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Patterns of Using Analgesics for Menstrual Pain in Female Students Sriwijaya University Faculty of Medicine

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ABSTRACT

Dysmenorrhea is a condition that women often feel at their productive age and disrupt their daily activity. A study that was condoned in Palembang finds that 93,8% of SMA female students had dysmenorrhea. A study in India finds that 42% in 654 respondents decided to their dysmenorrhea without visiting a physician and 35% are using the wrong medication Analgetics as a pain reliever sold freely in markets. Dysmenorrhea affects life quality and education for the easiness in obtaining medicine in markets, making the research about analgetics usage patterns in Faculty of Medicine, Sriwijaya University 2016-201 students. The design of this study was cross-sectional descriptive observational from 2 December 2019 until 6 January 2020. The population of this study is FK Unsri (201 2019) students with 628 respondents. The respondent characteristics are found by using a questionnaire. Dysmenorrhea prevalence among FK UNSRI students is 88%. Dysmenorrheprevalence that disrupts activity is 64,7%. FK UNS RI student (2016-2019) that use mefenamic acid is 48,3%, paracetamol is 33,8% and ibuprofen is 6,2% for the dysmenorrhea.FK UNSRI student (2016-2019) that consumed analgetics once per day 80,6%. FK UNSRI students (2016-2019) that picked tablets is 97,9%. FK UNSRI study (2016- 2019) that chose to use it for a day is 76,5%. The analgetics that are mostly chosen for FK UNSRI (2016-2019) students are mefenamic acid, a tablet that was consumed once per day for a day.

1. Introduction

Menstrual pain or primary dysmenorrhoea (DP) is a gynecologic complaint with symptoms in the form of sharp pain and cramps that are centered on the lower abdomen accompanied by sweating, dizziness, nausea, vomiting, and diarrhea (De Sanctis et al., 2015). DP usually lasts for 1-2 days while the menstrual process is in progress (Omidvar et al., 2015). Based on the pathogenesis, dysmenorrhoea is divided into two, namely primary dysmenorrhoea and secondary dysmenorrhoea. Primary dysmenorrhoea is defined as pelvic pain that occurs during menstruation in the absence of pelvic abnormalities. While secondary dysmenorrhoea is generally caused by disorders of the reproductive system, for example, endometriosis, uterine myoma, adenomyosis, cervical stenosis, pelvic inflammatory disease, and pelvic adhesions (Prawohardjo & Wiknjosastro, 2011)

Research conducted in Sweden, found that 72% of 600 adolescents aged 19 years and over experience dysmenorrhoea. A study conducted by WHO in a hospital in England found a prevalence of dysmenorrhoea of 8.8% in the 21-41 years, age group, to 94% in the 10-20 year age group. Another study on

1,018 junior high school students in Japan found 46.8% had moderate dysmenorrhea and 17.7% had severe dysmenorrhoea. the age group most often experiencing dysmenorrhoea is the age group 12-15 years.

Dysmenorrhoea is the main cause of the absence of students from school (Ibrahim et al., 2015). The incidence of dysmenorrhoea in Indonesia reaches 64.25% consisting of 54.89 % primary dysmenorrhea and 9.36% secondary dysmenorrhoea (Ernawati et al., 2017). Meanwhile, in Palembang, of the 175 senior high school students studied, 93.8% had dysmenorrhea, which was dominated by moderate dysmenorrhea as much as 73.1% (Faturahman, 2016).

Because of the effect of dysmenorrhoea on quality of life which also means that it affects educational performance as well as the use and ease of obtaining treatment in the community, it is necessary to conduct research on the patterns of using analgesics for menstrual pain in students of the Faculty of Medicine, Sriwijaya University, class 2016-2019 starting from the types of drugs used, dosage and duration of drug use.

2. Methods

This research is an observational descriptive study using a cross-sectional design which was conducted from December 25, 2019, to January 6, 2020. The population of this study was students of the Faculty of Medicine, Sriwijaya University, Class of 2016-2019. Responder characteristic data were obtained using a questionnaire. Sampling was taken by the total sampling technique, namely the method of taking all samples. The variables studied were the use of analgesics and the name/type of analgesics. Frequency of use of analgesics. analgesic preparations and length of use of analgesics.

