Abnormal Uterine Bleeding (AUB) Inpatient

Nationwide Children's — When your child needs a hospital, everything matters.

Center for Clinical Excellence

Patient admitted with abnormal uterine bleeding with ongoing brisk blood loss AND Hgb ≤7or symptomatic

Inclusion Criteria
- Any patient admitted with abnormal uterine bleeding

Exclusion Criteria
- Pregnancy
- Isolated post-coital bleeding
- Traumatic etiology for blood loss

If not already obtained:
- Consider IV placement - *Place away from flexible joints if possible*
- Type and screen if hypotensive or ill appearing requiring transfusion/IV bolus
- PT/PTT/Fibrinogen
- CBC w/ Diff (if > 24 hours since last value)
- Pregnancy test/STI testing if sexually active
- Consult adolescent medicine/hematology

Link to ED pathway

Definition & Diagnosis

History

Differential diagnoses

Medications

Able to tolerate PO?

Yes
- Oral contraceptive: 1 pill Q 6 hours until bleeding stops
- Zofran PO 8 mg Q 8 hours while receiving Q 6 hour hormone therapy
- IV Iron *
- Consider indications for PRBC transfusion

No
- Estrogen 25mg IV Q 6 hours until bleeding stops**
- Zofran IV 8 mg Q 8 hours while receiving Q 6 hour hormone therapy
- IV Iron
- Consider indications for PRBC transfusion

Discharge criteria:
- When patient is tolerating oral intake
- When bleeding stopped
- When patient is hemodynamically stable
- Follow-up with adolescent medicine within 1 week
- Follow up with hematology in 1-2 weeks
- If cannot get appointment within 1-2 weeks order CBC/retic for 1 week post-discharge and route to "heme/onc phone nurse pool"
- Discharge everyone with oral iron and OCP and ondansetron PO Q8H as needed while receiving hormonal therapy

***IV Iron:**
Oral iron may be used if asymptomatic and if bleeding is quickly responsive to hormonal therapy

****IV Estrogen:**
Conjugated estrogen 25 mg Q6
Slow push over 5 minutes. If flushing occurs, decrease rate by 50%. (Lexicomp®)

Definition & Diagnosis

In clinical practice, the diagnosis, evaluation and treatment of heavy bleeding are based upon “patient experience”, the female’s personal assessment of blood loss and its impact on her life.

Matteson et al. Non-surgical management of heavy menstrual bleeding: a systematic review and practice guidelines. Obstet Gynecol 2013;121:632-643

General Guidelines for Consideration

Normal menstrual bleeding:

- Cycle length 21-45 days
- Flow length < 7 days
- Product (pad or tampon) use ≤ 6 products in 24 hours

Heavy Menstrual bleeding:

Excessive menstrual loss that interferes with the patient’s physical, emotional, social and material quality of life and can occur alone or in combination with other symptoms

F. Haamid et al. Heavy Menstrual Bleeding in Adolescents. NASPAG Committee Opinion. J Pediatr Adolsc Gynecol. 2017;30:335-340

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Focused History for Evaluation of Heavy Menstrual Bleeding

- **Bleeding pattern**
  - Frequency of changing pads or tampons
  - Presence of clots > size of quarter
  - Effect on quality of life
- **Symptoms of anemia**
  - Shortness of breath
  - Acute increase in exercise intolerance
  - Lightheadedness
  - Syncope
- **Sexual and reproductive history**
  - Menstrual history
  - Possibility of current pregnancy
  - Contraceptives use
  - Sexually transmitted infections
- **Associated symptoms**
  - Fever
  - Chills
  - Pelvic pressure or pain
  - Bowel or bladder dysfunction
  - Vaginal discharge or odor
- **Symptoms associated with systemic cause**
  - Obesity
  - PCOS
  - Hypothyroidism
  - Hyperprolactinemia
  - Hypothalamic or adrenal disorder
- **Chronic medical illness**
  - Inherited bleeding disorders (coagulopathy, blood dyscrasias, platelet function disorders)
  - Systemic lupus erythematosus or other connective tissue diseases
  - Liver disease, renal disease, cardiovascular disease
- **Medications**
  - Hormonal contraceptives
  - Anticoagulants
- **Family history**
  - Coagulation or thromboembolic disorders
  - Hormone-sensitive cancers

Adapted from:

F. Haamid et al. Heavy Menstrual Bleeding in Adolescents. NASPAG Committee Opinion. J Pediatr Adolsc Gynecol. 2017;30:335-340

