

Research Article

Chronic Pelvic Pain and Associated Clinical Characteristics among Women in a Tertiary Care Center in Indonesia

Nyeri Panggul Kronis dan Karakteristik Klinis yang Berhubungan pada Perempuan di Suatu Layanan Kesehatan Tersier di Indonesia

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Abstract

Objective: To determine the prevalence and various aspects associated with female chronic pelvic pain.

Methods: During the period of January to March 2016, a cross-sectional study was conducted at the Women's Health Clinic of Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia. Subjects were female who complained of pelvic pain for more than 6 months. We performed history taking, physical examination, and laboratory investigations including hs-CRP serum examination. We calculate the prevalence and describe the clinical characteristics and diagnosis of the patient. Quality of life and levels of hs-CRP were compared between the group of mild and severe pain.

Results: In this study, the prevalence of CPP was 9.78%. We found 96.9% of gynecological disorders, 1% of urological disorders, and 2.1% of musculo-skeletal disorders. The most common diagnosis is endometriosis. The Clinical characteristics of patients were found 62.9% suffer for 6 months - 1 year with the intensity of pain (VAS) 7-10 as much as 51.5%. Levels of hs-CRP serum was around 1.99 (0.00 - 404, 53). We found a decreased in the quality of life of the patient. The physical domain score was 56 (38-81); the psychology domain score was 56 (31-100); the domain of social relationships was 59 (25-75); and the environmental domain score was 56 (31-94).

Conclusion: Endometriosis is the most common diagnosis in female chronic pelvic pain of reproductive age. The pain causes a decreased in quality of life who suffer from it.

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Keywords: chronic pelvic pain, hs- CRP, intensity of pain, quality of life

Abstrak

Tujuan: Untuk mengetahui prevalensi dan berbagai aspek yang berhubungan dengan nyeri panggul kronik pada perempuan.

Metode: Penelitian dilakukan dengan desain potong lintang di poliklinik rawat jalan ginekologi dan laboratorium di rumah sakit Dr. Cipto Mangunkusumo selama Januari - Maret 2016. Pasien yang mengeluh nyeri panggul lebih dari 6 bulan dilakukan anamnesis, pemeriksaan fisik, dan pemeriksaan penunjang dan pemeriksaan hs-CRP serum. Dilakukan penghitungan prevalensi dan deskripsi karakteristik klinis dan diagnosis pasien. Kualitas hidup dan kadar hs-CRP dibandingkan antara kelompok derajat nyeri ringan dan berat.

Hasil: Didapatkan prevalensi nyeri panggul kronik sebesar 9,78% dari total pasien di poliklinik ginekologi rumah sakit Dr. Cipto Mangunkusumo. Ditemukan 96,9% kelainan ginekologi, 1% kelainan urologi, dan 2,1% kelainan muskulo-skeletal. Diagnosis tersering adalah endometriosis. Karakteristik klinis pasien yang ditemukan adalah 62,9% menderita lama nyeri selama 6 bulan - 1 tahun dengan intensitas nyeri (VAS) 7 - 10 sebanyak 51,5%. Kadar hs-CRP serum sebesar 1,99 (0,00 - 404, 53). Terjadi penurunan kualitas hidup dari domain fisik 56 (38 - 81); domain psikologi 56 (31 - 100); domain hubungan sosial (25 - 75); domain lingkungan 56 (31 - 94).

Kesimpulan: Nyeri panggul kronik pada perempuan dijumpai pada usia reproduksi dengan penyebab tersering endometriosis. Nyeri tersebut menyebabkan penurunan kualitas hidup.

