Standardizing the Evaluation and Management of Adolescents with Abnormal Uterine Bleeding and Secondary Anemia

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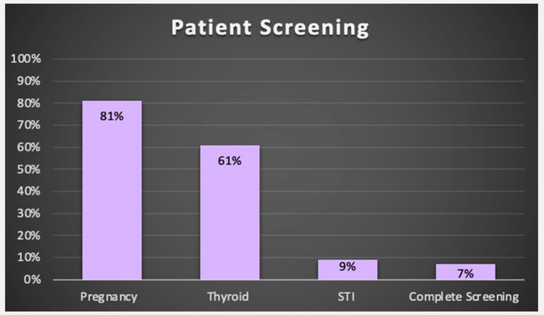
BACKGROUND

Abnormal Uterine Bleeding (AUB) is the most common gynecologic complaint among adolescents[1]. There are multiple causes of AUB including hematologic, hormonal, infectious and structural. The diagnosis and management of AUB benefits from a multidisciplinary evidence-based medicine pathway. We set out to create a clinical pathway using data pooled from established journals including ACOG[1], Journal of Thrombosis and Hemostasis[2], Pediatrics in Review[3], Journal of Pediatric Endocrinology[4], in addition to in-house expert opinions from faculty in Hematology, Oncology, and Adolescent Medicine..

DATA ANALYSIS

A retrospective chart review performed for hospital encounters at our institution from 2018 to 2023 for admitted adolescent patients, 10-21 years of age, with anemia and AUB identified 196 patients. Exclusion criteria included patients with a known hematologic disorder, chronic disease, identified alternative bleeding source, pregnancy, or management of AUB and anemia at an outside hospital. After exclusion, 46 patients met criteria.

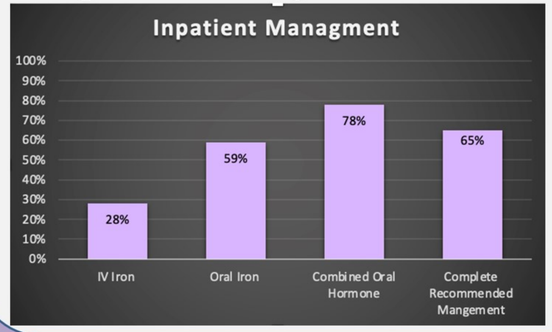
Screening of Common Non-Hematologic Causes of AUB



Only 7% of patients received recommended screening for common non-hematologic causes of AUB, with 81% of patients screened for pregnancy, 61% for TSH, and 9% for *N. gonorrhea and C. trachomatous*.

Primary Outcome: Improve screening of common non-hematologic causes of AUB (thyroid abnormalities, STI's and pregnancy) to 75% of patients.

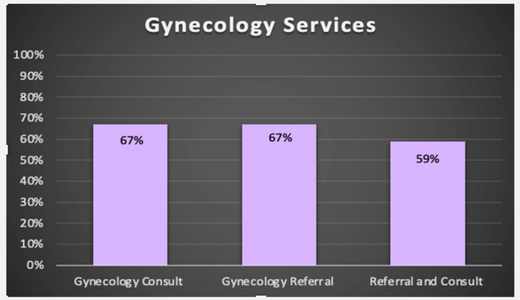
Inpatient Management of Patients with AUB and Anemia



Once admitted, 28% of patients received recommended medical treatment of IV iron, oral iron, and hormonal therapy. 59% received IV iron, 78% were started on PO iron, and 65% received hormone therapy.

Primary Outcome: Standardize management of AUB and anemia where 75% of admitted patients will receive IV iron, oral iron and oral hormonal therapy.

Gynecology Consult and Referrals for Females with AUB



For patients admitted, 67% of encounters included a gynecology consult, 67% of encounters included a gynecology referral, and 59% had both.

Primary Outcomes: Improve gynecologic involvement for adolescents with abnormal uterine bleeding to 75% of patients seen.

APPLICATION TO PRACTICE

Multidisciplinary creation of the clinical pathway below. This pathway will be instituted at CHNOLA but going forward we are hopeful to provide for additional hospitals and clinics in the region.

Baseline Labs: All Patients with AUB and Anemia Symptoms
Blood: CBC, Retic, Type and Screen, Ferritin, TSH
Urine pregnancy test, Gonorrhea/Chlamydia Screen

Admit to CHPA with Hematology and Gynecology Consult.
Admission Orders: Vitals Every 4 hours, regular diet, fall precautions.

Secondary Labs for hemodynamically stable patients admitted
PT/PTT, Fibrinogen, Platelet Function Assay, Iron Panel, Von Willebrand Antigen and Activity
***If previously worked up for bleeding disorder do not need

Labs for Patients Receiving FIRST Blood Transfusion
Transfusion screening Labs (CMV, HIV, Hepatitis panel, Hemoglobinopathy Evaluation) – Please use General Pediatric Blood Transfusion Order Set

Medical Management – Iron Replacement
IV Iron (100 mg) Over 1 hour
PO Iron (325 mg) daily, avoid giving with dairy products or calcium supplements
Fiber supplementation or stool softener while on Iron

Medical Management – Blood Transfusion
Based on clinical judgement. Recommend in patients with hemoglobin <7 who are actively bleeding, patients with symptomatic anemia or patients with other clinical concerns.
Blood Transfusion 2-unit pRBC over 3 hours. Order using Pediatric General Blood Transfusion Order Set
Recommend repeat CBC in patients who continue to have symptomatic anemia or no change to severity of bleeding. Do not need to repeat CBC in patients who are symptomatically improving.
Repeat Transfusion if Hgb <7 or per clinician judgement

Medical Management – Menstrual Bleeding
1st Line: Combined Oral Hormone Replacement Taper (30 mcg ethinyl estradiol)
Combined oral hormone TID x7 days → daily until follow up
*Consider PRN Zofran for nausea associated with high dose estrogen therapy *
***If patient is not actively bleeding, daily combined oral hormone replacement, continue until follow up
Contra-indication to estrogen therapy or family refusal: Aygestin or TXA

PCOS work up to be determined by Gynecology consult

Discharge: When patient anemia is symptomatically improved and bleeding stopped/decreasing
Do not need a repeat CBC if anemia and bleeding are symptomatically improved
Follow up: 1 week with Hematology. 1 month with gynecology.
Discharge Medications: Combined Oral Hormone Taper, Daily Oral Iron

SOURCES

1ACOG COMMITTEE OPINION no. 785: Screening and Management of Bleeding Disorders in Adolescents With Heavy Menstrual Bleeding. Obstet Gynecol. 2019;134(3):71-83.

2.Zia A, et al. Standardizing care to manage bleeding disorders in adolescents with heavy menses-A joint project from the ISTH pediatric/neonatal and women's health SSCs. J Thromb Haemost. 2020 Oct;18(10):2759-2774.

3. R. Graham; The Adolescent with Menorrhagia: Diagnostic Approach to a Suspected Bleeding Disorder. Pediatr Rev December 2018; 39 (12): 588–600.

4.Yaşa C, et al. Approach to Abnormal Uterine Bleeding in Adolescents. J Clin Res Pediatr Endocrinol. 2020 Feb 6;12(Suppl 1):1-6.