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Differential Diagnoses

- **Endocrine**
  - Anovulatory bleeding
  - Polycystic ovarian syndrome
  - Thyroid disease
- **Bleeding disorders**
  - Von Willebrand disease
  - Platelet dysfunction
  - Thrombocytopenia
  - Clotting factor deficiency
- **Pregnancy**
  - Abortion
  - Ectopic pregnancy
  - Gestational trophoblastic disease
- **Infection**
  - Sexually transmitted diseases – Gonorrhea/Chlamydia/Trichomonas
  - Adenomyosis
- **Uterine**
  - Myoma
  - Intrauterine device
  - Polyp
  - Cancer
- **Medication**
  - Depot medroxyprogesterone
  - Anticoagulants
- **Other**
  - Trauma
  - Foreign body
  - Hemorrhagic ovarian cysts

F. Haamid et al. Heavy Menstrual Bleeding in Adolescents. NASPAG Committee Opinion. J Pediatr Adolsc Gynecol. 2017;30:335-340

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Concern for Bleeding Disorder

Laboratory evaluation for a bleeding disorder occurs during follow-up with Adolescent Medicine

Among adolescents with heavy menstrual bleeding, up to 20% are reported to have an underlying bleeding disorder with the following suggested frequencies:

- Von Willebrand disease 5-36%
- Platelet function defects 2-44%
- Thrombocytopenia 13-20%
- Clotting factor deficiencies 8-9%

Possible bleeding disorder if any of the following:

- Saturating a product faster than every 2 hours
- Clots bigger than a quarter
- Needing 2 products at once
- Frequent “accidents” or leaking through protection
- “Flooding” sensation
- Previous or current diagnosis of anemia
- Excessive bleeding with tooth extraction, surgery
- Family history of diagnosed bleeding disorder

F. Haamid et al. Heavy Menstrual Bleeding in Adolescents. NASPAG Committee Opinion. J Pediatr Adolsc Gynecol. 2017;30:335-340

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Symptomatic Anemia with AUB

Symptoms of symptomatic anemia with AUB include:

- Shortness of breath
- Sustained tachycardia at rest or hypotension
- Difficulties with activities of daily living
- Orthostatic hypotension *(fall of systolic BP over 20 mm Hg or fall in diastolic BP over 10 mm Hg within 3 minutes of standing)*

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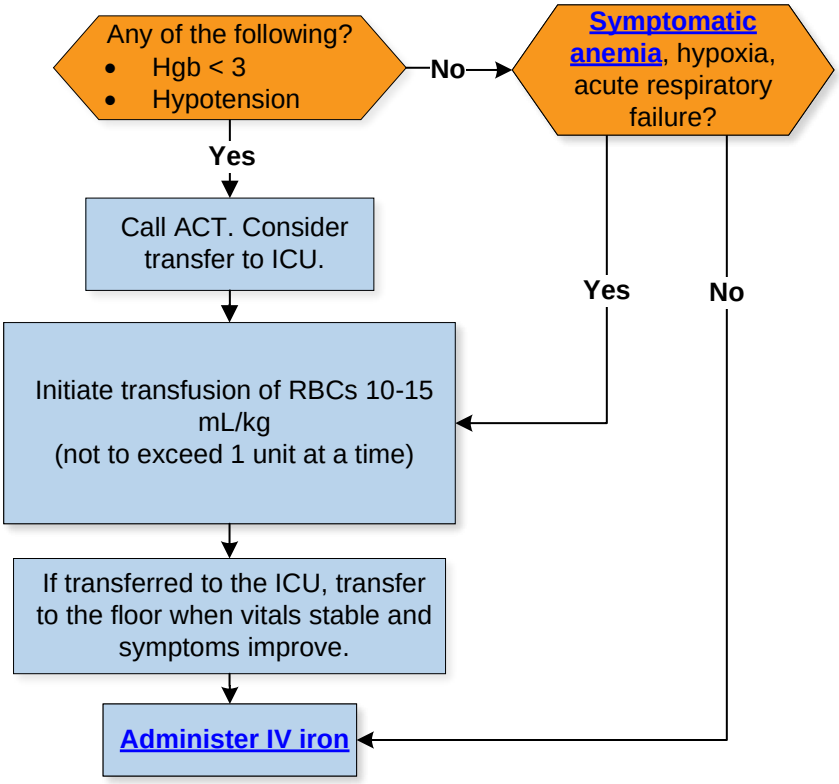
Indications for PRBC Transfusion



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Ferric Carboxymaltose/Injectafer™

