Understanding Anemia and other blood disorders in the Elderly

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Anemia in Elderly

• Etiology continues to be debated
  – Does aging cause anemia OR
  – Age related diseases cause anemia

• Fast becoming a public health crisis

• US> 3 million >65 years of age are “anemic”

• Recognize importance of anemia on cognitive and physical dysfunction and mortality
Consequences of Anemia in the Elderly

• Independent risk factor for disease related morbidity and mortality

• Functional impairment of basic daily living activities

• Deterioration of quality of life

• Increase risk of delerium due to hypoxia

• Risk of dementia higher in anemic patients
Anemia in Elderly

- "senile anemia" – mild, not urgent to tx as elderly are less active and need less O2
- Randomized trials of correction of anemia should demonstrate tx does more good than harm
- Frequent co-morbid conditions unique to elderly increasing anemia risk
- Mortality can be decreased either by treating underlying condition or the anemia directly
General Principles

- Importance of making a diagnosis
- Treatment can lead to improved quality of life
- Transfusional therapy mainstay of treatment in elderly
- Comorbid disease can lead to increased symptoms in mild anemia
Pathophysiology - Multifactorial

- Anemia of chronic disease/inflammation
- Nutritional
- Unexplained
  - 1. epo response, iron deficient
  - 2. IL-6- dysregulation of immune response
  - 3. sex steroids
  - 4. stem cells
  - 5. sarcopenia – low muscle mass
  - 6. increased hepcidin levels – decreased Fe absorption

- Myelodysplasia
Unanswered Questions

- Age, race changes in hemoglobin – do we re-define norms?
- Unique anemia of aging – does it exist?
- Routine screening of elderly for anemia?
- Who should dx and tx?
- Clinical guidelines for tx needed?
- Economic impact of more aggressive tx of anemia?
- Use of clinical trials?
Anemia work up in the Elderly Patient

1. Has there been blood loss (recent or remote)?

2. Is there evidence for increased RBC destruction (hemolysis)?

3. Is the bone marrow suppressed?

4. Is the patient iron deficient? If so, why?

5. Is the patient deficient in folic acid or Vitamin B12? If so, why?
History

- fatigue
- Decreased energy to do routine tasks
- Sleeping more
- Decreased concentration
- Increased irritability in patients with mild dementia
- Shortness of breath
- Chest pain
- Medication list important (ASA, coumadin)
Diagnostic Tools- always

- CBC, differential, smear
- Ferritin, Tfr receptor
- B12
- Creatinine
Diagnostic tests - sometimes

- TSH
- Serum testosterone
- ESR, Crp
- Bone marrow
- Serum folate
- LD, Bilirubin, retic count
- SPEP
- Epo level
Bone marrow aspirate and biopsy

- Important to determine diagnosis
  - in myelodysplasia
  - Iron deficiency anemia

- Simple procedure done under local anesthetic
- Cost effective procedure
Diagnostic Clues

- MCV- majority of unexplained anemia in elderly patients is macrocytic
- Ferritin level – lead to GI or GU work up
- Monocytosis on differential- think MDS
- Accompanying lymphocytosis- think CLL
- Decreased GFR, abn. Cr - low epo state
Causes of anemia

- Iron deficiency anemia (20%)
- Anemia of chronic anemia (20%)
- B12 Deficiency (14%)
- Anemia of renal insufficiency (low epo) (8%)
- Myelodysplasia (5%)
- Unexplained anemia (35-45%)
- Hemolysis, myeloma, leukemia
Iron Deficient Anemia - Causes

• Chronic bleeding (cancer, diverticula, angiodysplasia)

• Decreased absorption:
  – Achlorhydria
  – Increased hepcidin
  – Celiac
  – H. Pylori infection