

## Case Report

# Management of abnormal uterine bleeding in perimenarche: diagnostic challenges

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## Abstract

An 18-year-old girl—virgin, Indonesian, Bataknese, Moslem, student—was admitted to the Emergency Department of Haji Adam Malik Hospital, Medan, and presented with prolonged menstruation for the past 3 years, volume 5–6 pads/day, lasting for  $\pm 3$  weeks, dark red, clotting (+), regular menstrual cycles. Vital signs were within normal limits. Physical examination revealed pale inferior conjunctiva palpebral and soft abdomen, with no palpable mass. As the patient was unmarried, speculum and vaginal examinations were not performed. This is apparently a sensitive issue as most eastern countries (including Indonesia), especially Muslim countries, highly value virginity. As the patient refused, a rectal toucher was also not used. Sonographic imaging revealed an anteflexed uterus measuring  $7.1 \times 4.52 \times 3.1$  cm and endometrial thickness measuring 1.54 cm, suggestive of thickening endometrial wall. Both ovaries were normal sized. Based on these findings the patient was diagnosed with abnormal uterine bleeding and was subsequently administered with oral progesteron based on the recommended dose and duration of administration for three cycles.

**KEY WORDS:** Abnormal uterine bleeding, perimenarche, uterine wall thickening

## Introduction

Abnormal uterine bleeding (AUB) is defined as uterine originated abnormal bleeding (quantity, frequency, and duration) occurring during or between menstrual cycles, the symptoms of which occur due to altered functional mechanism action of hypothalamic–pituitary–ovarian–endometrium axis without any organic reproductive abnormalities.<sup>[1,2]</sup>

AUB is the most common gynecologic symptom in reproductive-aged women in outpatient clinics with prevalence rates of 11 out of 13 women. This figure increases with age, reaching 25% in reproductive-aged women,<sup>[3]</sup> which is shown in Figure 1.<sup>[4]</sup>

AUB may be caused by estrogen withdrawal, foreign bodies, infection, sarcoma botryoides, ovarian tumor, trauma, and so on.<sup>[5]</sup>

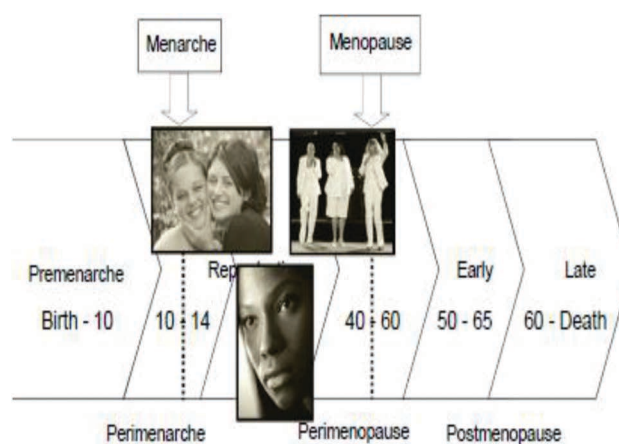
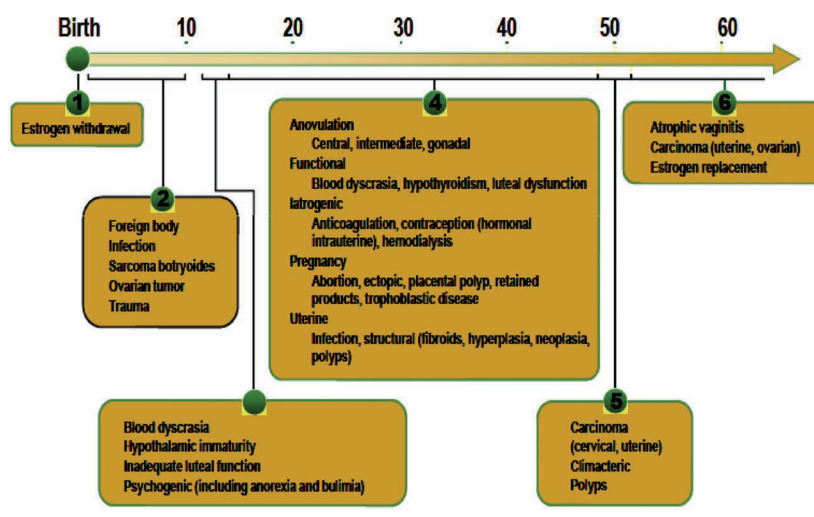


Figure 1: Population of abnormal uterine bleeding.<sup>[4]</sup>

Three major categories of AUB have been proposed. They are the following:

Estrogen breakthrough bleeding: There will be intermittent spotting if estrogen level is low. But if estrogen level is high and for a long term, it will stimulate endometrium to proliferate continuously causing endometrium hyperplasia and eventually substantial bleeding.

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Shwayder JM. *Obstet Gynecol Clin North Am.* 2000;27(2):219-234.

