ED GUIDELINE

ANEMIA IN PATIENTS WITH HEAVY MENSTRUATION

Children's MINNESOTA

Aim: To standardize the evaluation and management of patients with anemia and menstruation.

Stable patient presents with anemia and reports current or historical heavy menstrual bleeding (7-2-1 definition and differential in note 1)
Patient does not need to be currently menstruating to use this guideline.

Nursing: If bleeding, give patient new pad/tampon/chux to start quantification of bleeding
Provider: Complete H&P. Physical Exam Notes: always perform external GU exam. Consider pelvic exam (e.g. if sexually active)
Is the patient actively bleeding?

EXCLUSION GUIDELINES

Patients **excluded** from this guideline:

- Critically ill
- Have a known bleeding diathesis. In this case, consult hematology and refer to patient's chart for their individualized treatment plan.
- Anemia is due to a pathology other than abnormal uterine bleeding (e.g. due to abortion, trauma, foreign body)

Table 1: OCP and TXA dosing for anemic patients with heavy menstruation

	OCP: Use standard dose combination pill (30 – 35 mcg ethinyl estradiol) such as Sprintec, #84 pills, 1 refill *(See note 2 for contraindications)*	**Oral Tranexamic Acid (TXA),** #30 pills, 1 refill *(See note 3 for contraindications)*
Patient actively menstruating	IF dosing with TXA (*preferred*): Sprintec BID x 14 days, then 1 pill PO qday **OR** Monotherapy (e.g. *TXA unavailable or contraindicated)*:1 pill TID until bleeding stops, then BID x 14 days, then taper to 1 pill PO qday	1300 mg PO TID x 5 days if >40 kg or 650 mg PO TID x 5 days if <40 kg
Patient not currently menstruating, but Hgb <10	Prescribe OCP 1 pill PO qday OR recommend close PCP follow up for menstrual management.	Not indicated

No

Yes

- Give fluid bolus and obtain labs
- Promptly start IV Tranexamic acid (10 mg/kg IV Q8H, max 1g/dose) and oral birth control (35 mcg ethinyl estradiol PO BID) *(see Notes 2 and 3 for contraindications to Tranexamic acid and estrogen).* Consider prn Zofran when prescribing OCP.

Laboratory work-up:

- Pregnancy test
- CBC with Diff, Type and Screen, Iron Profile and Ferritin
- PT, PTT, Fibrinogen, von Willebrand screen, platelet function analysis
- Other labs to consider: CMP, TSH with FT4 reflex, STI screening (Trich, GC/chlamydia)
- If history suggests PCOS (See Note 4), also obtain: Total and free testosterone

Meets admission criteria?

- Patient requires specialty consultation to address underlying cause of bleeding
- Needing pRBC transfusion, i.e. if Hgb <7 and asymptomatic or Hgb <8 with symptoms of anemia (see Note 5) --> ***expedite admission***
- **Hgb < 8 ,** i.e. requiring IV iron
- **Hgb 8–10** with ongoing bleeding, unstable VS, persistently symptomatic, concerns about adherence to therapy, or need for prompt IV iron (e.g. already failed outpatient oral iron)
- Barrier to outpatient management or ED preference

No

Yes

Admit to hospitalist service (hospitalists will consult Gynecology)
OR
If unstable VS: admit to PICU

See inpatient pathways on page 2-3 for post-admission management.

ED DISCHARGE CONSIDERATIONS:

- See **table 1** for OCP and TXA recommendations at discharge
- Discharge with **iron supplementation:** ferrous sulfate 325 mg (i.e. 65 mg of elemental iron) qday, 3 refills; (if not tolerated, see note 6 for oral iron alternatives) and PRN **ondansetron**
- Place referral order for follow up in 2-3 weeks with Gyn clinic (note 8). If actively bleeding, patient should also follow up in 3-5 days with PCP for bleeding assessment and CBC
- Patient to minimize aspirin/NSAIDs until bleeding diathesis ruled out; may prescribe celecoxib for pain or cramping
- Review risks of thrombosis with meds and signs/sx of VTE

INPATIENT GUIDELINE

ANEMIA IN PATIENTS WITH HEAVY MENSTRUATION

Children's MINNESOTA

Aim: To standardize the evaluation and management of patients with anemia and menstruation.

Is the patient actively menstruating?

