



PREOPERATIVE MANAGEMENT OF ANEMIA

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Why worry about Anemia

- Marik PE Corwin HL, Crit Care Med 2008;36;9:2667-74
- Saleh et al, Br J Anaesth 2007;99:801-8
- Koch et al, Crit Care Med 2006, 34:1608-16



Cardiac, Major Joint, and Critical Care Surgery

- Anemia has increased adverse outcomes
- Transfusion has increased adverse outcomes
- Transfusing anemic patients may have worse adverse outcomes



Definition of Anemia

- Males Hgb < 130
- Females Hgb < 120



Types of Anemia

- Hypochromic
- Normochromic normocytic
- Hyperchromic
- Hemolytic



Types of Anemia

- Iron deficiency
 - B12 deficiency
 - Anemia of Chronic disease
 - Anemia of renal disease
 - Hemolytic anemia
-
- **Anemia Prevalence 15-30%**



Blood Conservation Services

- Clinical Care Pathway for anemia in elective surgery
- For patients who are undergoing those surgeries that have a rational possibility of transfusion



Pre-op CBC 6-12 weeks

Male hgb < 130
Fem hgb < 120

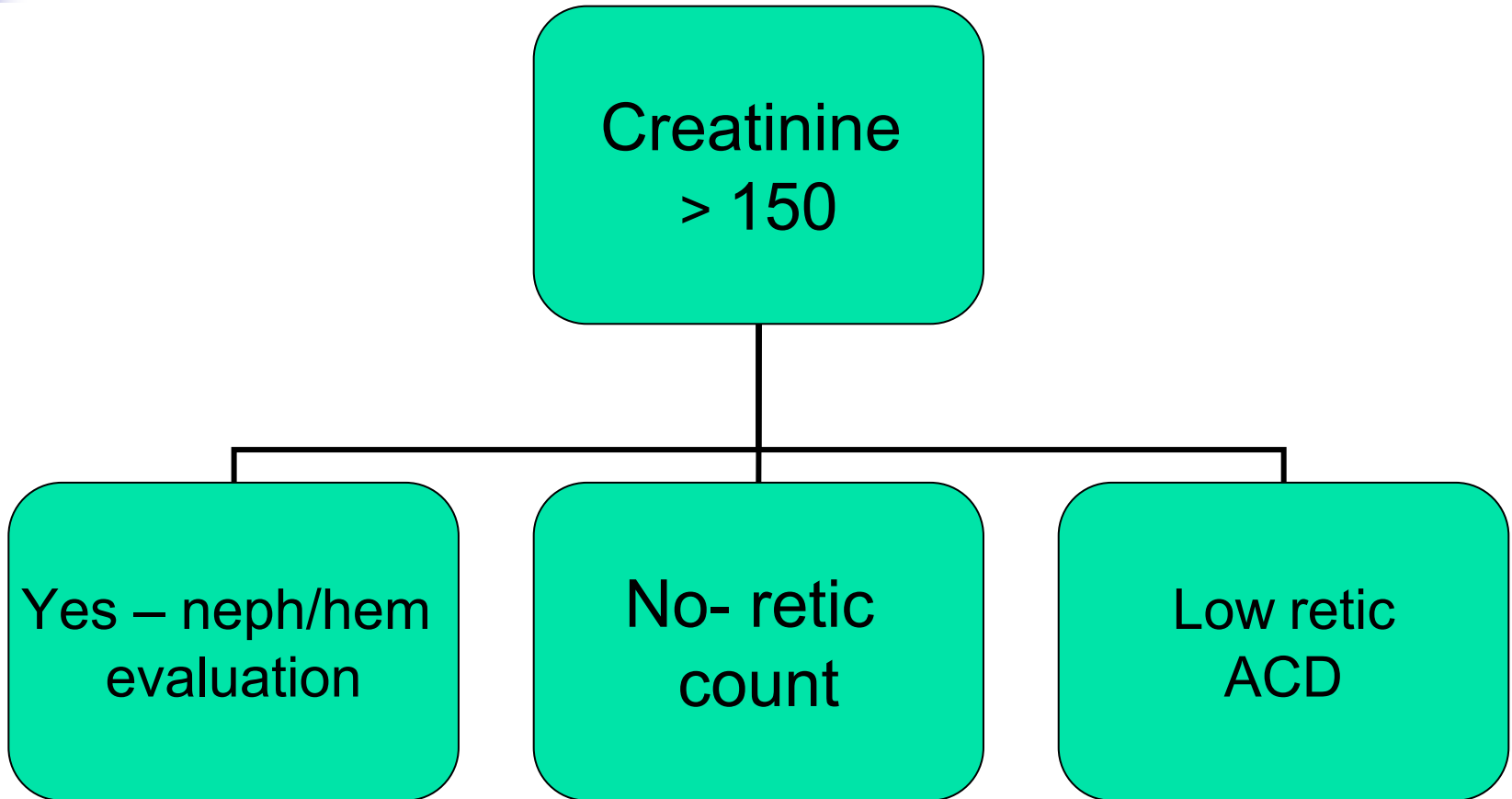
MCV 80-100

MCV < 80

MCV > 100



MCV 80-100





MCV < 80

Ferritin < 21
Transf sat < 15%

Yes – Fe supplement
? GI evaluation

No - creatinine



MCV > 100

- Serum B 12
- Consider hematology evaluation



Iron therapy

Preparation	Elemental iron	Iron content
Fe sulphate	325 mg	65 mg
Fe gluconate	300 mg	35 mg
Fe fumarate	300 mg	99 mg



Intravenous Iron

- Iron Dextran 25 mg test dose; 500-1000 mg as per protocol (takes 2-3 hours)
- Iron Sucrose 200-500 mg iv (can give 200 mg over 10 minutes. Less anaphylaxis; has antioxidant properties)



Erythropoietin

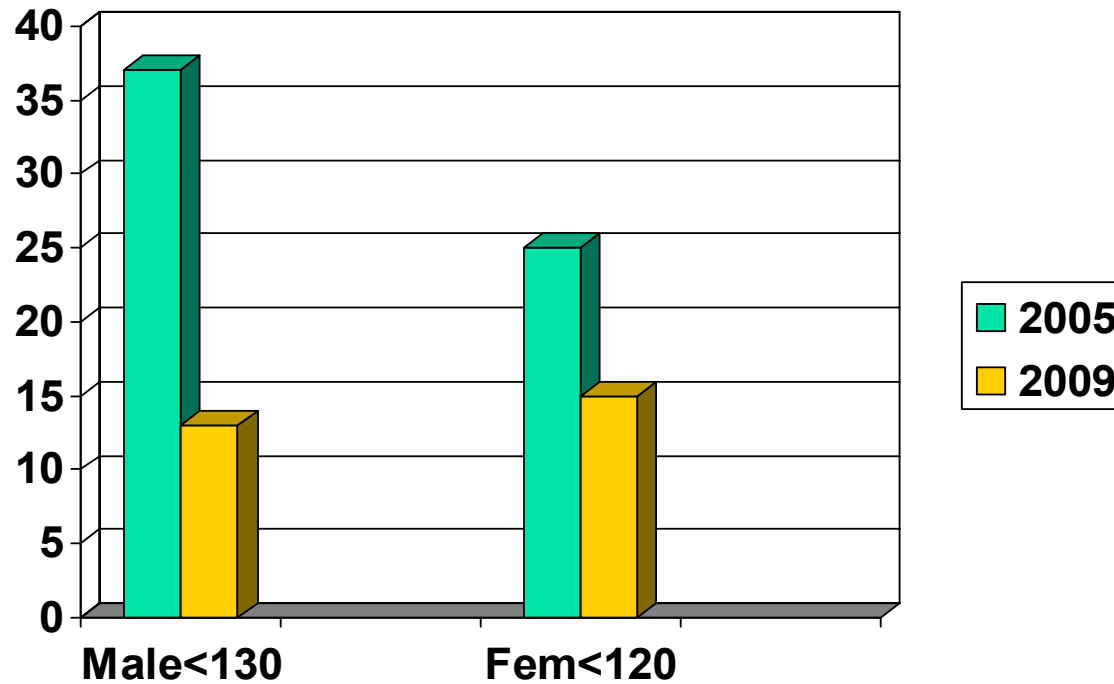
- Limited application
- Requires iron stores
- Used as adjuvant to PAD
- Contraindicated in certain malignancies (breast, head and neck, possibly others)



