QUESTION 51 Anaemia

A 35-year-old man who is receiving erythropoietin (EPO) therapy for anaemia associated with end stage renal disease presents with lethargy. There is no obvious source of bleeding.

Blood investigations show:
- haemoglobin 65 g/L [110-160]
- mean corpuscular volume (MCV) 100 fL [83-97]
- reticulocyte count 15 x 10^9 /L [50-100]

The most likely cause of his anaemia is:
A. red cell aplasia.
B. reduced iron stores.
C. non-neutralising anti-EPO antibodies.
D. aluminium toxicity.
E. myelodysplasia.

Main features
1. Mild macrocytic anemia
2. Low reticulocyte count – hypoproduction of rbc

This is a horrible question due to the rareness of the condition (165 cases worldwide)

*Pure red cell aplasia* (Answer)

3 characteristics
1. Anaemia
2. Reticulocytopenia
3. Absent or rare erythroid precursor cell on bone marrow

Causes
1. Idiopathic
2. Thymoma
3. Myelodysplastic syndromes
4. Viral infection (parvo virus B 19)
5. Drugs – phenytoin, chloramphenicol

Anti-EPO Ab
- Mediated by IgG autoantibodies
- Eprex more indicated in PRCA,
- ? uncoated rubber stoppers in syringes
- Subcut administration has been ass with greater immunogenicity than IV

Clinical manifestation
- Hb level declines by > 2g/dL/month
- Reticulocyte count < 20000/microL
- Drop in platelet count
- Normal WCC
- Elevated serum transferring saturation and serum ferritin, reflecting decreased utilization of iron secondary to diminished erythropoisis

Diagnosis
- Bone marrow aspirate – severe erythroid hypoplasia
- Anti EPO Ab
While on EPO therapy and Hb falls, signifies Fe deficiency or infection. Other factors that interfere with EPO are Aluminium toxicity and hyperparathyroidism.

**Reduced Fe stores**
- Microcytic picture
- A higher reticulocyte count

**Myelodysplasia**
- Will show more macrocytosis – large rbc
- Anaemia present in majority of cases + bi or pancytopenia,
- Circulating myeloblasts