No → **See p. 3 for inpatient management in the anemic adolescent patient *without* active menstruation**

Yes ↓

Admit using **'Anemia in a patient with Heavy Menstrual Bleeding Admission Order Set'** and **Consult Gynecology,** but defer page to consultant from 00:00 - 07:00 unless patient not responding to therapy

- Strict I/Os including tampon/pad weights
- IV Tranexamic acid (TXA) until bleeding ceases AND oral birth control (*see Notes 2 and 3 for contraindications to Tranexamic acid and estrogen)*
  - **IV TXA:** 10 mg/kg IV (max 1000 mg/dose) Q 6–8 hrs.
  - **OCP:** standard dose combination pill (30–35 mcg ethinyl estradiol) such as Sprintec, 1 pill **BID**
  - Consider anti-emetics (e.g., 2 hours prior to OCP doses)
- **IV Iron:** regardless of whether the patient receives a blood transfusion, iron deficits are usually so great in these patients that a dose of IV iron is advisable (see note 7)
- Avoid aspirin/NSAIDs, may use Celecoxib for pain/cramping.
- Serial CBC/PTT/PTT/fibrinogen depending on rate of bleeding and concern for coagulopathy
- **If Hgb <7 g/dL OR Hgb <8 with symptomatic anemia** (see note 5), **transfuse PRBCs until post-transfusion(s) Hgb >8**
- **Consult hematology if:**
  - Labs suggest bleeding disorder (e.g., **low** von Willebrand)
  - Patient on an anticoagulant medication

Has bleeding slowed or stopped in 12-24 hours?

No →
- Call gynecology and/or hematology for inpatient consult if not already consulted
- Get pelvic ultrasound, if advised by Gyn

Yes →

Discharge criteria:
- Bleeding has slowed/ stopped
- Tolerating PO, follow-up in place, normal vitals and no orthostatic hypotension
- Post-transfusion Hgb should be >8

DISCHARGE CONSIDERATIONS:
- Prescriptions: (See notes 2 and 3 for contraindications)
  - **OCP** (Discharge with 84 tabs, 1 refill): 30–35 mcg ethinyl estradiol (e.g., Sprintec) 1 pill BID x 14 days, then 1 pill PO qday (no placebos)
  - **TXA** tabs (Discharge with 30 tabs, 1 refill): 1300 mg PO TID if >40 kg or 650 mg PO TID if <40 kg. Patient instructions: Continue for 48 hours after bleeding ceases, then stop.
  - **Iron supplementation:** ferrous sulfate 325 mg (i.e. 65 mg of elemental iron) qday, 3 refills; (if not tolerated, see note 6 for oral iron alternatives) and PRN **ondansetron**
- Follow up in 3–5 days with PCP for bleeding assessment and CBC; Place referral order for follow up in 2-3 weeks with Gyn clinic (note 8)
- Patient to minimize aspirin/NSAIDs until bleeding diathesis ruled out, may prescribe Celecoxib for pain or cramping.
- Review risks of thrombosis with estrogen-containing meds and signs/sx of VTE

INPATIENT GUIDELINE

ANEMIA IN PATIENTS WITH HEAVY MENSTRUATION

Children's MINNESOTA

Aim: To standardize the evaluation and management of patients with anemia and menstruation.

Is the patient actively menstruating?

Yes → **See p. 2 for inpatient management in the anemic adolescent patient *with* active bleeding**

No ↓

- Consider starting **OCP if Hgb <10:** standard dose combination pill (30–35 mcg ethinyl estradiol) such as Sprintec, 1 pill **QD** (*see Note 2 for contraindications to estrogen)*
  - Consider anti-emetics (e.g., 2 hours prior to OCP doses)
- **IV Iron:** regardless of whether the patient receives a blood transfusion or has active bleeding, iron deficits are usually so great in these patients that a dose of IV iron is advisable (see note 7)
- **If Hgb <7 g/dL OR Hgb <8 with symptomatic anemia** (see note 5), **transfuse PRBCs until post-transfusion(s) Hgb >8**
- **No need to consult Gynecology inpatient unless specific questions/concerns not addressed on guideline or OCP contraindication** (see note 2)
- **Consult hematology if:**
  - Labs suggest bleeding disorder (e.g., **low** von Willebrand)
  - Patient on an anticoagulant medication

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DISCHARGE CONSIDERATIONS:

- Prescriptions: (See note 2 for contraindications)
  - **Consider OCP if Hgb <10:** (Discharge with 84 tabs, 1 refill): 30–35 mcg ethinyl estradiol (e.g., Sprintec) 1 pill QD (no placebos)
  - **Iron supplementation** (ferrous sulfate 325 mg (65 mg of elemental iron) qday, 3 refills; if not tolerated, see note 6 for oral iron alternatives) and PRN **ondansetron**
- Place referral order for follow up in 2-3 weeks with Gyn clinic (note 8)
- Review risks of thrombosis with estrogen-containing meds and signs/sx of VTE

CLINICAL GUIDELINE

ANEMIA IN PATIENTS WITH HEAVY MENSTRUATION

Children's MINNESOTA

Aim: To standardize the evaluation and management of patients with anemia and menstruation.