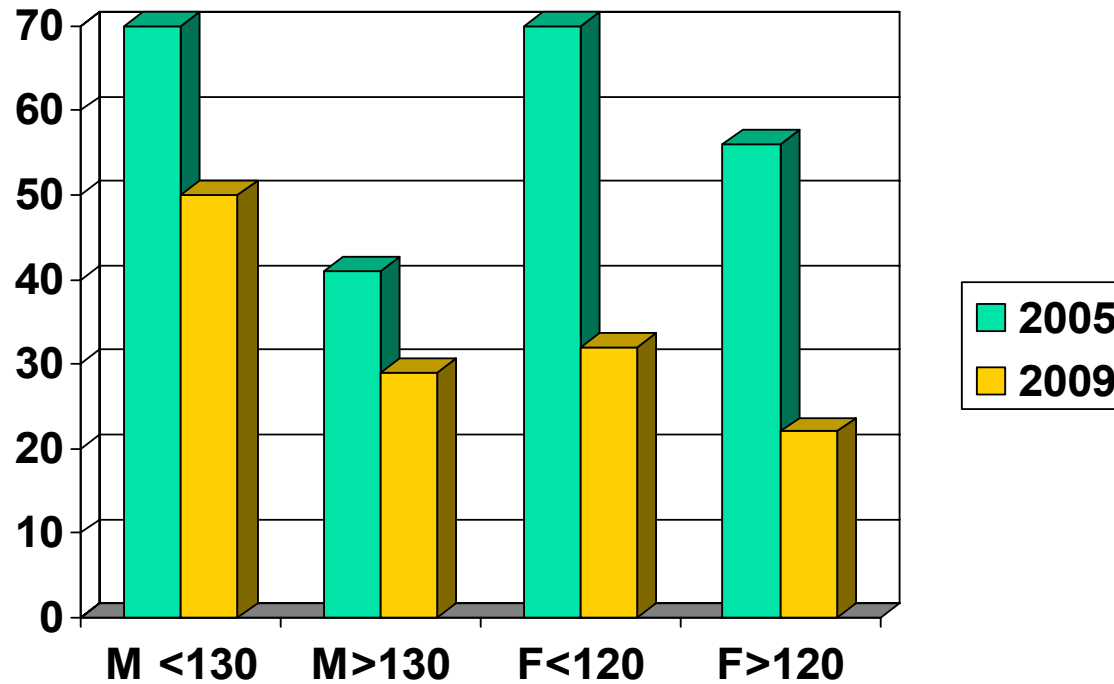
Erythropoietin therapy

Anemia N	Goal met	Partial	Failure
ACD 40	24	10	6
Iron def 7	4	1	2
PAD 10	8		2

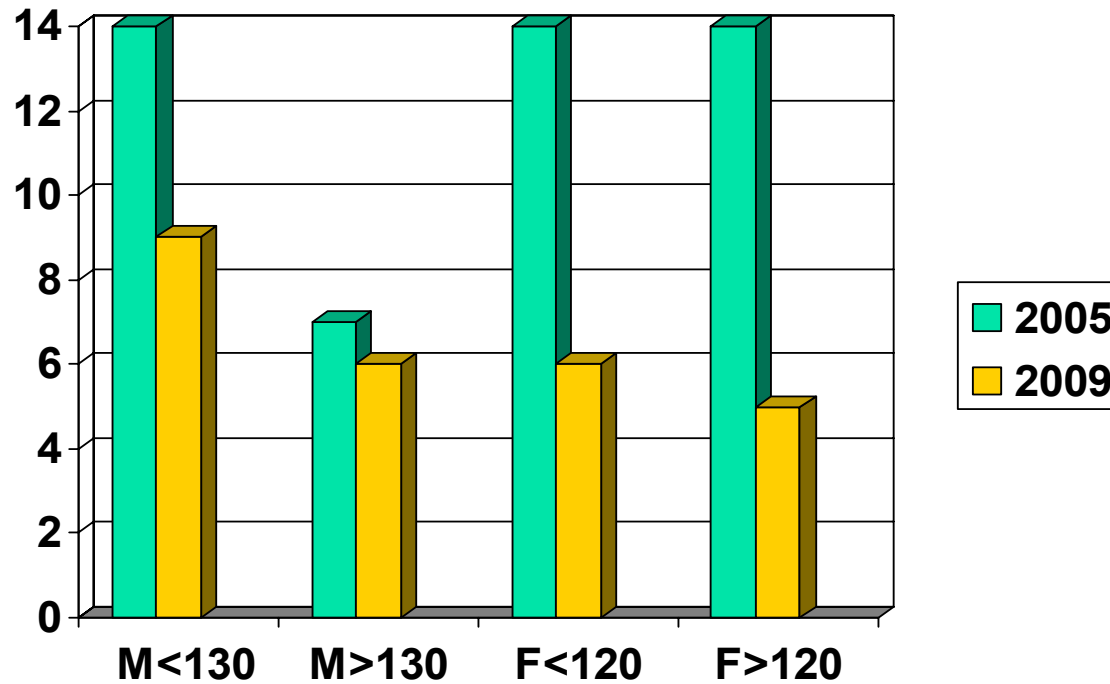
Preoperative Anemia



Transfusion Rate



Median Length of Stay





QUESTIONS

Blood Conservation Service 787-1277