3. Results

The population of this study was the students of the Faculty of Medicine, Sriwijaya University Class 2016-2019 with a total population of 628 people. However, in taking a sample of 628 distributed questionnaires, 360 questionnaires were returned and became research samples that met the inclusion and exclusion criteria.

Respondents in this study were categorized as having or had no pain during menstruation in table 1. The majority of respondents had experienced menstrual pain (dysmenorrhoea) as many as 317 people (88%).

The incidence of dysmenorrhoea experienced by respondents has an impact on their daily activities, thereby reducing their level of productivity. The majority of respondents in table 2 experienced dysmenorrhoea which interferes with activities (64.7%).

There are several types of drugs used by respondents to relieve menstrual pain, which is divided into several categories of analgesics and other drugs. The majority of respondents use d mefenamic acid as an analgesic option for menstrual pain, as many as 70 people (48.3%).

The frequency of drug use most frequently consumed by respondents varies, with the majority of drug use being used once a day (117/80.6%).

In this study, it was found that the number of preparations most often used by respondents, namely tablet preparations, was 142 (97.9%)

In this study, it was found that the average length of time to use the drugs consumed by the respondents was one day as many as 111 (76.5%).

Table 1. Distribution of respondent characteristics based on the incidence of dysmenorrhoea

Have had dysmenorrhoea	N	%
Yes	317	88
No	43	12
Total	360	100

Table 2. Distribution of respondents' characteristics based on dysmenorrhoea incidence that disrupts activities

Drug consumption	N	%
Yes	233	64.7
No	127	35.3
Total	360	100.0

Table 3. Distribution of the use of analgesics

Drug consumption	N	%
Ever	145	40.3
Never	215	59.7
Total	360	100.0

Table 4. List of drug classes

Drug Type	Dose	N	%
Diclofenac	50 mg	1	0.6
Ibuprofen	200 mg	9	6.2
Ketoprofen	25 mg	0	0
Mefenamic acid	500 mg	70	48.3
Naproxen	500 mg	0	0
Paracetamol	500 mg	49	33.8
Other:			
Metamizole	500 mg	8	5.5
Herbs (turmeric extract)	150 ml	2	1.4
Hyoscine	20 mg	3	2.06
Dexketoprofen	12.5 mg	1	0.6
Herbs (ginger extract)	300 mg	1	0.6
Otilonium Bromide	120 mg	1	0.6
Total		145	100

Table 5. Frequency of daily drug consumption

Drug class	Drug Consumption	n	%
Diclofenac	1	1	0.6
Ibuprofen	1	7	4.8
	2	2	1.4
		61	42
Mefenamic acid	1		
	2	6	4.1
	3	3	2.06
Paracetamol	1	38	26.2
	2	10	6.8
	3	1	0.6
Metamizole	1	5	3.4
	2	2	1.4
	3	1	0.6
Herbs (turmeric extract)	1	1	0.6
	2	1	0.6
Hyoscine	1	2	1.4
	2	1	0.6
Dexketoprofen	1	1	0.6
Otilonium	1	1	0.6
Bromide Herbs (ginger extract)	2	1	0.6
Amount	1	117	80.6
	2	19	13.1
	3	5	3.4
Total		145	100.0

Table 6. Distribution of drug preparations

Drug Class	Medicinal Preparations	N	%
Diclofenac	Tablet	1	0.6
Ibuprofen	Tablet	9	6.2
Mefenamic acid	Tablet	70	48.3
Paracetamol	Tablet	49	33.8
Metamizole	Tablet	7	4.8
	Syrup	1	0.6
Hyoscine	Tablet	3	2.06
Dexketoprofen	Tablet	1	0.6
Herbs (ginger extract)	Tablet	1	0.6
Otilonium Bromide	Tablet	1	0.6
Herbs (turmeric extract)	Syrup	2	1.4
Amount	Tablet	142	97.9
	Syrup	3	2.06
Total		145	100.0

Table 7. Distribution of duration of drug use

Drug Class	Drug consumption	N	%
Diclofenac	One day	1	0.6
Ibuprofen	One day	7	4.8
	Two days	2	1.4
Mefenamic acid	One day	54	37.2
	Two days	13	8.9
	Three days	3	2.06
Paracetamol	One day	38	26.2
	Two days	11	7.6
Metamizole	One day	5	3.4
	Two days	2	1.4
	Seven days	1	0.6
Hyoscine	One day	1	0.6
	Two days	2	1.4
Dexketoprofen	One day	1	0.6
OtiloniumBromide	One day	1	0.6
Herbs (ginger extract)	One day	1	0.6
Herbs (turmeric extract)	One day	1	0.6
Amount	One day	111	76.5
	Two days	30	20.6
	Three days	3	2.06
	Seven	1	0.6
Total		145	100.0

4. Discussion

The results of this study indicate that the prevalence of dysmenorrhea in students of the Faculty of Medicine Unsri Class 2016-2019 is 88%. This is in line with the study of the prevalence of dysmenorrhea among female students aged 15-20 years which showed results of 79.67% (Agarwal & Agarwal, 2010).

