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Characteristics of Endometriosis Patients at Sultan Agung Hospital Semarang During the Period 2018 - 2019

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ABSTRACT

Endometriosis is a female gynecological disorder that is defined as the presence of ectopic growth of endometrial glands and stroma (outside the uterine cavity). Infertility, chronic pelvic pain, and dysmenorrheacaused by endometriosis greatly impact the *quality of life* and productivity of women of reproductive age (18- 45 years). The aim of this study was to describe the characteristics of risk factors for endometriosis sufferers at RSI Sultan Agung Semarang during the period 1 July 2018 to 31 July 2019. This study used a retrospective descriptive study, using medical record data of endometriosis sufferers at Sultan Agung Hospital in Semarang. The time allocation for this research was August - October 2019. Data analysis was carried out univariately oneach variable from the results of this research to see the frequency and percentage distribution. The research variables were age, education level, occupation, parity, age at menarche, clinical symptoms, location of endometriosis, disease stage, and management. The results of the study showed that most endometriosis patients were of reproductive age (64.8%), with the highest education level of endometriosis patients being high school (31.5%), housewife being the most dominant occupation (44.4%), and endometriosis patients are dominated by multiparas (37%), the most common marital status is married (87%), with the main symptom frequently found being dysmenorrhea (70.4%) and the most frequently given therapy is operative (25.9%). The majority of endometriosis sufferers are of reproductive age with a high school education level and housewives.

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INTRODUCTION

Endometriosis is a female gynecological disorder that is defined as the presence of ectopic growth of endometrial glands and stroma (outside the uterine cavity). Endometriosis is the cause of 12-32% and 50% of chronic pelvic pain or dysmenorrhea in women of childbearing age and

teenagers. Endometriosis can also occur during puberty and postmenopausal women[1]. Infertility, chronic pelvic pain, and dysmenorrhea caused by endometriosis greatly impact the *quality of life* and productivity of women of reproductive age (18-45 years)[2].

The exact prevalence of endometriosis cannot be known because the diagnosis can only be determined through laparoscopy. The general prevalence in Indonesia ranges from 3% - 10%, especially in women of reproductive age [3]. The frequency of women experiencing endometriosis, pain, infertility, or both ranges from 35-50% [4].

The main pathogenesis of endometriosis (>90%) is a backflow *of* endometrial tissue into the peritoneal cavity[5]. Additionally, an altered immune system plays a major role in the development of endometriosis[6]. Several molecular parameters associated with the pathogenesis of endometriosis include inflammation and overexpression of inflammatory genes, release of pro-inflammatory cytokines, activation of nuclear factor-kappaB (NF-κB), and infiltration of macrophages and lymphocytes. The pro-inflammatory immune system in the peritoneal cavity will activate immune cells along with endometriosis implantation to produce cytokines such as IL-6 and TNF-α. These cytokines will elicit more immune cells, and promote the implantation and growth of ectopic endometrium by inducing proliferation and angiogenesis on the surface of the peritoneum[5–7].

There are many things that make endometriosis important in gynecology, including clinical symptoms and various anatomical locations making it difficult to diagnose, requiring laparoscopic or laparotomy and histopathological examination, endometriosis is associated with infertility, endometriosis can develop towards cancer and can reduce the quality of life of sufferers [1,8]. Therefore, this study will discuss the characteristics of several risk factors associated with endometriosis such as age, education level, occupation, parity, marital status, age at menarche, clinical symptoms, location of endometriosis, disease stage, and management associated with endometriosis patients encountered. at RSI Sultan Agung Semarang during the period 1 July 2018-31 July 2019.

METHODS

The design of this study was a retrospective descriptive study by collecting data on endometriosis patients through subsequent medical records processed using SPSS 30 and analyzed with frequency distribution. This study describes the characteristics of risk factors for endometriosis patients at the Sultan Agung Islamic Hospital for the period 1 July 2018- 31 July

2019 and has received research approval by the Medical/Health Research Bioethics Commission, Faculty of Medicine, Sultan Agung Islamic University.

