

Table II. Treatment Options Comparison Table

HORMONES	DOSING	ADVANTAGES	DISADVANTAGES	SIDE EFFECTS COMMON	SIDE EFFECTS RARE
IV ESTROGEN	25 mg q 4-6 hrs (Use with antiemetic)	Rapid; Allows NPO for CV unstable patient	Nausea	Nausea	TE risk if used > 24 hrs
ORAL ESTROGEN	(Premarin) 2.5 mg q6 hrs for 21 days	None- OCP add progestins which are eventually needed	Must add medroxyprogesterone 10 mg qd days 17-21; Easier to use OCP; Rarely used method	Nausea	Sublingual route 1-2 mg estradiol may provide alternative less thrombogenic method
ORAL CONTRACEPTIVE PILLS (OCP)	Dependent on severity; As much as 1 tab every 4-6 hrs until bleeding slows; Must taper over several weeks	Works just as rapidly as IV estrogen; Contains progestin which is needed for endometrial stabilization ; May extended cycle	No strong evidence to support superiority of this method over others; Future adherence problems with OCP for both AUB & contraception	Nausea, fluid retention, breast tenderness, mood changes, skin changes, headaches	Relative risk of TE risk increases (including DVT, PE, CVA, MI) ; But still rare event in most otherwise healthy adolescents (See Table III on risk of TE for daily OCP)
ORAL PROGESTIN PILLS (POP)	Medroxyprogesterone or norethindrone 5-10 mg as often as 4-6 hrs with taper over several weeks	Used for acute control of bleeding in patients with estrogen contraindications; Less thrombogenic potential	Less predictable and less rapid in its control of bleeding; Does not provide contraception	Nausea and vomiting at high doses but less so than estrogen; Transient and minor: fluid retention, breast tenderness, mood changes, skin changes, headaches	

OTHER HORMONES	DOSING	ADVANTAGES	DISADVANTAGES	SIDE EFFECTS COMMON	SIDE EFFECTS RARE
Levonorgestrel IUD (LNG-IUD)	20 mcg daily up to 5 years	Long acting; Minimizes adherence problems; Good continuation rates; Low systemic dose (if at all) of hormones; Superior contraceptive efficacy—<1% failure rate	Requires procedure to insert; Expensive up front costs	50% amenorrhea in 1 yr, 80% in 2 yrs; 90% reduction in menstrual blood flow; Cramping and irregular bleeding months 1-6; 5% expulsion	Expulsion, infection, uterine perforation at insertion
Depot Provera (Medroxyprogesterone acetate)	150 mg IM q 12 weeks	Contraceptive benefits; Requires less user involvement; May use up to 100 mg daily in urgent situations where estrogen is contraindicated	Injection; Progestins less predictable control of bleeding than estrogen ; Requires medical visit for long term use; More effective than OCP, patch or ring for birth control	30-60% with irregular spotting or bleeding after the initial injection; decreases to 10-20% over 6-12 months; Exacerbates weight gain in obese teens	Hair loss, mood changes; Small loss BMD recovered when discontinued
NuvaRing (15 mcg ethinyl estradiol/120mcg etonorgestrel)	1 ring in vagina for either 3 or 4 weeks	Contraceptive benefits; Low dose systemic hormones with a lot of local effects; May extended cycle	OCP, ring, patch similar contraceptive failure rates of >= 8%	Vaginal discharge	Possibly slightly lower risk TE than OCP
OrthoEvra patch (6000 mcg norelgestromin/ 750 mcg ethinyl estradiol)	1 patch weekly for 3 weeks, then 1 week patch free for menses	Contraceptive benefits; 60% higher area under the curve dose of estrogen; Bypasses GI tract so less nausea	Not recommended for extended cycling	Breast tenderness first 3 months; Skin irritation	
GnRH agonists	Leuprolide Histrelin				
Danazol	200-400 mg PO q 12 hrs				

NON HORMONAL	DOSING	ADVANTAGES	DISADVANTAGES	SIDE EFFECTS COMMON	SIDE EFFECTS RARE
NSAIDS	Naproxen 500 mg PO BID; Ibuprofen 800 mg PO QID	Does not require prescription; Good evidence to support its use	Not useful in patients with platelet and some other bleeding disorders	Indigestion	Gastritis and GI ulceration
Tranexamic acid	1 gm PO q6 hrs or 1300mg PO q8hr days 1-4 of menses	Good evidence to support its use	Not commonly used as first line in US	Indigestion, headache, pain in back and abdomen; sinus symptoms	Do not use if TE risk, active TE, or renal failure
Aminocaproic acid	5 gm PO, Then repeat 1 gm hourly for max of 30 mg daily In urgent situations: may use 4-5 gm IV over 60 min then 1gm/hr for 8 hrs or max of 30gm/day	Useful for bleeding disorders, including Von Willebrand disease	Side effects common and undesirable in many teens	Nausea, cramps, diarrhea, headache, dizziness	TE Leuko/thrombocytopenia; Rapid IV infusion may cause CV disturbance
Desmopressin	150 mcg in each nares, May repeat in 8-24 hrs	Useful for bleeding disorders, including Von Willebrand disease	Less effective than tranexamic acid		
Factor Concentrates		For patients with known factor deficiencies			
Dilation & Evacuation/Curettage		Rarely used in adolescence	Urgent uterine evacuation not responding to hemodynamic support & aggressive hormonal treatment; Does not impact future fertility		
Endometrial ablation Uterine artery embolization Hysterectomy		Rarely used in adolescence	Only for lifesaving last resort ; May decrease future fertility		