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Kata kunci: derajat nyeri, hs-CRP, kualitas hidup, nyeri panggul kronik

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INTRODUCTION

Chronic pelvic pain (CPP) is a symptom often experienced in women, particularly during reproductive age.¹ CPP is a complex condition due to various etiologies.² According to the European Association of Urology (EAU), chronic pelvic pain is defined as non-malignant pain felt in pelvic area that is intermittent or constant of at least 6

months in duration, whereas in some cases it is often associated with cognitive, negative behavior, and consequence of emotional and sexual condition.³ The pain may lead to daily activity impairment and lowering the quality of life caused by depression, sexual dysfunction, and somatic symptoms.⁴

The various definitions of chronic pelvic pain makes it complicated to determine the right prevalence. A study in the United States found that the quarterly prevalence of CPP in women aged 18 - 50 years is 15%.⁴ Furthermore, a survey in United Kingdom reported as much as 15 - 24% of women aged 18 - 50 years had experienced chronic pelvic pain in the last 3 months.⁵ The prevalence reported in New Zealand in women aged 18 - 50 was 25.4%.⁶ 40% of Northern Mexico complained about having CPP.⁷ In Alexandria, Egypt, the prevalence was 26.6%.⁸

According to the World Health Organization (WHO), CPP is a standing entity that is not well understood and has a quite serious morbidity.⁹ CPP is often under estimated by physicians, which may result in patient dissatisfaction. Hence objective measures of pain are needed in order to assess CPP better.¹⁰ This study was conducted to obtain the portrait of clinical manifestation and quality of life of women in Indonesia with an objective measurement, for a better diagnosis and causative therapy. Another objective of the study was to see the relationship between CPP severity and hs-CRP serum level as a biomarker.

METHODS

A cross-sectional study was conducted to obtain information about prevalence, demographic, and clinical manifestation and its relationship with the quality of life and hs-CRP serum level. The study was conducted at Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, during January - March 2016.

The inclusion criteria were women who experienced CPP (defined as pain felt in pelvic area, that is intermittent or continuous for at least 6 months in duration) who came to the Women's Health Clinic of Dr. Cipto Mangunkusumo hospital. Pregnant women and patients with malignancy were excluded.

Patients who met the eligible criteria were given informed consent. Subjects were then classified into patients with mild pain group (VAS 0-4) and patients with severe pain group (VAS 5 - 10). After giving the informed consent, we performed anamnesis, physical examination, and laboratory tests, including hs-CRP serum level.

All data were verified and analyzed using SPSS20 for Mac. This study was accepted by the Ethic Committee of Faculty of Medicine, Universitas Indonesia - Dr. Cipto Mangunkusumo Hospital.

RESULTS AND DISCUSSION

A total of 97 patients were recruited in this study. During the study period, there were 992 patients who came to the outpatient clinic. Thus, the prevalence of PFD at Dr. Cipto Mangunkusumo Hospital was 9.78%. Previous study in United States showed that the quarterly prevalence of CPP in women aged 18-50 years was 15%, while a study in United Kingdom reported 15-24% of women of the same age experienced CPP.⁴ The WHO systematic review reported that the prevalence of PFD in India, Pakistan, and Thailand were 5.2%, 8.8%, and 43.2%, respectively.⁹

Patients aged 31-40 years suffered the most from CPP at 39.2%, followed by patients aged 41-50 years at 38.1%. The ages mentioned were reproductive age. On education level, 60.8% of patients graduated high school, and 26.8% of patients graduated university. There was no patient who never attended school. On marriage status, 84.5% of patients were married, while 11.3% were not. 69.1% of patients were not working and got a living from their husband. 81.4% of patients earned 2,500,000 - 5,000,000 IDR monthly. 80.4% of patients used national health insurance, while 16.5% of them paid by themselves and 3.1% used management insurance. A previous study reported that patients aged 18-50 years were the most reported of having CPP.⁹ From the studies above, patients aged 30-40 suffered the most from it. From this study, most patients were married, household wife, and graduated high school. These characteristics were also found in previous studies. Endometriosis is a disease related to hormone.¹¹ Therefore, reproductive age is the most common period to suffer from CPP that is caused by hormonal influence, with endometriosis serves as the leading cause in gynecological field. In this study, the age range of patients having CPP was 30 - 50 years, most of them suffered from endometriosis. The data of patients' characteristics and socio-demographic status was shown in Table 1.