Figure 2: Etiology of abnormal uterine bleeding.<sup>[5]</sup>

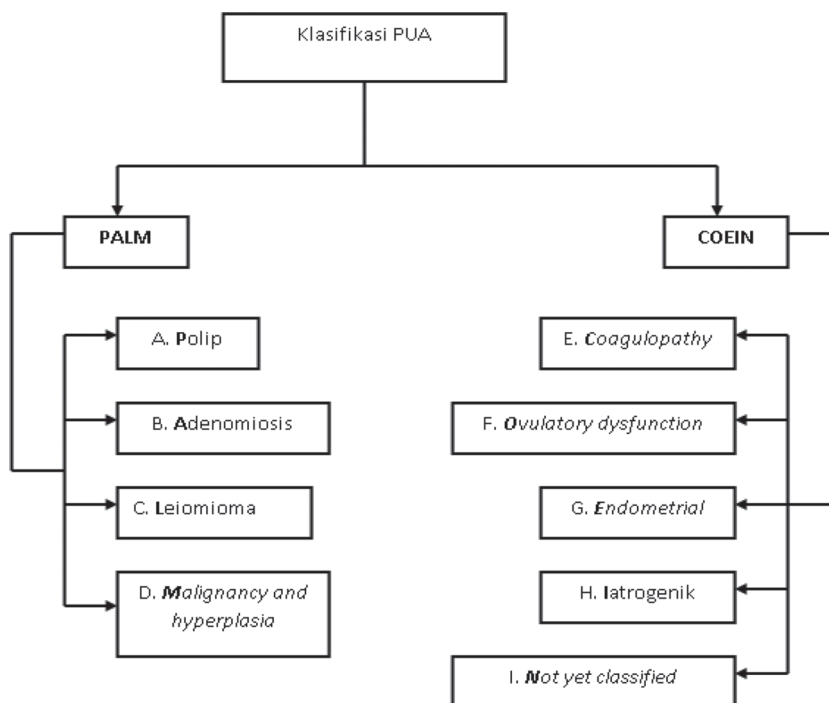


Figure 3: FIGO classification system 2011: abnormal uterine bleeding.<sup>[4]</sup>

Estrogen withdrawal bleeding: Bleeding occurring after bilateral oophorectomy, radiation at mature follicles, or after cessation of estrogen therapy.

Progestin breakthrough bleeding: Bleeding occurring due to high progesterone and estrogen ratio. Lack of estrogen and progesterone therapy will induce spotting with variable

duration. This bleeding is associated with the consumption of progestin, an oral contraceptive pill (OCP) for long periods; Norplant; and Depo-Provera.<sup>[1]</sup>

Etiology of Abnormal Uterine Bleeding based on age can be seen in Figure 2. FIGO in 2011 has proposed a classification for AUB, which can be seen in Figure 3.

### Abnormal Uterine Bleeding in Perimenarche

Menstrual abnormalities are one of the major clinical manifestations in adolescents. Regular ovulation of menstrual cycles in adolescents occur every 21–35 days and last until 7 days, with mean blood loss 25–69 mL. AUB in perimenarche can be caused by coagulopathy, immaturity of hypothalamus, insufficient luteal function, psychogenic disorder (such as bulimia and anorexia), and also ovarian tumor.<sup>[6]</sup>

Hereditary coagulopathy disorder is often a cause of AUB in adolescents. Von Willenbrand disease is the first etiology of AUB. Besides, AUB in perimenarche can also be caused by endocrinopathy (the most common example is thyroid disorder), systemic disease (such as blood dyscrasias: Immune Thrombocytopenic Purpura (ITP) and leukemia and chronic renal disease), and medicines (corticosteroids, psychotropic drugs, anticoagulants, and herbs and plants: soy, ginseng, ginko).<sup>[7,8]</sup> Polycystic ovarian syndrome (PCOS) is one of the causes of AUB in perimenarche. Clinical manifestations of PCOS in adolescents are decreased birth weight, premature puberty, irregular menstruation (oligomenorrhea), hyperandrogen (hirsutism, acne, male-type baldness), obesity, family history of PCOS, diabetes mellitus type 2, premature cardiovascular disease.<sup>[6]</sup> While there are few uterine bleeding causes in adolescents, most probable cause is AUB due to immature hypothalamic–pituitary–ovarian axis (HPO), causing irregular anovulatory cycle and bleeding. Before assuming HPO axis, clinicians must exclude more serious disorders.<sup>[9]</sup> Besides PCOS, AUB is often caused by endometrial hyperplasia. It presents as AUB, often asymptomatic. Ultrasonography (USG) reveals endometrial hyperplasia. Endometrial hyperplasia diagnosis can be considered in patients complaining prolonged uterine bleeding or frequent bleeding.

