1//22 Morning Report with @CPSolvers

***Case Presenter**: Gurleen (@Gurleen_Kaur96) **Case Discussants**: CPS family <3*

CC: acute altered mental status

HPI:
58 yoF w/ acute AMS. Patient was reporded at a friend's house and had progressive confusion and sonomlence. No report of ingestion, witnessed seizures, or other precipitating events. Normal mental status early in the day. No report of trauma.

PMH: HTN, HLD, type 2DM, depression w/ psychosis in the past, anxiety

Meds: Amlodipine, lisinopril. Metformin, atorva, ASA, hydroxyzine risperidone, risperidone

Fam Hx:

Soc Hx:

Health-Related Behaviors:

Allergies:

Vitals: **T**: afebrile **HR**:120 **BP**: 170/116 **RR**: **SpO_2**: 95% on RA
Exam:
Gen: somnolence, unable to follow commands
HEENT: No scleral icterus or injection. PERRLA. Oropharynx w/ sant dried blood
CV: tachycardic, S1/S2, no M/R/G
Pulm: Increased WOB w/ proeminent kussmaul respirations, coarse breath sounds bilaterally
Abd: soft, NT/ND, no masses
Neuro: A&OxO, open eyes when asked, otherwise does not follow commands, grimaces and withdraws from painful stimuli
Extremities/Skin: trace LE edema, no tenderness

Given narcan without change in mental status
Fingerstick glucose 263
Notable Labs & Imaging:
Hematology:
WBC: 18.39 Hgb: 13 Plt:346k
Na: 138 K: 5.3Cl: 99 CO2:7 BUN: : 1.3 glucose: 278 anion gap 32 Ca: 10.3 AST/ALT not reported Alk-P: 121T. Bili:0.3 Albumin:
ABG: 7.22/12/143 Lactate: 10.2 Hydroxybutyrate: 0.7 U/A w/ 2+ glucose , trace ketones
Tylenol <5, ethanol neg, salicylates, urine toxicology all neg
RVP, COVD neg Carbon monoxide <0.6 RVT, covid neg
CXR: no focal consolidation, pulmonary edema, pleural effusion or pneumothorax
PAN CT: with no abnormalities Patient transferred to MICU. Patient admitted to taking "pills" at one point but remained altered. Daughter mentions that the patient's mood got worse in the past two months . Not like herself and in her ability to do things. Mother shivering at ties and acting odd especially in the last 2 weeks,. Patient also said she'd be better off dead.
pH worsened to 7.16 BP 250/109. Given labetalol/nicardipine. Pulling large tidal volumes, Ultimately intubated due to worsening mental status. Started on CRRT for clearance of toxins.
Measured osmolarity 318. Calculated osmolarity 302. Gap 16. Cr worsened to 2.27 rapidly, GFR 24. Volatile alcohol panel neg
Ethylene glycol level 478 - given fomepizole
Final Dx: ethylene glycol poisoning and metformin overdose

Problem Representation: 58 yo F with hyperacute with PMHx of DM, HTN and depression with psychosis presents presents to the ED with hyperacute AMS. Labs showed rapidly progressive kidney failure, metabolic acidosis with high AF, respiratory alkalosis and increased lactate.

Teaching Points (Gabriel):

- **Approaching hyperacute AMS:** Metabolic, Infection, Structural, Toxins.
  - Who is the patient? Older age → vascular etiologies, medications, immune status, PMHx
  - What context?: Trauma history? Seizure?
- **Collecting clues:**
  - **M**etabolic → Kussmaul respirations + DM PMHx → DKA, hypoglycemia, Metformin associated lactic acidosis
  - **I**nfection → High morbidity and mortality. Still in our ddx.
  - **S**tructural → Imaging
  - **T**oxins → antipsychotic medications → NMS, hyperacute nature
  - **Lab Workup**
    - DKA lab picture: Glu < 600, Bicarb <18, AG > 10, ketonuria, Serum B-hydroxybutyrate elevated, pH < 7.3, Normal serum osmolality
    - Increased lactate + acidosis → metformin side effect?, infections predisposing to DKA or hypoperfusion.
    - ABG → ASA.
- **Finishing the puzzle:**
  - **Rapidly progressive kidney failure + hyperacute metabolic acidosis and respiratory alkalosis + increased lactate:** Metformin toxicity, ASA, alcohol toxicity