04/28/25 Nephrology VMR with @CPSolvers

"One life, so many dreams" Case Presenter: Dr. Veena Ganesan Case Discussants: Dr. Samira Farouk & Douglas Farrell

Scribing (Vini)
CC: SOB, cough for a month
HPI: 61 yo male who presents with **SOB**, **cough** for a month

ROS (-): no travel history, negative urinary sx, negative for joint pains, no NSAIDs, herbals, not on an ACE-i, no pets, not on any medications, no fevers os substance abuse.
Has not seen a doctor in a long time; last time he had labs was 10 years ago.

PMH: no info

Meds: not on meds

Fam Hx:

PSH: former smoker, worked at World Trade Center worker
Exposure to chemicals. Silica/ heavy metals.

Health-Related Behaviors:

Allergies:

Vitals: T: afebrile **BP:**160s **RR:**wnl **HR**:wnl **Sat:** wnl
Exam: Gen: comfortable, no signs of volume overload. No edema.
Pulm: nl
Skin: no rashes

Notable Labs & Imaging:
Hematology:
WBC: 11k - 77% neutrophils Hb 13.4 Plt 200s

Chemistry
Na: 137 K: 5.8 Cr: 2.07 without baseline Ca:9 Mg:2 Glu: 90s Cl: 93
HCO3: 26
Coags wnl
UA: gross blood, monomorphic RBC, suggestive of acanthocytes, no casts, leukocyte esterase, nl specific gravity, protein 50
No significant uremia
Urine Protein Creatinine ratio: 0.6 - not nephrotic range
C4 wnl C3 202
ESR>120
CRP>141
cANCA > 1/320.
Imaging:
Renal US: ~12 cm both sides. No hydronephrosis, mild echogenicity.
CT Chest: bilateral GGO.
Renal biopsy: Crescentic GN

Dx: ANCA associated vasculitis with RPGN

Problem Representation: 61 yo m w/ no sign. PMHx pres w/ SOB for a month. Labs sign for WBC 11, Cr 2, UA gross hematuria, monomorphic RBC, cANCA 1>320, high ESR/CRP, Imaging: CT Chest w bilateral GGOs, Renal biopsy revealed Crescentic GN.

Teaching Points (Julia): Vitamin C mnemonic for differentials
SOB + kidney
- Infection (postinfectious GN, IgA Nephropathy, Sepsis (hemodynamic compromise)
- heart (cardiorenal syndrome)
- Pulmonary renal syndromes, PE (neph
- Acid base compensation: hyperventilation
- Autoimmune Vasculitis

Pt w/ **nephrotic** syndrome are in a **hypercoaguable state** + hypoalbumiinemia and prone for thrombotic events : PE; MI …

Heavy metal: i.e.
- led related nephrotic AIN, prox. RTA
- mercury membranous nephritis (NELL2 pos), prox. RTA
- cocaine/ levamisone induced nephritic syndrome (pauci-immune, 2xp)
- Cadmium: chronic tubulointerstitial nephritis, Fanconi syndrome

Hypertension = risk for progression of kidney disease AND/OR result of syndrome
RPGN = no miss diagnosis w/ hematuria and hypertension - Time = kidney

AKI *prerenal* = Hemodynamic; ***post*** = Plumbing issue ***intrarenal***: Anatomic approach: tubular, interstitial, glomerular, vascular
Use **specific gravity** > FENa for evaluation of effective circulating volume
<20 **UNa** vs high UNa not helpful

Spot UPr/Cr ratio good approximation whether there is a nephrotic range proteinuria or not
UPr/Cr diff UAlb/Cr -> Paraproteins ? (dipstick - Albumin NOT all protein detection)

CHAMPS mnemonic for syndromes w/ **low complement**
C – Cryoglobulinemia H– Heavy chain A – Atheroembolic M –MPGN P – Post-Infectious GN S - SLE
NI complements: Anti-GBM, IgA nephropathy, ANCA

Get PR3 AND MPO in addition to cANCA & pANCA b/o many FP
Always quantify protein !! cave dilution of protein leading to underestimation of proteinuria