

DESCRIPTION ON THE PATIENTS' CHARACTERISTICS OF ABNORMAL UTERINE BLEEDING BASED ON STRUCTURAL AND NON-STRUCTURAL ETIOLOGY

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ABSTRACT

Abnormal uterine bleeding (AUB) is a problem frequently experienced by women in the world. AUB is not a disease but a symptom that indicates a problem in the female reproductive system or organs. The purpose of research was to determine the description of the patients' characteristics of AUB with structural (PALM) and non-structural (COEIN) etiologies. This analytical description study used medical record data from AUB patient in Dr. Soetomo District General Hospital Surabaya in January-December 2019. The number of samples of this study was 65 data, with 36 data for structural etiologies (PALM) and 29 data for non-structural etiologies (COEIN). Characteristic of patient were seen from 3 categories, i.e., age, parity status, and body mass index (BMI) from 2 etiological categorie

INTRODUCTION

The prevalence of cases of abnormal uterine bleeding (AUB) has occurred in most parts of the world. According to European epidemiological data in 2017, the prevalence of AUB ranges from 14-35%. In addition, according to The International Federation of Gynecology and Obstetrics (FIGO) in 2018 taken from Singapore, Rome, and Vancouver, the prevalence of AUB is 3-30% (Munro et al., 2018).

Although AUB is not a disease, it is a sign of a problem with the female system or organ, which will impact and affect the life cycle of women either physically, psychologically, or economically. Brenda F. Narice stated that AUB will generally affect around 14-25% in women of reproductive age (Narice, Delaney and Dickson, 2018).

Data from the 2014 national heavy menstrual bleeding audit by the Royal College of Obstetricians & Gynecologists found that there were 15812 HMB patients who came to the clinic in approximately one year, 83% of whom stated that they were uncomfortable with the situation. A study in the US states that one AUB patient can experience financial losses of >2000 dollars per year due to not being able to work plus ongoing household expenses (The Royal College of Obstetricians and Gynecologists, 2014; Whitaker and Critchley, 2016).

Abnormal uterine bleeding (AUB) is bleeding that is characterized by changes in the menstrual cycle, either from the interval or cycle length, as well as the duration of bleeding that is often found in women. The etiology of AUB itself is divided into two, i.e., structural and non-structural causes. Structural etiology is the cause of AUC due to anatomic abnormalities that can be evaluated or measured visually using several combinations of imaging and histopathological techniques, which are classified into structural etiology as polyps, adenomyosis, leiomyoma, malignancy

and endometrial hyperplasia or abbreviated as PALM (Singh et al., 2013; Munro et al., 2018).

Non-structural etiology is the cause of AUB that cannot be seen or measured by imaging or histopathology. Things that are included in the non-structural etiology are coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, and not otherwise classified or not classified as COEIN (Munro et al., 2018).

There are several factors that influence the risk of AUB, according to several studies and several theories; characteristics of age, parity status, and body mass index (BMI) can affect the increase in the incidence of AUB. At certain ages, there can be an increase in the risk of getting AUC including during perimenopause and reproductive age, because at that age there can be several possibilities for AUB such as structural abnormalities or hormonal disorders that will affect the menstrual cycle (Marpaung, 2019).

Parity status in women is also one of the factors that influence the incidence of AUB. Nulliparous women will have a higher risk of AUB compared to multiparous women, because nulliparas do not experience a decrease in ovarian function so that hormone production related to endometrial growth continues to be produced and increases the risk of structural abnormalities, which will also affect bleeding patterns in these women (Marpaung, 2019).

Body mass index (BMI) in the obese category can increase the risk of AUB, because in obese women there is an increase in the aromatization mechanism of fat tissue so that estrogen production also increases which can cause excessive proliferation of the uterine wall (Hugh S. Taylor, MD.; Lubna Pal., MBBS, 2011).

Preventive action or knowing earlier the risk factors for AUB will help reduce the incidence of AUB, this will also minimize the adverse impact on AUB patients themselves, so it is important to know how the characteristics of

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AUB patients are as an illustration and educational material for the community so they can pay more attention to factors -factors that can increase the risk of AUB and can be avoided.

METHOD

This retrospective descriptive study used secondary data instruments of medical records of AUB patients at RSUD DR Soetomo Surabaya for the period January-December 2019. The variables of this study were age, parity status, body mass index (BMI), and etiology of PUA (Structural and Non-Structural). The population of this study was the patients diagnosed with abnormal uterine bleeding (AUB) at RSUD DR Soetomo Surabaya for the period January-December 2019. The sample of the study was AUB patients at the obstetrics polyclinic of RSUD Dr Soetomo Surabaya who met the inclusion criteria. The sample size obtained was 65 data. The inclusion criteria were patient medical record and the patient diagnosed with abnormal uterine bleeding (AUB) at Dr Soetomo Hospital Surabaya for the period January-December 2019 while the exclusion criteria were incomplete medical record, damaged medical records, and pregnant or postnatal patients.

The study instrument used was the patient’s medical record. The sampling technique was done by purposive sampling, i.e., using the medical records of patients who were treated with a diagnosis of abnormal uterine bleeding at Dr. Hospital. Soetomo Surabaya for the period January-December 2019 who met the inclusion criteria. The study was conducted from September 2019 to July 2020. The analysis was carried out using Microsoft Excel 2016.

RESULT AND DISCUSSION

Table 1 Etiology of AUB

Etiology of PUA	Total	
	F	%
Struktural (PALM)	36	55%
Non-Struktural (COEIN)	29	45%
Total	65	100%

Based on Table 1 regarding the etiologic description of AUB in obstetrical polyclinic patients at RSUD Dr. Soetomo Surabaya, the largest percentage of AUB etiology was structural etiology with a percentage of 55%, while non-structural etiology with 45%.