- If able, obtain phosphorous level prior to administration of Ferric Carboxymaltose/ Injectafer (FCM)
  - This will be followed up as outpatient and does not need to be resulted prior to giving the FCM.
  - If unable to obtain phosphorous level, appropriate to proceed with FCM infusion
  - If level is normal, appropriate to proceed with FCM infusion
  - If level is low, appropriate to proceed with FCM infusion, or alter therapy in discussion with heme-onc
    - Clinicians can transition therapy to **iron sucrose** (often preferred by insurance), however, this therapy will likely require an increased number of dose administrations and IV placements
    - Risks and benefits for both infusions should be discussed with patient and family, and arrive at therapy option through shared decision making

- Peripheral IV placement
  - IV placement must be away from joints and/or “bends”
    - This is not a contraindication to giving the infusion if no other IV sites can be obtained
    - Utilize arm immobilization devices
    - Instruct patients to keep arm straight and instruct patients/parents to notify RN if patient is experiencing pain during the infusion.
  - FCM may be administered through central venous access if present
- FCM administration instructions
  - Infusion will be run via pump for 20 minutes
  - FCM is ordered as 15mg/kg, with maximum one-time infusion dose of 750mg
  - Vital signs to be measured at baseline, 5 minutes into the infusion, at the completion of the infusion, and at completion of observation period
  - Post-infusion 10mL flush will be administered
  - Patients should be observed for a 40-minute observation period, to evaluate for **hypersensitivity reactions**

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Iron Sucrose/Venofer™

Please note: Iron sucrose should only be used for patients with low phosphorus; AND in direct consultation/ recommendation by Hematology; otherwise FCM is preferred therapy

Age	Dose
≥ 6 months – 17 years	Initial dose: 7 mg/kg not to exceed 100 mg Maintenance dose: 7 mg/kg not to exceed 300 mg
≥ 18 years	Initial dose: 7 mg/kg not to exceed 100 mg Maintenance dose: 7 mg/kg not to exceed 500 mg

*Iron sucrose doses up to 100 mg: 15 minute infusion

*Iron sucrose doses between 100 mg - 500 mg: 60 minute infusion

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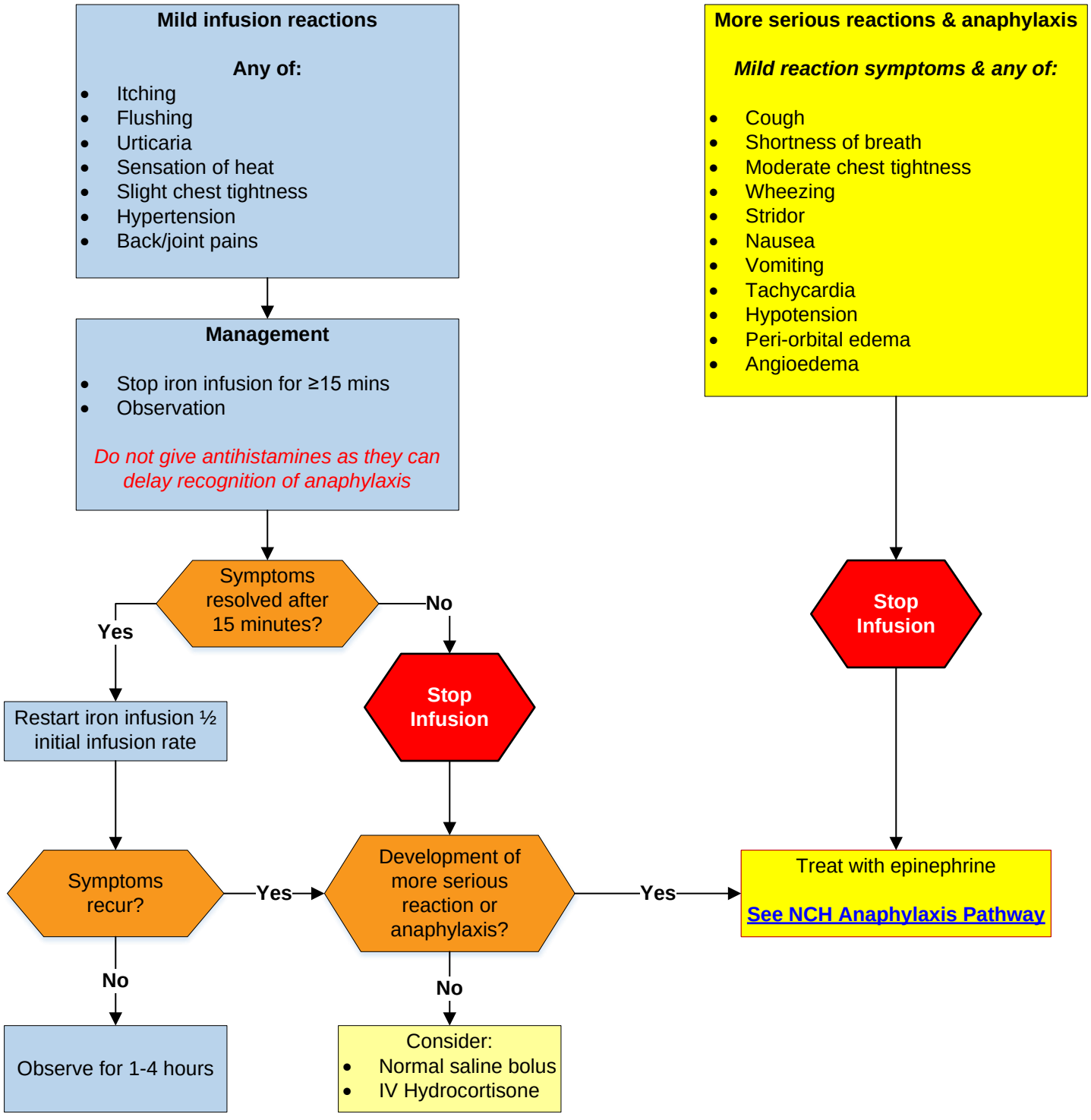
Hypersensitivity Reactions