In a study conducted in Kuwait in 2018, the prevalence of dysmenorrhoea in female students with an average age of 20.5 years was 71.8%. (Yesuf et al., 2018). In Indonesia, the prevalence rate of dysmenorrhoea is 55% (Proverawati & Misaroh, 2009).

From the results of the study, it was found that the prevalence of dysmenorrhoea that interferes with the activities of students of the Faculty of Medicine, Class 2016-2019 is 64.7%. This is in line with research on the prevalence of dysmenorrhea in female students who interfere with activities with an average age of 20 years, which results in 66.2% (Unsal et al., 2010).

In a study conducted in Tbilisi, Georgia, it was found that during menstruation, 69.78% of respondents chose not to attend school/college due to dysmenorrhea which interferes with activities (Gagua et al., 2012). However, research conducted in Australia states that only 24% of women choose to take a break from school/college because they have dysmenorrhea that interferes with activities (Subasinghe et al., 2016).

The degree of pain felt by each individual is different, influenced by different levels of estrogen and progesterone in the body. High levels of estrogen and progesterone lead to higher prostaglandin synthesis at the end of the luteal phase of the menstrual cycle, which can increase the resulting pain (Lestari, 2013). In addition, the different interpretations of pain from each individual make a difference in the pain that is felt. Menstrual pain is also influenced by physical activity and diet, according to the results of research on female students in Iran which show that increased physical activity and dietary regulation, and nutritional intake can reduce menstrual pain experienced (Abadi Bavil, et al., 2018)

This study contained 145 female students who had used drugs to treat their menstrual pain. In research conducted on female students in Padang, there were 97.83% used drugs as a reliever of menstrual pain because the effects of the drugs felt faster (Subasinghe et al., 2016).

In this study, it was found that the drug class most widely used by respondents for menstrual pain was mefenamic acid, namely 70 (48.3%) respondents. Mefenamic acid, the dosage of 500 mg, reversibly inhibits cyclooxygenase-1 and -2 (COX-1 and -2), resulting in decreased levels of prostaglandin synthesis and pain relief. In addition, it is supported by its bioavailability fast enough to reach peak concentrations in plasma which makes this drug provide a fast analgesic effect (Calis, 2019). In a study conducted by Marjoribanks in 2010, a conclusion was found that NSAIDs (mefenamic acid and ibuprofen) were more effective as pain relief in subjects with dysmenorrhea than paracetamol (Marjoribanks et al., 2010). For NSAIDs, a study conducted by Roger in Minneapolis found that subjects taking ibuprofen received twice as many side effects as subjects taking mefenamic acid (11 versus 5), but were equally effective (Roger et al., 1984) (Ozgoli et al. al., 2009). Paracetamol as the second-largest drug with 500 mg was used by 49 (33.8%) respondents. There were 9 respondents (6.2%) who took ibuprofen as a pain reliever drug. 8 respondents (5.5%) chose Metamizole or what is also known as metampirone with a dose of 500 mg as an analgesic to relieve menstrual pain. There are 3 (2.06%) respondents who use hyoscine class drugs to relieve their menstrual pain. This drug is an antispasmodic drug that works by inhibiting the action of acetylcholine on smooth muscle which will relieve stomach cramps that are felt during menstruation. Diclofenac 1 (0.6%) is an analgesic that works by inhibiting prostate synthesis with a dosage of 50 mg to reduce menstrual pain. There are 1 (0.6%) respondent s who use dexketoprofen as the analgesic of choice to relieve pain. Dexketoprofe n is an isomer of ketoprofen which also circumvents prostagla ndi n synthesis by inhibiting COX-1 and COX-2 so that it can relieve menstrual pain (Calis, 2019).