The population in this study were all endometriosis patients who sought treatment at the Sultan Agung Islamic Hospital for the period 1 July 2018-31 July 2019. The sample in this study was taken using a total sampling technique, meaning that the sample was all patients who had been clinically diagnosed as having endometriosis at the polyclinic. obstetrics and gynecology at Sultan Agung Islamic Hospital for the period 1 July 2018-31 July 2019. Based on the inclusion and exclusion criteria, we choose the sample. The. All patients who received a clinical diagnosis of endometriosis at the obstetric-gynecology clinic of Sultan Agung Islamic Hospital between July 1, 2018, and July 31, 2019, are eligible to participate. Patients with incomplete endometriosis patient data are excluded.

RESULTS AND DISCUSSION

This research was conducted at the Sultan Agung Islamic Hospital Semarang which is located on Jalan Raya Kaligawe Km. 4 Semarang. Based on medical record data that researchers collected in the period 1 July 2018-31 July 2019. The research data is secondarydata from medical records of endometriosis patients at the Sultan Agung Islamic Hospital, Semarang. Data collection was carried out from January 9 2020 to February 9 2020, and a total of 88 patients were diagnosed by the doctor in charge with ICD-10-CM Diagnosis Code N.80.0, both inpatient and outpatient. Of the 88 data, 56 samples were excluded due to duplicate data, and because there were 2 samples diagnosed other than endometriosis, there were 54 samples that met the criteria for frequency distribution.

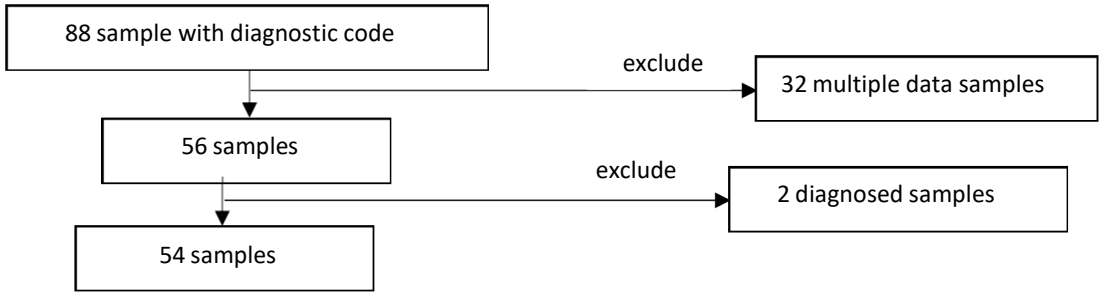

Figure 1. Scheme of sample acquisition in research

Distribution of Endometriosis at Sultan Agung Islamic Hospital Semarang for the period 1 July 2018-31 July 2019 by age can be seen in table 1 .

Table 1. Distribution of Endometriosis by Age

Ratio Age	Amount Case (n)	Percentage (%)
15-44 years old	35	64.8
45-57 years old	17	31.5
≥ 58 years old	2	3 , 7
Total	**5 4**	**1 0 0**

From table 1 It can be seen that the highest number of endometriosis patients at the Sultan Agung Islamic Hospital in Semarang for the period 1 July 2018-31 July 2019 was the age group of 15-44 years, namely 35 cases (64.8%).

Distribution of Endometriosis Based on Education Level

From research conducted at the Sultan Agung Islamic Hospital Semarang for the period 1 July 2018-31 July 2019, it is known that the patient's education level (table 2) the most were high school graduates with a total of 17 patients (31.5%).