NOTE 1:
Definition of heavy menstruation (7-2-1 rule): cycles lasting longer than 7 days, changing a pad/tampon ≤ 2 hours, or passing blood clots > 1 inch (i.e. size of a quarter)
Differential for heavy vaginal bleeding in an adolescent
- **Endocrine:** anovulatory bleeding, PCOS, thyroid disease, other
- **Infection:** cervicitis, PID
- **Bleeding Disorders:** von Willebrand disease, platelet dysfunction, thrombocytopenia, factor deficiency
- **Pregnancy:** abortion, ectopic, gestational trophoblastic dz
- **Uterine:** IUD, myoma, polyp, cancer
- **Medication:** anticoagulants, depot medroxyprogesterone
- **Other:** trauma/assault, foreign body

NOTE 2: Contraindications to estrogen therapy:
- History of migraine with aura
- Personal history of VTE/CVA or known clotting disorder
- Malignant hypertension (SBP >160 mmg Hg, DBP >100 mm Hg)
- Lupus with positive or unknown anti-phospholipid antibodies
- Current or history of certain heart conditions and certain liver diseases (refer to CDC's US Medical Eligibility Criteria for Contraceptive Use)
- Post-partum (<21 days)

If estrogen contraindicated, start Medroxyprogesterone:
- If actively bleeding: start 20 mg Q8H, then consult Gynecology (after 7AM, unless patient not responding to therapy)
- If not actively bleeding: consult Gynecology about dosing (after 7AM)

NOTE 3: Contraindications to tranexamic acid
- Thrombotic/thromboembolic disease (discuss with Hematology)
- Hematuria

NOTE 4: Features that suggest PCOS
Hirsutism, acne, obesity, acanthosis nigricans, oligo/amenorrhea >2 years after menarche

NOTE 5: Symptoms/signs of anemia may include:
Headache, fatigue, dyspnea, dizziness, chest pain, tachycardia

NOTE 6: Oral Iron Alternatives
If ferrous sulfate is not tolerated, consider switching to another form of iron to improve compliance. However, most insurances will not cover these iron alternatives and some pharmacies do not carry all of them. Dose based on elemental iron. Alternative iron formulations may cause less GI upset compared with traditional iron salts (ferrous sulfate).
- Celebrate tabs are flavorful iron tablets that can be purchased over the counter or online (e.g. Amazon). It contains ferrous fumarate and Vitamin C to enhance absorption.
- Novaferrum is a better tasting liquid. It contains polysaccharide-iron complex that can be gentler on the stomach.
- Though gummy iron supplements are palatable, the iron content may be quite low, so be sure dosing is adequate (i.e. may require multiple gummies/day)
- Heme-iron formulations, such as Proferrin, may cause less GI upset and provide more significant correction of iron deficiency than iron salts. Proferrin ES can be purchased over the counter (e.g. Amazon) and Proferrin Forte can occasionally be processed through insurance.

NOTE 7: Guidance on IV Iron
For patients on this guideline, IV Iron Dextran is preferred over IV Iron Sucrose (Venofer) due to its higher iron content. While it takes one dose of IV Iron Dextran to replete a patient's iron deficit, it can take 5 or more IV Iron Sucrose (Venofer) doses.
- The sensation of warmth and flushing with IV iron is NOT an allergic reaction.
- Order IV Iron Dextran using Children's "Iron Dextran (Infed) Powerplan" which has a calculator built in for dosing based on Hg (if transfused, use post-transfusion Hg), no max dose
- Iron dextran is preferably delivered during the daytime (due to nursing requirements while monitoring for a reaction).
- IV Iron Sucrose (Venofer) may be favored if discharge is imminent as Iron Dextran takes at least six hours to administer compared to 90 minutes for IV Iron Sucrose (Venofer)
- IV Iron Sucrose (Venofer) dosing: 5 mg/kg, max 300 mg/dose, run over 90 min and consider premed with Zofran)

NOTE 8: Gynecology Clinic Follow-up
- Order "Children's Gynecology Clinic Referral" and write into referral comments that f/u can be at Heme/Gyn or Gyn clinic AND
- Send a Cerner Message to the "Gynecology Scheduling Pool" to expedite follow-up

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