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Adapted from:
Rampton D, Foklersen J, et al. Hypersensitivity reactions to intravenous iron: guidance for risk minimization and management. Hematologica. 2014;99(11):1671-1676.

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Medications

Oral Contraceptives

Monophasic oral contraceptive pill (OCP) containing 30-50 mcg of estrogen:

- Norgestimate 0.25 mg/ethinyl estradiol 35 mcg (Sprintec, Mononessa, Ortho Cyclen)
- Norgestrel 0.3 mg/ethinyl estradiol 30mcg (Lo/Ovral*, Low-Ogestrel, Cryselle)

All are equally efficacious and well tolerated
** Used most often*

Estrogen contraindications

- **Relative contraindication (okay to use initially to control bleeding):**
  - First degree relative with history of PE or DVT
- **Absolute contraindications:**
  - Current or past blood clot
  - Current or past migraine + aura
  - Hypertension (Systolic > 140, diastolic > 90)
  - Systemic lupus erythematosus with + lupus anticoagulant
  - Known Thrombotic mutations: prothrombin mutation, factor V Leiden
  - Known Protein C, Protein S and antithrombin deficiencies
  - Estrogen-dependent tumors
  - Hepatic dysfunction or disease

Progestin-only alternatives:

- Norethindrone acetate (Aygestin) 5 mg
- Medroxyprogesterone acetate (provera) 10 mg

Counsel patient that these are not birth control pills and not FDA approved for contraception

Estrogen-containing medications and Progestin-only alternatives can be tapered the same way:

- **Severe bleeding:**
  - One hormone pill four times per day for 2-4 days (until bleeding stops)
  - THEN one hormone pill three times per day for 3 days
  - THEN one hormone pill twice a day for at least 2 weeks

Oral Iron Supplementation

Ferrous sulfate 325 mg (65 mg elemental iron) once daily for patients who are ≥ 35 kg
(Otherwise 3-6 mg/kg of elemental iron once daily with a max of 100 mg elemental iron daily if <35 kg)

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Quality Measures

Goal: to provide a standardized approach to evaluation and treatment of abnormal uterine bleeding in nonpregnant patients

Process Metrics:

- Pathway visualization
- Order panel utilization

Outcome Metrics:

- Length of stay
- Blood transfusion rates

Balancing Measures:

- Return to the Emergency Department/Urgent Care for anemia related concern within 72 hours
- Iron infusion reactions

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Clinical Pathway Development

This clinical pathway was developed using the process described in the NCH Clinical Pathway Development Manual Version 6, 2022. Clinical Pathways at Nationwide Children's Hospital (NCH) are standards which provide general guidance to clinicians. Patient choice, clinician judgment, and other relevant factors in diagnosing and treating patients remain central to the selection of diagnostic tests and therapy. The ordering provider assumes all risks associates with care decisions. NCH assumes no responsibility for any adverse consequences, errors, or omissions that may arise from the use or reliance on these guidelines. NCH's clinical pathways are reviewed periodically for consistency with new evidence; however, new developments may not be represented, and NCH makes no guarantees, representations, or warranties with respect to the information provided in this clinical pathway.

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