The results of this study are in line with several opinions and research, such as research conducted by Kanika singh et al from 300 patients: there were 175 patients causing PALM, for the cause of COEIN there were 125 patients. In addition, research at Sumber Waras Hospital Jakarta showed that the main cause of AUB was due to structural abnormalities (Singh et al., 2013; Dewi et al., 2020).

The large percentage of structural etiology of AUB was because this study was conducted at a referral center hospital, where the referral hospital had more adequate medical personnel and equipment for diagnosing the causes of structural AUB so that more cases of anatomical and structural abnormalities were detected.

Table 2 Characteristics of AUB patients by

Age	Total			
	Structural Etiology		Non-Structural Etiology	
	F	%	F	%
<25 years	5	14%	13	45%
25-40 years	13	36%	10	34%
41-50 years	13	36%	6	21%
≥ 51 years	5	14%	0	0%
Total	36	100%	29	100%

age

Table 2 shows that 13 patients with structural etiology AUB were aged 25-40 years and 41-50 years, while for non-structural etiology most patients aged <25 years were 13 patients.

The influence of age on the incidence of AUB can be associated with changes in organs in the body such as the uterus and ovaries and the HPO-Axis such as the hypothalamus and pituitary which also affect the production of

reproductive hormones (Hugh S. Taylor, MD.; Lubna Pal, MBBS, 2011).

At the extreme ages of women, such as at the beginning and at the end of the reproductive period, it is the most common period for AUB patients. In this study, the majority of AUB structural etiology patients aged 25-40 years and 41-50 years. At the age that enters the perimenopausal phase, many changes occur and begin to experience a decline, both physically, psychologically, and hormonally related to a decrease in the number of ovarian follicles and an increase in resistance to gonadotropin stimulation, causing a decrease in estradiol levels and the endometrium is unable to maintain its normal growth. (Marpaung, 2019).

The hormone estrogen which is still secreted in the perimenopausal phase makes the endometrial wall continue to proliferate and produce excess tissue. However, it is not balanced with the secretion of the hormone progesterone so that there is nothing to maintain the endometrial wall, and in certain conditions it can increase the possibility of structural abnormalities or other conditions that cause bleeding.

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In other studies, it has been shown that the incidence of malignancy or structural abnormalities that cause AUB is more common in elderly women, such as Kanika sigh's study which stated that of 300 AUB patients, 56% were perimenopausal women (41-50 years) and the biggest cause is PUA-L by 30%. Mary L. Marnach et al, also wrote that Adenomyosis occurs in 5-70% of women and mostly occurs in 4-5 decades of a woman's

life (Khangar et al., 2018; Marnach and Laughlin-Tommaso, 2019)

AUB of non-structural etiology mostly occurs in patients aged <25 years. At this age, there are many possible cases that can cause AUB, such as immature HPO-Axis, PCOS, excessive strenuous exercise or inappropriate use of contraceptives.

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A study conducted by John J.E Watania stated that 75% of early adolescents experience AUB complaints. Mary L. Marnach also revealed the etiology of PUA with characteristics of heavy and prolonged menstruation occur at the beginning of reproductive age (Marnach and Laughlin-Tommaso, 2019).

Table 4 Characteristics of AUB patients by body mass index (BMI)

Age	Total			
	Structural Etiology		NonStructural Etiology	
	F	%	F	%
Underweight	3	8%	5	17%
Normal	15	42%	11	38%
Overweight	7	19%	4	14%
Obesity	11	31%	9	31%
Total	36	100%	29	100%

In table 4, it can be seen that from both structural and non-structural etiologies, the highest BMI category is normal and the second largest is obesity category.

According to several opinions and previous research, obesity is a factor that influences the incidence of AUB because obese patients have high levels of free fat, high levels of free fatty acids will interfere with cell performance to respond to the hormone insulin, which functions to absorb glucose from the blood

into cells. This allows for insulin resistance in the body.

Excess insulin hormone levels will increase androgen production in the ovaries through stimulation of cytochrome P450c17 α activity. If there are many androgens, the aromatization process will also increase and estrogen hormone secretion will also increase. A decrease in SHBG will also increase the Free androgen index which also increases the level of estrogen in the body (Kasim-Karakas, Cunningham and Tsodikov, 2007; Hugh S. Taylor, MD.; Lubna Pal, MBBS, 2011)

When the levels of estrogen are high without being matched by levels of progesterone, there will be excessive proliferation of the uterine wall (Endometrium) and it is fragile and easily sheds so that the possibility of the risk of malignancy in the endometrium and the prevalence of AUC increases.

The results of this study which stated that the majority of AUB patients of both structural and non-structural etiology had a normal BMI is in line with the research conducted by Rizka Aulia at the Gynecology Polyclinic of Dr Ramelan Naval Hospital of Surabaya in 2016. The majority of AUB patients had a normal BMI of 65.8% (Rizka Aulia Wardani, 2019).

In women with normal BMI, it is possible for AUB to occur because of other factors that influence outside of the BMI itself.

CONCLUSION

In this study it can be concluded that:

1. Etiology of AUB in RSUD Dr. Soetomo Surabaya for the January-December 2019 period was mostly structural etiology (PALM).
2. The most common age of patients with structural etiology are 25-40 years and 41-50 years, while the majority of non-structural AUB patients are <25 years.
3. The most parity status of AUB patients of structural and non-structural etiology are nulliparous.

4. The body mass index (BMI) of AUB patients of structural and non-structural etiology are normal.

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