

## Evidence Tables

Presence of disorders of hemostasis in women with acute uterine bleeding <sup>a</sup>							
Meta-analysis author and year	Assessed quality?	Included studies	Excluded studies	Number of subjects with menorrhagia	Statistical model	Incidence of vWD in controls	Incidence of vWD in menorrhagia patients, % (95% confidence interval)
Shankar, <sup>1</sup> 2004	Yes	11	1	988	Not specified	Not reported	13 (11.0-15.6)

<sup>a</sup> This table includes meta-analyses of studies evaluating for the presence of disorders of vWD in women with "menorrhagia," which is thought to include women with acute uterine bleeding. There were no identified studies specifically for acute uterine bleeding as described in this guideline.

vWD = von Willebrand disease

1. Shankar M, Lee CA, Sabin CA, Economides DL, Kadir RA. von Willebrand disease in women with menorrhagia: a systematic review. BJOG 2004 Jul;111(7):734-40. DOI: <http://dx.doi.org/10.1111/j.1471-0528.2004.00176.x>

Cross-sectional studies evaluating for the presence of multiple disorders of coagulation or platelet function in women with "menorrhagia" (heavy menstrual bleeding)							
Author and year	Number of subjects with menorrhagia	Controls	vWD, no. (%)	Factor deficiencies, no. (%)	Platelet abnormality, no. (%)	Combined/ other, no. (%)	Overall incidence, no. (%)
Dilley, <sup>1</sup> 2001	121	Yes	8 (6.6)	2 (1.6)	3 (2.5)	Not reported	13 (10.7)
Kadir, <sup>2</sup> 1998	150	No	18 (12.0)	4 (12.0)	1 (0.7)	3 (2.0)	26 (17)
James, <sup>3</sup> 2004	108	Yes	7 (6.0)	Not reported	17 (15.7)	4 (3.7)	28 (25.9)
Philipp, <sup>4</sup> 2005	115	No	7 (6.1)	5 (4.3)	44 (3.3)	Not reported	47 (40.9)

vWD = von Willebrand disease

- Dilley A, Drews C, Miller C, et al. von Willebrand disease and other inherited bleeding disorders in women with diagnosed menorrhagia. *Obstet Gynecol* 2001 Apr;97(4):630-6. DOI: [http://dx.doi.org/10.1016/S0029-7844\(00\)01224-2](http://dx.doi.org/10.1016/S0029-7844(00)01224-2)
- Kadir RA, Economides DL, Sabin CA, Owens D, Lee CA. Frequency of inherited bleeding disorders in women with menorrhagia. *Lancet* 1998 Feb 14;351(9101):485-9.
- James AH, Lukes AS, Brancazio LR, Thames E, Ortel TL. Use of a new platelet function analyzer to detect von Willebrand disease in women with menorrhagia. *Am J Obstet Gynecol* 2004 Aug;191(2):449-55. DOI: <http://dx.doi.org/10.1016/j.ajog.2004.03.009>
- Philipp CS, Faiz A, Dowling N, et al. Age and the prevalence of bleeding disorders in women with menorrhagia. *Obstet Gynecol* 2005 Jan;105(1):61-6. DOI: <http://dx.doi.org/10.1097/01.AOG.0000148889.15061.fb>

#### Hysteroscopy for Evaluation of Patients with Acute Uterine Bleeding

There were no identified studies specifically for acute uterine bleeding as defined in this guideline.

#### Excluded Studies

Nearly all results from the search strategy did not include articles that dealt with acute abnormal uterine bleeding, and these comprised all but a few of the excluded "studies" obtained in the evidence search. The systematic review of cross-sectional studies on the incidence of disorders of systemic hemostasis included all those studies that were found in the evidence search. Consequently, the individual studies were not listed separately.