Table 1. Demographic Characteristics of the Subjects

Characteristics	n (%)
Age (years)*	40.0 (15.0 - 69.0)*
Age**	
≤ 20 years old	3 (3.1)
21 - 30 years old	11 (11.3)
31 - 40 years old	38 (39.2)
41 - 50 years old	37 (38.1)
≥ 50 years old	8 (8.2)
Educational level**	
No schooling	0 (0.0)
Elementary school graduate	0 (0.0)
Junior high school graduate	12 (12.4)
Senior high school graduate	59 (60.8)
College	26 (26.8)
Marital status**	
Single	11 (11.3)
Married	82 (84.5)
Divorced / widowed	4 (4.1)
Obstetric history**	
Gravidity	
0	44 (45.4)
1	23 (23.7)
2	14 (14.4)
3	11 (11.3)
4	4 (4.1)
Parity	
0	45 (46.4)
1	23 (23.7)
2	14 (14.4)
3	11 (11.3)
4	4 (4.1)
Abortion	
0	92 (94.8)
1	2 (2.1)
2	2 (2.1)
3	0 (0.0)
4	1 (1.0)
Occupation**	
Unemployed	67 (69.1)
Employed	30 (30.9)
Income**	
< 500.000	0 (0.0)
500.000 - 1.000.000	1 (1.0)
1.000.000 - 2.500.000	12 (12.4)
2.500.000 - 5.000.000	79 (81.4)
> 5.000.000	5 (5.2)

Health financing**

Private funding	16 (16.5)
National Health Insurance	78 (80.4)
Corporate funding	3 (3.1)

*Numerical data presented in median (min - max)

**Categorical data presented in n (%)

In this study, clinical characteristics that were assessed include diagnosis, quality of life based on each domain, duration of pain, intensity of pain, and hs-CRP serum level in some patients. CPP in this study are mostly caused by gynecological disorders (96.9 %), and a small part caused by chronic cystitis (1%) and myofascial pain (2.1%). The gynecological disorders that were found were endometriosis (76.3%), uterine myoma (9.3%), pelvic venous congestion syndrome (3.1%), pelvic inflammatory disease (4.1%), benign ovarian cyst (3.1%), cervicitis (1%). The common cause of CPP in women is endometriosis. Table 2 shows diagnosis of patients with CPP. Bloski et al said that endometriosis could be found 71 - 87% in women with CPP.¹² Obstetric histories revealed that 45.4% patients had never been pregnant and had problems with infertility. This is consistent with the common cause of CPP which is endometriosis. In this study, 96.9% of patients with CPP had gynecological disorders.

Table 2. Etiologies of Chronic Pelvic Pain (CPP) in this Study

Diagnosis	n (%)
Gynecology	94 (96.9)
Endometriosis	74 (76.3)
Endometriosis cyst	47 (48.5)
Adenomyosis	10 (10.3)
Deep infiltrating endometriosis	1 (1.0)
Combined endometriosis	16 (16.5)
Uterine fibroid	9 (9.3)
Pelvic venous congestion syndrome	3 (3.1)
Pelvic inflammatory disease	4 (4.1)
Benign ovarian cyst	3 (3.1)
Cervicitis	1 (1.0)
Urology	
Chronic cystitis	1 (1.0)
Muskuloskeletal	
Myofascial pain	2 (2.1)

Categorical data presented in n(%)

