



“BENEATH THE SUGAR CRASH”

BY:- DR. PRATIK KANANI (JR3)

GUIDED BY:- DR. VARSHA SHINDE (PROF.)

DEPARTMENT OF EMERGENCY MEDICINE

DYPMCH

Patient's profile

- ❑ Age: 26 years old, female
- ❑ Past Medical History: Anxiety disorder.
- ❑ Current Medications: Beta-blocker, antipsychotic.
- ❑ Presentation: Unresponsive state, unknown duration

Initial Assessment & Vital Signs

- ❑ Primary Survey (GCS: E1V1M1)
- ❑ Pupils: Bilateral reactive to light.
- ❑ large bore IV cannulas secured.
- ❑ Circulation: Central and peripheral pulses palpable.
- ❑ Critical Finding:
 - Blood sugar level:- 30 mg/dL.
- ❑ Initial Vital Signs:
 1. Heart Rate: 54/min
 2. Blood Pressure: 110/60 mmHg
 3. Saturation: 99% on RA
 4. ECG: Sinus bradycardia

Immediate Management

❑ Emergency Intervention

1. Hypoglycemia Correction:

- D-25 (100ml) IV bolus given immediately Result
- Patient regained consciousness immediately after dextrose

2. Continued Monitoring:

- BSL at 45 minutes: 60 mg/dL (recurrent hypoglycemia)
- Second D-25 (100ml) IV bolus
- 5% Dextrose infusion started at 80ml/h

Key Discovery & Advanced Treatment

▶ History:

Self-administered ~3 vials insulin SC

▶ Specialized Treatment:

Octreotide: 50 mcg SC (stat) → 50 mcg/6 hr

Rationale: Prevent dextrose-induced insulin release.

IV Support: D10 @ 50 ml/hr

▶ Monitoring:

BSL every 15-30 minutes initially f/b hourly.



Cardiovascular Complications

▶ 3 hrs Post-Admission:

HR <40 bpm

BP: 80/60 mmHg

▶ Interventions:

Atropine 1 mg IV stat

Glucagon 1mg IM given f/b repeated dose every 30 mins to maintain desired blood sugar levels.

▶ Response:

HR: 90/min

BP: 106/70 mmHg

SpO₂: 99% RA

BETA-BLOCKER TOXICITY **CONSIDERATIONS**

- ▶ Given the patient's history of beta-blocker use and complications with bradycardia and hypotension, beta-blocker toxicity must be considered.

Cardiac Assessment

► Cardiology + 2D Echo:

LVEF: 60%

Diastolic function: Normal

No clots/vegetation/effusion

IVC: 14mm, >50% collapsible

Overall: No significant cardiac pathology

Clinical Outcome

► Recovery Timeline:

12 hours: Stable vitals, BSL 167 mg/dL

24 hours: BSL >100 mg/dL maintained

► Other Care:

Psychiatric evaluation completed

Discharge: Day 3 post-admission

Pathophysiology

► Insulin Overdose:-

1. Severe hypoglycemia.
2. Prolonged depot action.

► Beta-Blocker Toxicity:-

1. Beta-1 blockade: Decreased HR/contractility.
2. Beta-2 blockade: Impaired glycogenolysis & hypoglycemia.
3. Membrane stabilization: QRS widening and arrhythmias.
4. CNS effects: Direct toxicity from lipophilic agents

► Hemodynamic instability from neuroglycopenia + adrenergic surge

Risk persists beyond normal insulin kinetics.

Clinical Pearls

- ▶ Suspect insulin overdose in unexplained, prolonged hypoglycemia.
- ▶ Suspect beta-blocker toxicity when bradycardia disproportionate to hypoglycemia.
- ▶ Early octreotide in non-diabetics.
- ▶ Glucagon for both insulin overdose and beta-blocker toxicity.
- ▶ Monitor BSL, cardiac rhythm, observe 24–48 hrs with prolonged-release beta-blockers

DISCUSSION

- ▶ **Synergistic Toxicity:** Insulin overdose with Beta-Blocker use.
- ▶ **Healthcare Worker Suicide Risk:** Physicians have elevated suicide rates due to perfectionism, chronic stress, access to lethal medications, stigma about seeking help, and exposure to patient suffering.
- ▶ **Psychiatric Assessment:** Evaluate suicidal intent, plan, access to means, and protective factors, because psychiatric patients have less life expectancy as compared to their peer.
- ▶ **Prevention & Follow-Up:** Structured discharge plan with psychiatric follow-up and workplace accommodations.

Take Home Message

- ▶ Rapid recognition and multi-drug effects.
- ▶ Multimodal therapy: Dextrose, octreotide, glucagon, atropine.
- ▶ Multidisciplinary care and discharge planning.
- ▶ Suicide prevention: Risk assessment and safety plan.
- ▶ Extended monitoring for both medical and psychiatric stability



THANK YOU.....