03/25/21 Morning Report with @CPSolvers

***Case Presenter**: Simone Vais (@SimoneVais) **Case Discussants**: Kirtan Patolia (@KirtanPatolia) and Mathieu Brunet*

CC: weakness and volume overload

HPI: 42 year old M w/ESRD on HD, opioid use disorder on methadone, presents with weakness and volume overload. Glucose 39 Difficulty getting out of bed, legs buckle, feeling weak. Last meal AM. Eating less due to fear of gaining weight. No tremors, fever, chills sweats, confusion, or weight change over past 6 months.
-3 months ago - hospitalized for bacteremia, multi joint osteomyelitis (6 weeks vanc). Methadone was uptitrated. Later in hospitalization, developed persistent asymptomatic hypoglycemia to 40's (normal insulin, elevated C-peptide)

PMH:
Opioid use disorder
ESRD-amyloidosis
HD for 4 months
HCV - viral load 0
Left shoulder washout for osteo, septic arthritis

Meds:
Methadone 130 mg
Sevelamer
Lasix
Levothyroxine

Fam Hx:
N/A

Soc Hx: Unhoused, living at Respite

Health-Related Behaviors:
opioid use (IV before), subQ and intranasally - not used since in Respite

Allergies: NKDA

Vitals: **T**: 36.3 **HR**: 98 **BP**: 136/96 **RR**: 18 **SpO_2**: 98% RA
Exam:
Gen: thin, no acute distress
HEENT: no enlarged thyroid
CV: holosystolic murmur
Pulm: CTAB
Abd: soft, non-tender
Neuro: alert, oriented, normal affect
Extremities/Skin: warm, well perfused, no edema

Notable Labs & Imaging:
VBG: pH 7.29, O2 55, Bicarb 26.4, K 8.2, glucose 38
10 units insulin/D50 - glucose increased to 205

Hematology: WBC: 5.4 Hgb: 10.6 Hct 35.6 Plt: 175
Chemistry: after dialysis
Na: 133 K: 6.2 Cl: 95 CO2: 28 BUN: 48 Cr: 4.54 glucose: 62 (recheck - 37) Ca: Phos: Mag:
AST: 31 ALT: 29 Alk-P:138 T. Bili: 0.4, Direct bili 0.2, Albumin: 3.8
Protein: 7.2, lipase normal, TSH 7.74, T4 1
Insulin 4.7, c-peptide 6.7, b-hydroxybutyrate 0.17
Sulfonylurea screen normal
AM cortisol 8.9
Blood Cx- Strep mitis oralis

Imaging (from previous hospitalization):
Abd U/S - pancreas normal appearing, no focal or diffuse enlargement.
TTE - LVEF 39% (3 months ago 62%), no vegetations

Final Diagnosis: Methadone induced hypoglycemia

Problem Representation: Middle-age man with ESRD from amyloidosis and opioid use disorder with recent uptitration of methadone during hospitalization for bacteremia presents w/ hypoglycemia. Found to have normal insulin level, elevated C-Peptide, and blood cultures w/ Strep mitis.

Teaching Points (Kiara):

- **Hypoglycemia:** Approach broad and then specific. ***Insulin mediated*** (endogenous/exogenous)/not, ***chronic disease*** (liver failure, alcohol, renal disease, endocrine on medication, ESRD-insulin not well excreted, adrenal insufficiency), ***Infection/inflammation*** (Sepsis). ***Drugs*** (Opioid abuse, methadone).
- **Live threatening hypoglycemia**: Sulfonilurea, Sepsis, adrenal insufficiency
- **Holosystolic murmur** (questions for consideration): Is it new? Due to osteomyelitis bacteremia? Risk for endocarditis?
- **High K:** ESRD, Adrenal Insufficiency, malignancy
- **Acute Adrenal Insufficiency:** Big concern for sepsis → Precipitated by stressors (infection, bacteriemia) or pre-existing AI or steroid therapy.
- **C-Peptide elevated with hypoglycemia:** Sulfonilurea, Insulinoma, nesidioblastosis (excessive production of insulin by B cells), insulin autoimmune syndrome (trigger factor: medication, infection).