Table 2. Distribution of Endometriosis by Education Level

Level of education	Amount Case (n)	Percentage (%)
Bachelor	5	9,3
Academy / D3	5	9,3
Senior High School	17	31.5
Junior High School	10	18.5
Elementary School	8	14,8
Unknown	9	16.7
Total	**5 4**	**1 0 0**

Distribution of Endometriosis by Occupation

Based on research that has been carried out, data shows that housewives are the most common occupation found among patients, namely 24 patients (44.4%). Complete data on the distribution of endometriosis based on occupation can be seen in table 3 .

Table 3 . Distribution of Endometriosis by Occupation

Occupation	Amount Case (n)	Percentage (%)
Housewife	24	44,4
Laborer	1	1,9
Teacher	1	1,9
Trader	2	3,7
Farmers / Fishermen	1	1,9
Civil Servant	2	3,7

Employee Private	8	14.8
Self-employed	4	7.4
Unknown	11	20.4
Total	**5 4**	**1 0 0**

Distribution of Endometriosis Based on History of Parity

Based on parity, the most endometriosis patients at the Sultan Agung Islamic Hospital in Semarang for the period 1 July 2018-31 July 2019 were mostly Multipara with 20 patients (37%). Complete data on the distribution of endometriosis based on the history of parity can be seen in Table 4 .

Table 4. Distribution of Endometriosis based on Parity History

Parity	Amount Case (n)	Percentage (%)
Nulliparous	16	29,6
Primipara	11	20.4
Multipara	20	37
Unknown	7	13
Total	**5 4**	**1 0 0**

Distribution of Endometriosis Based on Marital Status

Based on the marital status of endometriosis patients at the Sultan Agung Islamic Hospital in Semarang for the period 1 July 2018-31 July 2019, the highest number, namely 47 patients (87%) were married. Data regarding marital status is presented in table 5:

Table 5. Distribution of Endometriosis by Marital Status

Marital Status	Amount Case (n)	Percentage (%)
Marry	47	87
Single	4	7.4
Unknown	3	5,6
Total	**5 4**	**1 0 0**

Distribution of Endometriosis Based on Main Symptoms

The description of endometriosis at the Sultan Agung Islamic Hospital Semarang for the period 1 July 2018-31 July 2019 based on the main symptoms showed that dysmenorrhoea was the main symptom most frequently found in patients, namely 43 patients. Complete data regarding the main complaints experienced by endometriosis patients can be seen in the Table 6.

Table 6: Distribution of Endometriosis based on Main Symptoms

Main Symptoms	Amount Case (n)	Percentage (%)
Dysmenorrhea	43	70.4
Infertility	1	1,6
Pelvic Pain	1	1,6
Bleeding Irregular	9	14.8
Upset Stomach "*Sebah*"	1	1,6
menstruating yet	1	1,6
Lower Back Pain	1	1,6
Unknown	4	6,6
Total	**5 4**	**1 0 0**

Distribution of Endometriosis by Therapy

From the research that was conducted at the Sultan Agung Islamic Hospital in Semarang for the period 1 July 2018-31 July 2019, it is known that the therapy performed on most patients was operative therapy with a total of 14 patients (25.9%).

Table 7 . Distribution of Endometriosis by Therapy

Therapy	Amount Case (n)	Percentage (%)
Medicamentosa	11	20.4
Operation	14	25,9
Combination	9	16.7
Unknown	20	37
Total	**5 4**	**1 0 0**

DISCUSSION

Age

The data collected shows that the age of most patients is in the 15–44-year age range with 35 patients (64.8%) who are of reproductive age [9], followed by the 45-57-year age range with 17 patients (31 .5%) is included in the menopausal age[10], and 2 patients (3.7%) aged >58 years are included in the post- menopausal age[11]. The results of this study are in accordance with research conducted by Abadi (2014), namely 64% were found in reproductive age and 36% in menopausal and postmenopausal age. Wu et al., (2017) also found that of 54 cases experiencing endometriosis, 44 patients (81.5%) were of productive age and 10 patients (18.5%) were of menopausal and postmenopausal age.

