result Date : [redacted]
Referred By : [redacted] Method/Machine Used :
Manual No. : 0
17/57698 : 17/57698 Current Bed No. : IMC20
Ward : WARD NO - 001-A Current Ward : WARD NO - 209
Sample Collection Date/Time : [redacted] Bill Date/Time : [redacted]

Biochemistry Investigation

TEST REPORT STATUS : FINAL

TEST NAME	RESULTS	REFERENCE RANGE	UNIT
AMYLASE [Serum] Method : G7 PNP Blocked	105	20 - 96	U/L
CREATININE [Serum] Method : Alkaline Picrate-Kinetic	0.54	0.5 - 1.2	mg/dL
LIVER FUNCTION TEST			
BILIRUBIN (TOTAL) [Serum] Method : Jendrassik-Grof	0.5	0.3 - 1.3	mg/dL
BILIRUBIN (DIRECT) [Serum] Method : Diazotization	0.09	0.1 - 0.4	mg/dL
ALANINE AMINO TRANSFERASE (ALT/SGPT) [Serum] Method : Kinetic without P5P	49	7 - 41	IU/L
BILIRUBIN (INDIRECT) [Serum] Method : Calculated	0.41	0.2 - 0.9	mg/dL
ASPARTATE AMINO TRANSFERASE (AST/SGOT) [Serum] Method : Kinetic without P5P	29	12 - 38	IU/L
ALKALINE PHOSPHATASE (ALP) [Serum] Method : Kinetic PNPP AMP	79	33 - 96	IU/L
TOTAL PROTEIN [Serum] Method : Biuret-kinetic	8.1	6.7 - 8.6	g/dL
ALBUMIN [Serum] Method : Bromo Cresol Purple	4.47	3.5 - 5.5	g/dL
GLOBULIN [Serum] Method : Calculated	3.63	2 - 3.5	g/dL
A/G RATIO [Serum] Method : Calculated	1.23	1.3 - 2	
POTASSIUM (K+) [Serum] Method : ISE Indirect	3.73	3.5 - 5	mmol/L
SODIUM (NA+) [Serum] Method : ISE Indirect	140.26	136 - 146	mmol/L
UREA NITROGEN (BUN) [Serum] Method : Conductivity	8.6	7 - 20	mg/dL
COMPLETE HEMOGRAM (CBC, PLATELET COUNT, INDICES)			
Haemoglobin (Hb%) [WHOLE BLOOD EDTA] Method : Spectrophotometry	14.62		g/dL
Total RBC Count [WHOLE BLOOD EDTA] Method : Impedance count	4.47		Million/mm3

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Fig. 2:

reported with pancreatitis or hypoglycaemia. But with our reported case we found that hypoglycaemia, though rare, can still be a possible complication of liraglutide overdose. Treatment is mainly supportive.

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