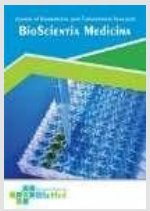
eISSN (Online): 2598-0580



Bioscientia Medicina: Journal of Biomedicine & Translational Research

Journal Homepage: www.bioscmed.com

The Relationship between Menstrual Patterns and Pain Scale in Endometriosis Patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia

Fatimah Usman[1*], Megan Reginia Rusli[2], Eka Handayani Oktharina[1], Kemas Yusuf Effendi[1], Syifa Alkaf[1]

[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

[2]General Practitioner Study Program, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

ARTICLE INFO

Keywords:
Endometriosis
Endometrium
Menstruation
Pain

***Corresponding author:**
Fatimah Usman

E-mail address:
titimusman@yahoo.com

All authors have reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/bsm.v6i17.714

A B S T R A C T

Background: Endometriosis is a disease characterized by the presence of tissue resembling the endometrium (uterine lining) outside the uterus. This causes a chronic inflammatory reaction that can result in the formation of scar tissue in the pelvis and other parts of the body. Pain is the most common clinical complaint in cases of endometriosis. Pain during menstruation is often confused with pain due to endometriosis, so treatment delays often occur. This study aimed to determine the relationship between menstrual patterns and pain in endometriosis patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia. **Methods:** This was cross-sectional analytic observational study. A total of 55 research subjects participated in this study. Data analysis was carried out with the help of SPSS version 25 software in univariate and bivariate. **Results:** Menstrual cycle, duration, color, and volume of menstrual blood are not related to pain intensity in endometriosis patients. **Conclusion:** There is no relationship between menstrual patterns and pain in endometriosis patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia.

1. Introduction

Endometriosis is a disease characterized by the presence of tissue resembling the endometrium (uterine lining) outside the uterus. This causes a chronic inflammatory reaction that can result in the formation of scar tissue in the pelvis and other parts of the body. It is a chronic illness associated with severe pain and life-threatening effects during menstruation, sexual intercourse, loose stools and/or urination, chronic pelvic pain, flatulence, nausea, fatigue, sometimes depression, anxiety, and infertility.[1] This condition causes a considerable burden for patients and society in general. Although endometriosis was first identified more than 160 years ago, there is a gap in knowledge because sometimes the symptoms are non-specific, and the symptoms of pain vary, so the diagnosis takes a long time, including confirmation of the etiology of the disease.[2-3]

Endometriosis is strongly associated with decreased quality of life for women. The most common pain symptoms of endometriosis are dysmenorrhea, chronic pelvic pain, and dyspareunia. Pain is the most common clinical complaint in cases of endometriosis. Several studies state that complaints of pain are almost found in 80% of cases of endometriosis.[4-7] Based on the theory of the phenomenon of retrograde menstruation, the diagnosis of endometriosis is usually delayed 8-10 years due to a misdiagnosis,

where the pain appears to be mistaken for menstrual cramps that are common in teenage girls and young women. With the increasing incidence of endometriosis in young girls correlated with earlier menarche, the development of diagnostic biomarkers is critical to diagnosing and treating women with endometriosis as early as possible. In recent years, several studies have highlighted various potential diagnostic candidates in peritoneal fluid, blood, urine, and endometrial biopsies from endometriosis patients in different stages of the disease and menstrual cycle.[8,9] Several studies have shown that women with long menstrual cycles are 1.8 times more likely to have endometriosis than those with short menstrual cycle lengths.[10,11] This study aimed to determine the relationship between menstrual patterns and pain scale in endometriosis patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia.

2. Methods

This study was an analytic observational study with a cross-sectional approach and used primary and secondary data. A total of 55 research subjects participated in this study. The inclusion criteria are in the form of patients diagnosed with endometriosis post-laparotomy/laparoscopic surgery and aged between 14-49 years. This research was approved by the medical and health research ethics committee of the Faculty of Medicine, Universitas Sriwijaya.

This study presents data on the menstrual patterns of research subjects in the form of menstrual cycles, menstrual duration, menstrual blood color, and menstrual blood volume. The menstrual cycle is declared regular if it lasts for 28 days. The menstrual duration was grouped into ≤ 7 days and more than 7 days. To assess the pain scale is done with a visual analog scale (VAS). Pain is classified as mild pain if the VAS is 1-3, moderate pain is 4-6, and severe pain is 7-10. Data analysis was performed with the help of SPSS version 25 software. Univariate analysis was performed to present the frequency distribution of the test variable data. Bivariate analysis was performed to analyze the relationship between the test variables with a $p<0.05$ value.

