Prevention of Iatrogenic Anemia

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Conflict of Interest

• I have no financial relationships or involvement with industry to disclose.

• I will not discuss off label use and/or investigational use in my presentation.
Objectives

• Define iatrogenic anemia
• Review the prevalence and etiologies of hospital-acquired anemia
• Describe nonpharmacologic strategies to decrease the need for red blood cell transfusion
• Describe nursing interventions to reduce iatrogenic anemia
Iatrogenic Anemia

- Anemia that is caused by hospitalization procedures not by patient illness
- Diagnostic phlebotomy major cause
  - Studies record daily blood losses of 50-90ml!
  - Accounts for 30-50% of transfusions in ICU

Corwin et al. Chest 1995
Etiology

Acute Blood Loss may result from:

– Repeated venipuncture for medical evaluation
– Intraop or postop bleeding may be difficult to quantify, often underestimated
– GI hemorrhage
– Bleeding into the retroperitoneal area can be significant and not obvious
ICU study

Data was collected on 28 patients in the ICU over one month
RESULTS

AVG BLOOD LOSS PER DAY in ICU

- Discard Volume: 20.7 ml
- Sample Volume: 33.9 ml
- Total Volume Loss: 54.6 ml

AVG LENGTH OF STAY in ICU: 5 Days
LAB COSTS

• $92.64 per day/ per patient not including ABG’s ($10.37 each)

• Includes accessioning time, materials and procedural time

• Not included- nurse time, transport
OTHER FINDINGS

• Comparison of lab results for 1 ml and 5 ml discards
• Glucometer sampling practice
• Heparin is no longer used in lines but discard practice not changed
• Review of blood tests performed

Significant frequency where there were no clinical indications or orders for blood work
Iatrogenic Anemia

Nurses can decrease this by:

• Assess frequency and types of routine tests
  • Question MDs about repetitive or unnecessary tests
• Non-invasive techniques
• Point of Care tests

Corwin et al. Chest 1995
Iatrogenic Anemia

Nurses can decrease this by:

• Record diagnostic phlebotomy losses on I&O
• Consult with labs on using smaller volumes or Ped Tubes (this alone can reduce blood loss by 33-47%)
• Discarded volumes account for 24-30% daily blood loss > Special devices e.g. VAMP

Corwin et al. Chest 1995
Preventing Iatrogenic Anemia

• Reduce blood sample size (point of care)
• Return dead space blood loss
• Reduce the # of indwelling catheters
• Eliminate “standing orders” for blood tests
Blood Management Intervention

- Implement regular communication with medical and hospital staff regarding anemia
- Review blood requirements for all lab testing
- Develop minimum blood volume for each test
- Source out new blood collection tubes and devices
- Create education plans e.g. posters
- Schedule educational session to introduce new tubes and devices
Case Study

- 71 year old Jehovah’s Witness Male
- Admitted with a Thrombosis in the Popliteal Artery  Hgb 143g/L
- Started on Heparin, leg became ischemic
- Taken to Interventional Radiology for Thrombolytic therapy via catheter Hgb 133g/L
- Catheter connection loose over night
- Multiple phlebotomies i.e. 19 CBC’s in 9 days
Thank you
Thought for the day……

“Blood transfusion is a lot like marriage. It should not be entered into lightly, unadvisedly or wantonly, or more often than is absolutely necessary.”

Beal, RW, 1976
Questions