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”
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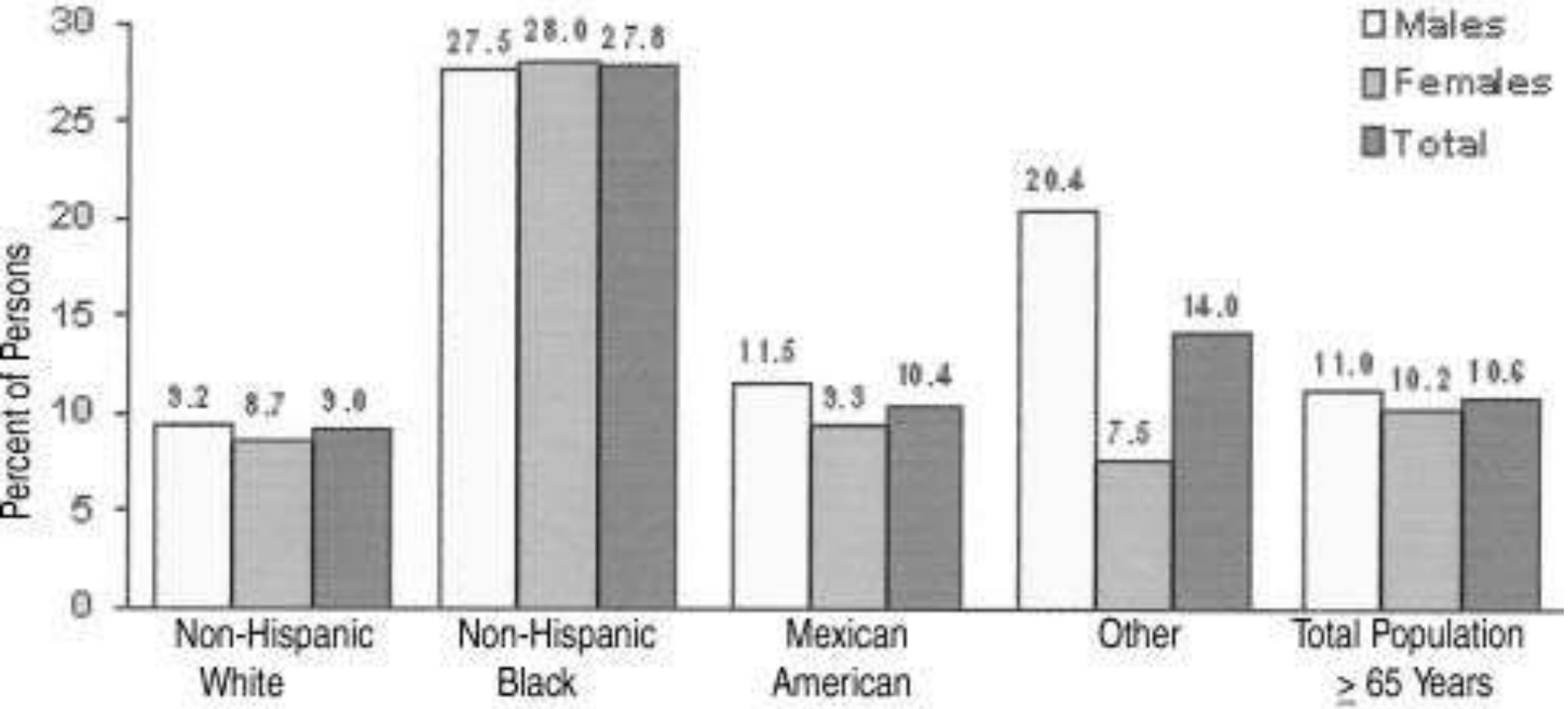
- Recognize importance of anemia on cognitive and physical dysfunction and mortality


Males
Females
Total
Percent of Persons
30
25
20
15
10
5
0
9.2
8.7
9.0
27.5
28.0
27.8
11.5
9.3
10.4
20.4
7.5
14.0
11.0
10.2
10.6
Non-Hispanic White
Non-Hispanic Black
Mexican American
Other
Total Population ≥ 65 Years

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 condtions 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

Diagnostic Tools

- 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