3. Results

Table 1 shows the relationship between menstrual pattern variables and pain in endometriosis patients. The menstrual cycle is not associated with pain intensity in endometriosis patients. Menstrual cycle irregularity is not associated with the severity of pain in endometriosis patients. Menstrual duration is not associated with pain intensity in endometriosis patients. Menstrual duration of more than 7 days is not associated with pain severity in endometriosis patients. The color of menstrual blood is not associated with pain intensity in endometriosis patients. Menstrual blood volume is not associated with pain intensity in endometriosis patients. More menstrual blood is not related to the severity of pain in endometriosis patients.

4. Discussion

The longer duration of menstruation is thought to be due to endometrial instability due to uncontrolled estrogen production, which interferes with vasoconstriction and contractility. During the ovulatory cycle, excessive production of prostaglandins is believed to cause the pain of dysmenorrhea. The presence of prostaglandins causes myometrial contraction and local vasoconstriction. Elevated serum levels of vasopressin, nitric oxide, and interleukin-6 have also been reported to be associated with dysmenorrhea. The distribution between the duration of menstruation and the pain scale of the majority was ≤7 days, with severe pain of 62.8%. In other studies, it was reported that the duration of menstruation was not significantly associated with dysmenorrhea. According to other studies, one of the risk factors associated with dysmenorrhea is a long menstrual cycle, and one of the risk factors in endometriosis is pain that is felt during menstruation.[12-17]

Table 1. Relationship between variables and pain in endometriosis patients.

Menstrual cycle	Pain scale				
	Severe pain n(%)	**Moderate pain n(%)**	**Mild pain n(%)**	**Total n(%)**	**p-value**
Irregular	9 (50%)	7 (38,9%)	2 (11,1%)	18 (100%)	
Regular	25 (67,6%)	6 (16,2%)	6 (16,2%)	37 (100%)	0,849*
Duration menstruation					
>7 days	7 (58,3%)	4 (33,3%)	1 (8,3%)	12 (100%)	1,000*
≤7 days	27 (62,8%)	9 (20,9%)	7 (16,3%)	43 (100%)	
Menstrual blood color					
Red strawberry	3 (42,9%)	3 (42,9%)	1 (14,3%)	7 (100%)	
Dark red/Normal	12 (50%)	7 (29,2%)	5 (20,8%)	24 (100%)	0,279*
Dark brown	8 (61,5%)	3 (23,1%)	2 (15,4%)	13 (100%)	
Dark purplish red	6 (100%)	0	0	6 (100%)	
Slightly black ash	5 (100%)	0	0	5 (100%)	
Menstrual blood volume Mean ± SD (mL)	104,3 ±49,1	177,9 ±160,2	130,5 ±100,7		0,57†

*Pearson chi-square; †Kruskal Wallis test; p<0,05.

In ovarian endometriosis, brown cysts can form, which are filled with dark brown blood. So far, there has been no research on the color of menstrual blood in endometriosis patients as different from the color of menstrual blood in general but the theory that is most supported at the moment is that this occurs from blood flowing backward through the ducts into the pelvis during a period. Likewise, with the volume of menstrual blood. Several studies state that severe pain is associated with more menstrual blood volume due to inflammation and activation of the sympathetic nerves. However, this study stated that there was no statistical difference in blood volume related to pain intensity. The feedback mechanism theory is believed to be able to explain the findings of this study. Pain with severe intensity triggers sympathetic nerve activity for vasoconstriction to stop bleeding. In contrast to the pain of mild or moderate intensity, where the sympathetic nervous system has not been optimally triggered.[18-20]

5. Conclusion

There is no relationship between menstrual patterns and pain in endometriosis patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia.