When adolescents complain about AUB, history of menstruation must be asked, including menarche age, duration, and the amount of uterine bleeding. Stomach cramps is a useful information. History of bleeding disorders in family and menstruation are very crucial.<sup>[9]</sup> Physical examination must encompass substantial signs and evaluate hyperandrogenism and bleeding signs. Sexual maturity scale assessment must be determined according to patients' age. Nipple should be assessed for discharge. For majority of patients, mainly those who are not sexually active, internal pelvic examination will not be needed to evaluate pelvic anatomy. For those patients, USG might be enough for evaluating pelvic pathology. Laboratory assessment in adolescents with AUB also include pregnancy test, regardless of sexual activity history. After excluding pregnancy, practitioners must consider additional tests to make differential diagnosis based on clinical manifestation. Complete blood count might help for evaluating anemia. American College of Obstetricians and Gynecologists (ACOG) recommend that all patients younger than 18 years with AUB must be screened for coagulation disorders, particularly von Willebrand disease, because this disease has 1% of prevalence and is the most common diseases causing menorrhagia in perimenarche.

Management of the problem in adolescents must be initiated with looking for the cause, making pregnancy assessment, and blood coagulation disorders. If not one of these, then give OCP or norethindrone acetate therapy 5 g, as much as 3 times a day for 7 days, and afterward reduce dosage until 4 times in 3 weeks.<sup>[7]</sup>

### Case Report

An 18-year-old female, virgo, Bataknese, Islam student admitted to the Emergency Department of Haji Adam Malik Hospital, Medan, with major complaint of prolonged menstruation for approximately 3 years, with a volume resulting in 5–6 tampons/day, lasted for  $\pm 3$  weeks, reddish black, clotting (+), regular menstruation cycle. Menarche at 13 years. Vital sign was normal. During general physical examination, pale conjunctiva palpebral inferior was noted and abdomen was lax. There were no symptoms of hyperandrogenic access. Abdominal wall was lax, no palpable mass was found. At gynecologic examination, clinician did not perform speculum and vaginal examinations because the patient was not married. In Indonesia and other countries with Moslem majority, with Eastern cultures and customs, gynecologic examination including bimanual and speculum examinations are taboo and become controversial issue. Rectal toucher was not used in this case because the patient and her family refused it.

USG demonstrated normal-size anteflexi uterus  $7.1 \times 4.52 \times 3.1$  cm with endometrial thickness 1.54 cm, suggestive of thickening endometrial wall.

From laboratory in Emergency Department:

Hemoglobin: 5.4 g/dL, Ht: 33.40%, Leucocyte:  $10.760/\text{mm}^3$ , Thrombocyte:  $249.000/\text{mm}^3$ , Ad Random Blood Glucose: 109 mg/dL.

From anamnesis, physical examination, limited gynecologic examination, laboratory test results, and other investigations, thickening uterine wall was noted. Then, AUB M/AUB O/AUB M-O was performed as differential diagnosis for this patient, based on FIGO criteria to diagnose uterine bleeding disorder (AUB). This patient was given Progestin derivate, which is norethsterone (norethindron) 5 mg  $2 \times 1$  tab for 10 days. Repeated again starting at day 16–25, in the next cycle with the same dose, then evaluated for 3–6 months.

### Discussion

AUB is the most common gynecologic symptom in reproductive-age women at outpatient clinics. This occurs in 11 of 13 reproductive-age women. Its prevalence proportionally increases with age, reaching 25% in reproductive-age women.

The main cause of AUB in adult is endometrial hyperplasia. Endometrial hyperplasia presents as AUB, often asymptomatic. USG reveals endometrial hyperplasia. Endometrial hyperplasia diagnosis can be considered in patients complaining prolonged uterine bleeding or frequent bleeding.

When adolescents complain about AUB, history of menstruation must be asked, including menarche age, duration, and amount of uterine bleeding. Stomach cramps is a useful information. History of bleeding disorders in family and menstruation are very crucial. However, a comprehensive physical examination was not possible in this case. In Indonesia, where the majority of its population are Muslim, gynecological examination is a taboo for virgin or unmarried women. So in this case, endometrial biopsy was not performed to see histopathologically what caused thickening in endometrial wall as seen in USG pictures.

AUB in perimenarche can be caused by coagulopathy, immaturity of hypothalamus, insufficient luteal function, psychogenic disorders (like bulimia and anorexia), and also ovarian tumor.<sup>[6]</sup> Hereditary coagulopathy disorder is often an AUB cause in adolescents. Von Willenbrand disease is the first etiology of AUB. Besides, AUB in perimenarche can also be caused by endocrinopathy (the most common example is thyroid disorder), systemic disease (such as blood dyscrasias: ITP and leukemia and chronic renal disease), medicines (corticosteroids, psychotropic drugs, anticoagulants, and herbs and plants: soy, ginseng, ginko).<sup>[7,8]</sup>

In this case, the diagnosis probably is AUB M based on 2011 FIGO criteria about classification of AUB, with some obstacles to establish this diagnosis due to customs and cultures. Hormonal therapy with norethisteron/norethindron is the right choice, because patient was not married and did not want to get pregnant, and after therapy menstruation became normal again.

## Conclusion

Early diagnosis and right treatment are essential for AUB patients so that therapy will be given correctly. Customs, culture, and religion sometimes can be a challenge to conduct examinations. Despite a cure, the diagnosis and treatment sometimes raises controversy.

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