# 02/18/21 Morning Report with @CPSolvers

***Case Presenter**: Dhruv Srinivasachar (@TheRealDSrini ) **Case Discussants**: Felipe Soto (@sotofelipe26 ) and Azeem Rathore (@AzeemRathore_ )*

**CC**: anemia

**HPI**: 63 M presents to outpatient clinic with Hgb 7.7
Hgb 3 weeks ago was 11. Pt reports increasing fatigue, otherwise wnl.

**PMH**:
Non small cell lung cancer - dx 6 weeks ago. Stage 4 w mets to the liver. Neg for EGFR

COPD- FEV1 60%

**Meds**:
Tiotropium
Albuterol PRN
Cisplatin based regimen- chemo

6 weeks ago- started on pembrolizumab

**Fam Hx**:
Nothing significant

**Soc Hx**:
Lives in the states

**Health-Related Behaviors**: 40ppy tobacco use

**Allergies**:
No known allergies

**Vitals**: **T**: 36.8 **HR**: **92** **BP**: 112/76 **RR**: 14 **$SpO_2$**: 100% on RA
**Exam**:
**Gen**: alert, oriented, no acute distress
**HEENT**: faint bilateral conjunctival icterus
**CV**: RRR, no murmur, no pedal edema
**Pulm**: clear
**Abd:** no tenderness, no distension, no other signs of ascites
**Neuro**: alert, oriented x3, nl strength/sensation throughout
**Extremities/Skin**: no petechiae, spider angiomata. Elbow and ankle joint swelling

**Notable Labs & Imaging**:
**Hematology**:
WBC: 8.7 Hgb: **7.7** Plt: 374
MCV: 99 Abs Retic count: **185 (H, upper limit 120)**
Ferritin/ B12/ Folate- nl
LDH **703** Haptoglobin: **<0.3 (L)**
**Chemistry**:
Na: K: Cl: CO2: BUN: Cr: glucose: Ca: Phos: Mag:
AST: nl ALT: nl Alk-P: nl T. Bili: **5.6** Direct Bili: **1.8**
Albumin:

**BM Bx:** erythroid hyperplasia, without evidence of tumor infiltration
**Direct antiglobulin test-** anti IgG, anti-C3 **positive**
**Final Dx**: AIHA 2/2 Pembro

Disease course: Pembro d/ced, managed with pred. Anemia resolved

**Problem Representation**: 63M with pmh of stage 4 non small cell lung cancer (EGFR neg, managed on Cisplatin + Pembro), presents with acute on chronic anemia (Hgb 11→ 7.7) with direct antiglobulin test positive for anti IgG and anti C3, ultimately diagnosed with AIHA 2/2 Pembro.

**Teaching Points (Sukriti)**:
**Pearl 1: Modelling the approach to Anemia using space-time: Isolated anemia**
Mild Anemia may provide no diagnostic specificity -- Anemia of chronic inflammation
- Base rate > Blood loss (Colon cancer)

**Establishing time course in anemia: Clinical presentation, baseline Hb, reticulocytes**
- Acute anemia - Blood loss, hemolysis
- Subacute- Chronic anemia: Medications, Toxins, raw materials, hormones, state of bone marrow

**Pearl 2: Acute anemia**
Is the person **losing blood** or is there **hemolysis**?
- Sources of bleed: GI tract (melena, hematochezia, hemoptysis), Lungs, retroperitoneum (trauma> spontaneous)

**Every good schema contains Medications! PD-1 inhibitors-- autoimmune hemolytic anemias**, Methotrexate, Mycophenolate
**Pearl 3: Conjunctival Icterus**
Hyperbilirubinemia - Direct (hepatic) or Indirect (hemolysis, others)
Indirect Hyperbilirubinemia - Hemolysis, Impaired Conjugation, hypothyroidism, Congestive hepatopathy, Rifampin
**Law of proportionality** -- Liver failure causing hyperbilirubinemia also causes proportionate coagulopathy, fluid overload etc.
**Pearl 4: Multiple joint swelling -- Arthritis**
Infections, crystals (metabolic disease), autoimmune disease, blood (coagulopathy)
**Parvovirus** - **aplastic anemia** not hemolytic anemia + arthritis
**Pearl 5: Hemolysis**
Approach: Environmental, membrane, Internal
Hemolysis mimic - Resolving hematomas, ineffective erythropoiesis
**Haptoglobin** is the **most specific lab** for hemolysis!
Immediately rule out the **sinister** causes: **MAHA** -- DIC, TTP, HUS