6. References

1. Ercoli A, Dasta M, Fagotti A, Fanfani F, Romano F, et al. Robotic treatment of colorectal endometriosis: Technique, feasibility and short-term results. Human Reproduction. 2012; 27(3): 722–6.
2. Guzick DS, Huang LS, Broadman BA, Nealon M, Hornstein MD. Randomized trial of leuprolide versus continuous oral contraceptives in the treatment of endometriosis-associated pelvic pain. Fertil Steril. 2011; 95(5): 1568–73.
3. Bourdel N, Alves J, Pickering G, Ramilo I, Roman H, et al. Systematic review of endometriosis pain assessment: How to choose a scale? Hum Reprod Update. 2015; 21(1): 136–52.
4. Alfonsin MM, Chapon R, de Souza CAB, Genro VK, Mattia MMC, et al. Correlations among algometry, the visual analogue scale, and the numeric rating scale to assess chronic pelvic pain in women. Eur J Obstet Gynecol Reprod Biol X. 2019; 3.
5. Ahn SH, Singh V, Tayade C. Biomarkers in endometriosis: challenges and opportunities. Fertility and Sterility. Elsevier Inc. 2017; 107(3): 523–32.

6. Pantelis A, Machairiotis N, Lapatsanis DP. The formidable yet unresolved interplay between endometriosis and obesity. Scientific World Journal. Hindawi Limited. 2021; 2021.
7. Lee D, Kim SK, Lee JR, Jee BC. Management of endometriosis-related infertility: Considerations and treatment options. Clinical and Experimental Reproductive Medicine. Korean Society for Reproductive Medicine. 2020; 47: 1–11.
8. Wei M, Cheng Y, Bu H, Zhao Y, Zhao W. Length of menstrual cycle and risk of endometriosis a meta-analysis of 11 case-control studies. Medicine (United States). Lippincott Williams and Wilkins. 2016; 95.
9. Critchley HOD, Babayev E, Bulun SE, Clark S, Garcia-Grau I, et al. Menstruation: science and society. American Journal of Obstetrics and Gynecology. Mosby Inc. 2020; 223: 624–64.
10. Magnay JL, Nevatte TM, O'Brien S, Gerlinger C, Seitz C. Validation of a new menstrual pictogram (superabsorbent polymer-c version) for use with ultraslim towels that contain superabsorbent polymers. Fertil Steril. 2014; 101(2).
11. Bourdel N, Alves J, Pickering G, Ramilo I, Roman H, et al. Systematic review of endometriosis pain assessment: How to choose a scale? Hum Reprod Update. 2015; 21(1): 136–52.
12. Khatri A, Kalra N. A comparison of two pain scales in the assessment of dental pain in East Delhi children. ISRN Dent. 2012; 2012: 1–4.
13. Smolarz B, Szyłło K, Romanowicz H. Endometriosis: Epidemiology, classification, pathogenesis, treatment, and genetics (review of literature). Int J Mol Sci. 2021; 22(19).
14. Mikhaleva LM, Radzinsky VE, Orazov MR, Khovanskaya TN, Sorokina Av, et al. Current knowledge on endometriosis etiology: A systematic review of literature. Int J Women's Health. 2021; 13: 525–37.
15. Mayama M, Umazume T, Watari H, Nishiguchi S, Moromizato T, et al. Frequency of night shift and menstrual cycle characteristics in Japanese nurses working under two or three rotating shifts. J Occup Health. 2020; 62(1).
16. Chowdhury TS, Mahmud N, Chowdury T. Endometriosis: correlation of severity of pain with stages of disease. Journal of Bangladesh College of Physicians and Surgeons. 2016; 34.
17. Ansong E, Arhin SK, Cai Y, Xu X, Wu X. Menstrual characteristics, disorders and associated risk factors among female international students in Zhejiang Province, China: A cross-sectional survey. BMC Women's Health. 2019; 19(1).
18. Calhaz-Jorge C, Mol BW, Nunes J, Costa AP. Clinical predictive factors for endometriosis in a Portuguese infertile population. Human Reproduction. 2004; 19(9): 2126–31.
19. Muluneh AA, Nigussie Ts, Gebreslasie KZ, Anteneh KT, Kassa ZY. Prevalence and associated factors of dysmenorrhea among secondary and preparatory school students in Debremarkos town, North-West Ethiopia. BMC Women's Health. 2018; 18(1).
20. Tang Y, Zhao M, Lin L, Gao Y, Chen GQ, et al. Is body mass index associated with the incidence of endometriosis and the severity of dysmenorrhoea: A case-control study in China? BMJ Open. 2020; 10(9).