In this study, 62.9% subjects had been complaining of pain for 6 - 12 months and 26.8% of patients for 1-2 years. A study conducted by Muhammad et al found that patients complained of pain for 1-5 years.⁸ From study from Brazil by da Silva, 34% of patients complained of pain for 6 - 12 months, 28.6% for 13 - 36 months, and 37.4% for over 36 months.¹³ In this study, most patients have been suffering pain for 6 - 12 months. This might be caused by patients' education level that were mostly senior high school graduate. But in this study, none of the patients had education level lower than senior high school. Other factors that made patients to go to hospital were suggestion from the family or relatives and also the national health insurance that can be used for hospital payment. Some patients have been suffering pain for more than 1 year. This might be caused by tiered referral. Primary care physicians probably assumed this pain as regular pain, thus the patients were not directly referred to Dr. Cipto Mangunkusumo Hospital. The patients could be referred first to the secondary hospital and had treatment there. In addition, some patients also came from outside Jakarta, so it took a huge cost for transportation to Dr. Cipto Mangunkusumo Hospital. In this study, 51.5% of patients had score of pain with VAS 7 - 10, 37.1% of patients had 4 - 6. A previous study conducted by Muhammad et al reported the score of pain was VAS 6.5 ± 2.1 .⁸ Da Silva reported 35.4% of patients had VAS 3 - 5; 17.7% had VAS 5 - 7; 29.9% had VAS 7 - 10.¹³ Study by Souza reported that the patients had score of pain VAS 5.9 ± 2.9 .¹⁴ Wadner et al have found several factors that affect patients' pain perception include age and race. In this study, the majority of the subject had score of pain VAS 7 - 10. This might be caused by the patients' age, that were mainly middle-aged and older. Some patients who had higher education level complained higher score of pain, because they felt disturbed by the pain and they were more concerned about the pain. From the quality of life, patients had low scores either in total score or in each domain. The total score was 226 (144 - 319) and physical, psychological, social relationships, and environment domain scores, respectively were 56 (38 - 81); 56 (31 - 100); 59 (25 - 75); 56 (31 - 94). A previous study by Souza reported physical domain score was 54.2 ± 12.8 ; psychological domain was 56.2 ± 14.4 ; social relationships domain was 55.6 ± 18.2 ; and environment domain was 59.2 ± 11.7 .¹⁴ In this

study, patients had decreased score of quality of life in each domain. It is caused by disturbance in physical activity caused by pain. Some patients were stressed due to prolonged pain that psychologically disturbing. In terms of social relationships, patients did not want to socialize when they suffered pain, but this did not disturb sexual intercourse with their partner. This study found hs-CRP level was 1.99 (0.00 - 404.53) mg/l. A study conducted by Foda et al reported hs-CRP level in CPP patients due to endometriosis was 0.701 ± 0.289 mg/l.¹⁵ This study found elevated levels of hs-CRP compared to previous study. Endometriosis was the most common cause in this study. Endometriosis cause pain due to inflammation process.¹⁶ Increased of hs-CRP level as a marker of inflammation might be caused by endometriosis. However, there were also other factors so there was variation of an increased of hs-CRP level in this study. Clinical characteristics data are shown in Table 3.

Table 3. Clinical Characteristic of Chronic Pelvic Pain in Subjects

Characteristic	n (%)
Duration of pain*	
6 months - 1 year	61 (62.9%)
1 - 2 years	26 (26.8%)
3 - 5 years	8 (8.2%)
> 5 years	4 (4.1%)
Pain intensity (VAS)*	
0 - 3	11 (11.3%)
4 - 6	36 (37.1%)
7 - 10	50 (51.5%)
hs - CRP**	1.99 (0.00 - 404.53)
hs - CRP*	
Elevated (> 3 ng/l)	16 (57.1%)
Not elevated (? 3 ng/l)	12 (42.9%)
Impact on quality of life**	
Total	226.0 (144.0 - 319.0)
Physical domain	56.0 (38.0 - 81.0)
Psychological domain	56.0 (31.0 - 100.0)
Social relations domain	59.0 (25.0 - 75.0)
Environments domain	56.0 (31.0 - 94.0)

* Categorical data presented in number (percentage)