Gonadal steroid therapy for acute uterine bleeding				
Systematic reviews/meta-analyses of randomized trials				
None were identified.				
Author and year	Intervention	Comparison	Study characteristics and results	Conclusions
Randomized Trials (Class 1b)				
DeVore, <sup>1</sup> 1982	Intravenous CEE, 25 mg IV every 4 hours	Placebo	Double blinded N = 32 Primary outcome: Bleeding at 5 hours Bleeding stopped in 72% of CEE group and 38% of controls	CEE is more effective than placebo in patients regardless of endometrial histology Relatively small sample size is a reason for caution in generalizing results
Munro, <sup>2</sup> 2006	Oral MPA, 60 mg 3 times daily for a week, then 20 mg/day for 3 weeks	COC, 35 µg ethinyl estradiol + 1 mg norethindrone; 1 pill 3 times daily for 1 week, then once daily for 3 weeks	Open label N = 40; 33 evaluable Primary outcome: Avoidance of operative management Avoidance of surgery in 100% of MPA group and 95% of COC group Mean time to cessation of bleeding was 3 days in each group	Each intervention is equally effective for the population selected Similar low incidence of side effects in each group Relatively small sample size
Case Series (Class 6)				
Aksu, <sup>3</sup> 1997	Oral MPA, 60-120 mg on Day 1 and 20 mg/day for next 10 days	None	N = 24 adolescents Bleeding stopped in 25% in first 24 hours, and in 29.2%, 20.8%, and 25% in the second, third and fourth days, respectively	Oral MPA may be effective for treatment of acute uterine bleeding Lack of a comparison group impairs ability to distinguish results from those of placebo or other interventions
Uterine Tamponade Case Reports and Series (Evidence Classes 6-7)				
Goldrath, <sup>4</sup> 1983	Intrauterine placement of 30-mL Foley balloon for hours to 2 days	None	N = 20 adolescents "Successful" in 17 and "partially successful" in 2 patients Failure in 1	Intrauterine tamponade with a Foley balloon may be effective in selected patients with acute uterine bleeding Lack of a comparison group impairs ability to distinguish results from those of placebo or other interventions
Humani, <sup>5</sup> 2010	Intrauterine balloon tamponade as a treatment of ITP-induced severe uterine bleeding	None	N = 2; aged 19 and 36 years Each with longstanding diagnosis of ITP Both successful short term	Conclusions difficult with case reports Balloon tamponade a reasonable option in women with acute abnormal uterine bleeding
Nishino, <sup>6</sup> 2013	Effective salvage of acute massive uterine bleeding using intrauterine balloon tamponade in a uterine adenomyosis patient receiving dienogest	None	N = 1 Patient with adenomyosis using a potent progestin	Only a case report, but supports consideration of this approach in acute abnormal uterine bleeding
Hossain, <sup>7</sup> 2012	Successful management of acute catastrophic juvenile vaginal bleeding in Glanzmann thromboasthenia by uterine tamponade	None	N = 1	First report of balloon tamponade in a perimenarcheal patient with acute catastrophic bleeding

CEE = conjugated equine estrogens; COC = combination oral contraceptives; ITP = immune thrombocytopenic purpura; IV = intravenous; MPA = medroxyprogesterone acetate.

- DeVore GR, Owens O, Kase N. Use of intravenous Premarin in the treatment of dysfunctional uterine bleeding—a double-blind randomized control study. *Obstet Gynecol* 1982 Mar;59(3):285-91.
- Munro MG, Mainor N, Basu R, Brisinger M, Barreda L. Oral medroxyprogesterone acetate and combination oral contraceptives for acute uterine bleeding: a randomized controlled trial. *Obstet Gynecol* 2006 Oct;108(4):924-9. DOI: <http://dx.doi.org/10.1097/01.AOG.0000238343.62063.22>
- Aksu F, Madazli R, Budak E, Cepni I, Benian A. High-dose medroxyprogesterone acetate for the treatment of dysfunctional uterine bleeding in 24 adolescents. *Aust N Z J Obstet Gynaecol* 1997 May;37(2):228-31. DOI: <http://dx.doi.org/10.1111/j.1479-828X.1997.tb02260.x>
- Goldrath MH. Uterine tamponade for the control of acute uterine bleeding. *Am J Obstet Gynecol* 1983 Dec 15;147(8):869-72.
- Hamani Y, Ben-Shachar I, Kalish Y, Porat S. Intrauterine balloon tamponade as a treatment for immune thrombocytopenic purpura-induced severe uterine bleeding. *Fertil Steril* 2010 Dec;94(7):2769.e13-5. DOI: <http://dx.doi.org/10.1016/j.fertnstert.2010.04.058>
- Nishino K, Hayashi K, Chaya J, Kato N, Yamamuro O. Effective salvage of acute massive uterine bleeding using intrauterine balloon tamponade in a uterine adenomyosis patient on dienogest. *J Obstet Gynaecol Res* 2013 Mar;93(3):738-41. DOI: <http://dx.doi.org/10.1111/j.1447-0756.2012.02005.x>
- Hossain N, Shamsi TS, Feroz A. Successful management of acute catastrophic juvenile vaginal bleeding in Glanzmann's thromboasthenia by uterine tamponade: A case report and review of the literature. *Case Rep Hematol* 2012;2012:530908. DOI: <http://dx.doi.org/10.1155/2012/530908>