Randall Children's Hospital

Co-Management Guideline for Primary Care/Specialty Care Collaboration

Iron deficiency ± anemia in children 9 months-5 years

Hematology/Oncology

Phone: 503-276-9300
Fax: 503-276-9351

Introduction

Iron deficiency is the most common cause of anemia in children and is particularly prevalent in young children and adolescents (see adolescent guideline). Ferritin is a useful iron study, indicating the amount of stored iron. Labs must be interpreted by age-specific norms (available in Harriet Lane and others, vary slightly by reference); the table below shows the lower limit of normal (LLN) or upper limit of normal (ULN) by age per Nathan and Oski's Hematology of Infancy and Childhood, 8th Ed.:

Age	Hemoglobin (g/dL, LLN)	MCV (fL, LLN)	Ferritin (ng/mL, LLN)	TIBC (ug/dL, ULN)
0.5-2 years	10.5	70	6	441
2-6 years	11.5	75	6	441

Evaluation and Management

Elicit history regarding patient and/or affected family member

- Red flags: bleeding (GI, trauma, frequent and prolonged epistaxis), renal failure, and hemodynamic instability
- Diet: Milk intake >18 ounces per day. Breast-feeding >4 months without iron supplementation
- Symptoms: Fatigue, pallor, pica
- Social factors: risk of poor adherence to PO iron

Labs to consider

- **All patients: CBC with differential, iron deficiency panel (including ferritin) if not done in past 30 days:**
  - Labs consistent with IDA: low hemoglobin, low MCV, high RDW, +/- high platelets, ferritin less than 10-20 with concurrent anemia, elevated TIBC for age
- **Select cases:**
  - GI symptoms: Hemoccult
  - Jaundiced or normocytic: Reticulocyte count, Coombs
  - Adenopathy, hepatosplenomegaly, weight loss, bone pain, unexplained fevers: LDH, uric acid, LFTs
  - Excessive bleeding: Von Willebrand panel, fibrinogen

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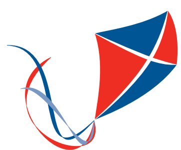

Management while awaiting appointment

- **Hemoglobin ≥7 g/dL:** low risk, outpatient management
  - PO iron for goal of 3-6 mg/kg/dose every other day
  - Ferrous sulfate is standard; low cost, easily prescribed
  - Alternatives for children with constipation, concern for poor tolerance: Novaferrum (available on Novaferrum.com and Amazon.com) liquid 15 mg/mL, Bariatric fusion soft chews, other polysaccharide iron
  - Note that: Iron can cause constipation. Iron will cause black stools, this is not a reaction. Chewable and liquid iron will stain teeth; brush teeth after each dose. Iron should not be taken with dairy. Vitamin C increases iron absorption.
- **Hemoglobin 4-6.9 g/dL:** intermediate risk, outpatient management usually indicated. Discuss with hematology for urgent outpatient evaluation.
  - PO iron for patients with anticipated good adherence and no risk factors
  - Strongly consider IV iron; this can be given outpatient
  - PRBC only if ongoing blood loss, hemodynamic instability
- **Hemoglobin <4 g/dL:** high risk, hospitalization likely indicated
  - Strongly consider PRBC. Requires PICU admission for monitoring of patient whose hemoglobin is <5 g/dL, per RCH policy. Use small aliquots (2-5 mL/kg over 4 hours)
  - IV iron could be considered in patients who are hemodynamically stable and prefer to avoid transfusion
  - PO iron should be initiated once hemodynamically stable

When to refer

- Hemoglobin less than 7 g/dL
- Failure of hemoglobin to improve with oral iron replacement after 1-3 months
- Please note: Hematologist will determine if IV iron is appropriate. Most patients with IDA do not require IV iron.

Referral process

Randall Children's Cancer and Blood Disorders Program

Please send pertinent lab results

Phone: **503-276-9300** or toll-free **877-KIDS-ONC/877-543-7663**

Fax: **503-276-9351** or we can view labs via **Epic Care Everywhere**

Legacy One Call: 1-800-500-9111

Updated September 2024

Find this and other co-management/referral guidelines online at: ***www.legacyhealth.org/randallguidelines***

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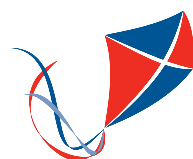

RANDALL CHILDREN'S HOSPITAL

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