** Numerical data with asymmetrical distribution presented in median (minimum - maximum)

In this study, no significant difference was found in total quality of life score when we compared the subjects with mild VAS score subjects with severe VAS score (219 (163 - 319) and 231 (144 - 319), $p = 0.076$). There was also no significant difference found in each domain. Here are comparison results between those two groups in physical domain, psychological domain, social relations domain, and environments domain: 50 (44 - 75) and 56 (38 - 81), $p = 0.267$; 56 (44 - 88) and 56 (31 - 100), $p = 0.272$; 50 (31 - 75) and 62 (25 - 75), $p = 0.128$; 50 (38 - 88) and 56 (31 - 94), $p = 0.160$. Previous study done by Souza showed that higher VAS score shows lower quality of life in psychological domain (45.4 ± 15.6 and 58.2 ± 13.3 , $p = .007$) and environments domain (53.3 ± 10.7 and 60.7 ± 10.9 , $p = .044$). No significant difference found in physical and social relations domain of quality of life. We classified subjects into mild and severe degree based on score plotted at less than 25th percentile for mild group, and more than 25th percentile for severe group.¹⁴ This study discover lower quality of life in subjects with mild VAS score in comparison with subjects with severe VAS score, it is likely due to subjects ability to adapt and acceptance to the pain felt. Furthermore, there is a process of central sensitization in chronic pain. The process of central sensitization is related with neurotransmitter and also cognitivity of individuals suffering pain.¹⁷ It is also correlated with changes in pain threshold, and temporal and spatial changes therefore in can cause a pain hypersensitivity condition in normal stimulation or in condition with no pain stimulation at all.¹⁸ From this study there are several possibilities that may cause no difference between subjects with mild and severe VAS in lowering quality of life, which are perception and subjects psychological aspects in accepting the pain felt. Furthermore, central sensitization that happen cause hypersensitivity to pain, therefore some individuals perceive more severe pain than other individuals but generally have similar quality of life.

In this study, the ratio of hs-CRP in CPP patients with mild and severe VAS is found to be insignificant (3.88 (0.00 - 11.89) and 1.74 (0.34 - 404.53); $p = 1.00$). Previous study was performed on patients with CPP in endometriosis. The increase of hs-CRP level is found to be insignificant in this study due to different amount of patients with mild and severe VAS, along with the presence of endometriosis. However, hs-CRP level is found to

be higher in patients with mild VAS in comparison to patients with severe VAS, though statistically insignificant. Phillips discussed the mechanism of central nerve pain in chronic pain scheme. In chronic pain, central nervous system plays pivotal role as the brain has the plasticity capability that influence the process of central sensitization. Such process is triggered by peripheral trauma or inflammation process, which then affects central nervous system and progresses into chronic pain. Some people also have predisposing factors aiding to the central sensitization into chronic pain.^{16,19} Another factor includes the mechanism of central sensitization it self, which triggers a state of hypersensitivity towards pain, there by giving out higher intensity of pain (severe VAS) compared to patients with mild VAS. Central sensitization process is not always related to stimulation or inflammation in order to induce pain¹⁸, thus explaining a higher increase of hs-CRP level in patients with mild VAS compared to patients with severe VAS.

This is a descriptive study that describes the prevalence along with overview of patient's socio-demographic and clinical features of patients with CPP at Dr. Cipto Mangunkusumo hospital. In Indonesia, no study has been found to describe the clinical features of CPP. The data obtained in this study can be use as a reference for further research. The weakness of this study is that patient sampling only conducted in the Dr. Cipto Mangunkusumo hospital's gynecology clinic as a consequence the population is less varied along with reduce number of patients due to the referral system in force. The other drawback is that the majority of the patients in this study were found endometriosis. For other gynecological disorders such as uterine myoma and benign ovarian cyst, both have been treated at secondary hospitals. As a result, other gynecological disorders were found less in Dr. Cipto Mangunkusumo hospital.

CONCLUSION

During January to March 2016, the prevalence of CPP was 9.78% in Dr. Cipto Mangunkusumo. Endometriosis is the common cause of CPP in the reproductive age. Pain leads to decreased quality of life. The intensity of CPP on the mild and severe VAS decreases the patients' quality of life in every domain (total, physical, psychological, social relationship, and environment). The degree of CPP in

patients with mild and severe VAS does not have a difference in the levels of hs-CRP patients.

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