11/8/21 Morning Report with @CPSolvers

***Case Presenter**: Pablo Portocarrero (@portorenal) **Case Discussants**: Andrew Kowalski (@polska_md)*

CC: 41-yo female with weakness

HPI: A 41 year old female presented to the ER with weakness for 2 days, predominantly in upper body. Associated with hypokalemia (unresponsive to IV supplementation) and hypophosphatemia.

Previous episodes of syncope and self-limiting diarrhea 1 week prior onset of weakness.

ROS: fatigue, malaise Blurry vision, myalgias and lower body weakness. No fever nor weight loss or chills.

PMH:
Dry eyes and dry mouth w/o tx (last episode around 6 mo)

2 uncomplicated c-sections

Meds:
none

Fam Hx:
DM mother
HTN father

Soc Hx:
No alcohol,herbal supplements or drugs or tobacco
Health-Related Behaviors:
none

Allergies:
none

Vitals: **T**:37 **HR**: **BP**:110/60 (orthostatism present) **RR**:18 **SpO_2**: 97
BMI: 26

Physical Exam:
Gen: non ill apparent distress, resting in bed
HEENT: no oral ulcers, no nodes
CV: normal
Pulm: unremarkable
Abd: normal
Neuro: decrease strength in lower extremities 3/5, reflexes normal
Extremities/Skin: no rash

Notable Labs & Imaging:
Hematology:
WBC: 7k Hgb: 12.5 Plt: 250000
Chemistry:
Na:134 K:**2.8** Cl: 110 HCO3 **15** CO2: BUN: 16 Cr: **1.4** glucose: 90
Ca: 8.6 **Phos: undetectable** Mag: 2.8
AST: wnl ALT: wnl Alk-P: wnl T. Bili: wnl Albumin: 3.8
T protein: 9.5 (normalized after hydratation)
VBG: **pH 7.24** HCO3 15, **ESR 71** CRP 13 **Uric acid: 1.3** TSH: 1.5
Autoimmune panel: C3 C4: wnl dsDNA: negative
Anti ro: 8 positive Anti-La 3.5 positive
ANA. 1:280
UA: **glucose 250**, minimal protein, no cast no hematuria, no nitrites
Urine protein/cr: 200 **b2 microglobulin (urine): 2.93**
Urine lytes: K: 13 Cl: 41 Na 34 **pH 7**
Urine GAP: 6 (positive)
Salivary gland bx: positive for sjogren sd

Final Dx: Fanconi Sd due to Sjogren

Problem Representation:
41 yo woman with PMHx of dry eyes and mouth presents with acute lower body weakness, hypophosphatemia, normal gap acidosis and glycosuria

Teaching Points (Kiara):

- **Hypokalemia**: Meds, illness, genetic.
- **Dry mouth:** Weather, diuretics, autoimmune (Sjogren). Check teeth, eyes (Schirmer test).
- **Periodic paralysis:** Potassium channel disorder, usually have an intense insulin response. If genetic, can present at 20-30 yo w/ multiple episodes. Associated w/ carbohydrate meals and extreme exercise.
- Multiple Myeloma points to normal anion gap.
- Paraproteinemias affect the *proximal* tubule → **Type 2** renal tubular acidosis. **Type 1** affects *distal* tubule.
- **Refractory Hypokalemia treatment consult:** Think about the probability of being loosing K and serious complications.
- Urinary Prot/Cr ratio, if you don't see much albumin, it is probably a tubular problem. If the proteins are too elevated, probably a paraproteinemia cause.
- **Urine anion gap (Na + K - Cl): *Why is it used?*** Measures the kidney ability to secrete acid. NH4 is secreted with Cl. In a metabolic acidosis, Cl is high, so more Cl is excreted (along with NH4). HIgh urine Cl, makes the urine gap negative. **NEGATIVE** result: Means losing NH4 → GI problems/ proximal RTA. **POSITIVE**: Other RTA (1,4).