In this study, there are two types of herbal medicine classes used, namely the turmeric extract contained in the complete pill (0.6%) which can reduce pain and other symptoms during menstruation with the content of ginger extract contained in it. Studies show that the content of gingerol, shogaol, and zing yang in ginger can provide antioxidant, anti-inflammatory, and analgesic effects and is proven to reduce dysmenorrhoea symptoms (Suparmi, akbar rade n, 2016). Otilunium bromide (0.6%) at a dose of 120 mg per day has a spasmolytic effect, which can reduce stomach cramps that are felt during menstruation. The turmeric extract contained in Kiranti was used by 2 (1.4%) respondents to relieve their menstrual pain, the content of turmeric extract, tamarind, and cinnamon found in Kiranti can reduce menstrual pain. The curcumin compound in turmeric can inhibit COX-2, thereby reducing prostaglandin synthesis and reducing menstrual pain (Marlina, 2012). Research that looks at the effectiveness of tamarind extract as a reliever of menstrual pain shows the content of tannins and alkaloids in tamarind has an effect on dysmenorrhea (Saadah, et.al, 2017). Cinnamon, the content of cinnamaldehyde contained in it has an antispasmodic effect, and eugenol which can inhibit prostaglandin synthesis has proven to reduce primary

dysmenorrhoea in studies looking at the effects of cinnamon aromatherapy on primary dysmenorrhoea (Puteri, 2018).

In this study, the majority of respondents took dysmenorrhoea drugs once a day (80.6%). This is influenced by the pain felt during menstruation and also the effect of the drug which quickly relieves menstrual pain. Mefenamic acid is the most widely used drug with bioavailability reaching a maximum plasma level of 2 hours (Calis, 2019). In a study conducted in India on 1000 women aged 11-28 years, it was found that 70.2% experienced menstrual pain on the first and second days (Omidvar, et al. 2015). Pharmacodynamically, analgesics can reach peak concentrations in plasma within one to four hours, so that it can provide a rapid effect in pain relief (Calis, 2019).

In this study, the majority of respondents chose tablet drug preparations (97.9%). This is because considering that respondents are female students aged 17 years and over and most of them use mefenamic acid and paracetamol, mefenamic acid and paracetamol in tablet formations are more often sold in pharmacies than paracetamol syrup and syrup, which are mostly aimed at children. In addition, there are some analgesic preparations that do not have syrup preparations that are sold freely in the market, so female students who take self-medication will not get the syrup preparations.

In this study, the majority of respondents used the medicine for one day (76.5%). The duration of drug use is influenced by the length of pain felt, and the length of pain felt at the beginning of the menstrual period is influenced by the high level of prostaglandin release which causes uterine contractions, reduced blood flow to the uterus which causes ischemia and necrosis of the endometrium and hypersensitivity of the nerve s. which causes shedding of the endometrium. This is also influenced by differences in the perception of pain that is felt which will affect the length of time using pain relievers (Fatima et, al, 2016). In addition, the level of physical activity and the pattern of nutritional intake also affect the degree of pain that is felt. Apart from taking medication by consuming analgesics, there are several ways of handling that can be done such as warm compresses. Research conducted on female students in Changsa, China got 94.6% of answers about dysmenorrhea management by reducing activity, 84.6% chose heat therapy (warming the body) so that they could reduce the menstrual pain they felt (Chen et al, 2018). In this study, there was one respondent who used the drug for one menstrual period or seven days. This can be influenced by high levels of the hormones estrogen and progesterone, thereby increasing prostaglandin synthesis and increasing the pain you feel. In addition, this can also be influenced by the level of activity, increasing physical activity can reduce the degree of pain and the incidence of pain that is felt (Abadi Bavil, et al. 2018).

5. Conclusion

The prevalence of dysmenorrhea that interferes with the activities of students of the Faculty of Medicine, Elementary Medicine 2016-2019 is 64.7%. As many as 48.3% of 2016-2019 students of the Faculty of Medicine Elementary Medicine who took the drug chose mefenamic acid, 33.8% paracetamol, and 6.2% ibuprofen. As many as 80.6% of students of the 2016-2019 Class of Unsri Medical Faculty who choose to use drugs consume them once a day. As many as 97.9% of students of the Faculty of Medicine Unsri Class 2016-201 9 chose tablet medicine preparations. There are 76.5% of students of the 2016-2019 class of the Unsri Medical Faculty who choose to take the drug for one day.

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