Endometriosis occurs in 3-10% of all women of reproductive age by Akbarzadeh- Jahromi et al., (2015). This is because endometriosis is a disease related to the hormone estrogen which

reaches its highest content in a woman's body during reproductive age[15]. Complications caused by endometriosis greatly impact the *quality of life* and productivity of women aged 18-45 years[2]. The results of this study show that endometriosis is more often found in women of reproductive age, which will have a greater impact on the quality of life of these sufferers. Therefore, early detection of cases is better in preventing complications so as not to affect the patient's quality of life.

Level of education

This study concluded that from 54 patients, the highest level of patient education was high school graduates with 17 patients (31.5%), followed by junior high school graduates with 10 patients (18.5%), and elementary school graduates with 8 patients (14.8%), then undergraduates and academy graduates, each with 5 patients (9.3%). A total of 9 patients had unknown educational levels. The results of this research are in accordance with research conducted by Wu et. al., (2017) at RSUP Prof. Dr. RD Kandou Manado, namely that 33 patients were high school graduates (61.1%), 15 patients (27.8%) were college graduates with a Bachelor's degree (Strata-1), 1 patient (1.9%) was a college graduate with a Master's degree (Strata-2), and 5 patients (9.3%) were junior high school graduates.

The results show that the highest level of education is high school which according to Law No. 20 of 2003 includes secondary education. This is not in line with the opinion of Bellelis et al., (2010) who said that education has a significant influence on reproductive health behavior. The higher the patient's level of education is directly proportional to the level of concern for the health problems they are experiencing. A higher risk may be found in women with higher education and social status because the access to health services received by this group gives them a greater chance of being diagnosed with endometriosis so the reported incidence of endometriosis in this group is higher[17]. The research results are not in line with this theory because the sample size is not large enough and there is some incomplete data which affects the research results.

Occupation

The data collected by the researchers showed that 19 patients (59%) worked as housewives, 3 patients (9%) worked in the private sector, 3 patients (9%) worked as entrepreneurs, 2 patients (6%) became civil servants, 1 patient (3%) were traders, and 1 patient (3%) was a farmer. This data is in accordance with research conducted by Wu et al., (2017), namely 28 housewives (51.9%), 12 civil servants (22.2%), 8 private employees (14, 8%), entrepreneurs and pastors each with 2 people (3.7%), and nurses and students with 1 person each (1.9%). The work of patients suffering

from endometriosis is dominated by housewives, but a smaller incidence of endometriosis is found in working mothers. This is because endometriosis is a disease related to the hormone estrogen and according to Bijlani & Sonawane (2012) heavy and regular work can reduce estrogen levels, thereby reducing the risk of endometriosis. A working mother at the same time has a dual role, apart from wanting to achieve optimal performance in her work, she also plays a role in household work[18].

Parity

According to Cunningham et al., (2018), nullipara is a condition where you have never given birth or are pregnant <20 weeks. Primipara is having once given birth to a live or dead baby with a pregnancy >20 weeks. Multipara is having given birth to two or more alive or dead babies with a pregnancy >20 weeks. The number of parities found by researchers was that 16 patients (29.6%) were nulliparous, 11 patients (20.4%) were primiparous, and 20 patients (37%) were multiparous. A total of 7 patients (13%) had no known parity. The results of research conducted by Lubis, (2017) found different results, namely that 50.8% of patients were nullipara, 18.6% were primipara, and 30.5% of patients were multipara. This research is not in accordance with the theory which states that a high number of parities is associated with a low risk of endometriosis which is supported by the theory of menstrual reflux which causes endometriosis and the occurrence of pregnancy causes fewer menstrual cycles throughout life[17]. Apart from that, what causes the majority of endometriosis patients to be nulliparous is disruption of reproductive function such as disruption of normal oocyte transport, disruption of follicular development, ovulation, sperm function, embryo quality, and development and implantation[21]. In this study, nullipara is ranked second after multipara. This is due to the limited number of samples owned by researchers.

Marital status

Based on the marital status of endometriosis patients at the Sultan Agung Islamic Hospital Semarang for the period 1 July 2018-31 July 2019, 47 patients (87%) were married and 4 patients (7.4%) were unmarried. These results are in accordance with research conducted by Wu et al., (2017), namely 50 patients (92.6%) with married status and 4 patients (7.4%) with unmarried status. Research conducted by Rizkianti et al., (2017) said that the proportion of contraceptive use among married teenagers was 54.2% and the results of research by Liwang et al., (2018) said that hormonal contraceptive use was more common than non-hormonal with a percentage of 62 .1%.

The use of hormonal contraception still has a tendency to use birth control pills which contain the hormone estrogen. The hormone estrogen itself is related to the occurrence of endometriosis[17].

Main Symptoms

A total of 43 patients showed symptoms of dysmenorrhea, then 9 patients had irregular bleeding, and 1 patient each had symptoms of not menstruating, lower back pain, abdominal cramps, infertility, and pelvic pain. A total of 4 patients had no known main symptoms. The results of this study are in accordance with the study of Mishra et al., (2015) with the most symptoms found, namely dysmenorrhea (42.22%) followed by irregular menstruation (17.77%), menorrhagia (12.2%), dyspareunia (9 .4 %) and chronic pelvic pain (4.41 %). Research by Puspasari et al., (2007) also found that the most symptoms in endometriosis patients were dysmenorrhea (29.7%), followed by abdominal pain (27.1%), lumps in the stomach (22.5%), menstrual disorders (10.8%) %), infertility (7.2%) and BAK disorders (2.7%).

The retrograde menstruation theory can explain why dysmenorrhea was the most common symptom found in this study. The return of menstrual blood causes the transplantation of endometrial tissue so that it can be implanted outside the uterine cavity. Endometriosis tissue itself also produces nerve fibers. In addition, endometriosis tissue produces estradiol which is converted into prostaglandins which can cause pain. This situation causes NGF (*Nerve Growth Factor*) to increase and causes pain, especially dysmenorrhea.

Apart from dysmenorrhea, infertility is the most common complaint experienced by endometriosis patient[26]. However, the results of this study only found 1 patient with symptoms of infertility. This is because most of the patients in this research sample came for treatment for the first time, not with the main complaint of infertility.

Therapy

From research conducted at the Sultan Agung Islamic Hospital Semarang for the period 1 July 2018-31 July 2019, it is known that surgical therapy is the most frequently used therapy with 14 patients (25.9%), then medication with 11 patients (20.4%), and a combination of medication and surgery in 9 patients (16.7%). A total of 20 patients (37%) did not know the therapy given. Research conducted by Lubis, (2017) showed different results, namely medical therapy was the largest, namely 33 patients (55.9%), followed by therapy in the form of surgery with 15 patients (25.4%), and combination therapy with both. 11 patients (18.6%). This is due to the incomplete data held by researchers. Pangemanan et al., (2017) said that all endometriosis patients are given

medical therapy to improve the patient's general condition. Medicament therapy is used to treat pain. Surgical therapy is usually performed when medical therapy is ineffective[28]. Operative therapy is used in endometriosis patients to restore normal anatomical relationships, destroy or remove existing abnormalities, and prevent or delay disease recurrence[21].

CONCLUSION

Based on research that was conducted at the Sultan Agung Islamic Hospital in Semarang for the period 1 July 2018-31 July 2019, it can be concluded that the majority of endometriosis sufferers are of reproductive age (64.8%) with high school education level (31.5%), as well as the mother's occupation household (44.4%). Meanwhile, this study also found endometriosis sufferers had marital status (87%), dysmenorrhea as the main symptom that was often found (70.4%), and operative therapy as the therapy that was most often given (25.9%).

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