Research Article

Quality of Life and Sexual Function of Placenta Accreta Spectrum Disorder Patients after Surgery

Kualitas Hidup dan Fungsi Seksual Pasien Placenta Accreta Spectrum Disorder Pascaoperasi

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Abstract

Objective: To evaluate sexual function and quality of life features using two validated Female Sexual Function Index (FSFI) questionnaires, and the Short-Form Health Survey (SF-36) in patients with sexually active on Placenta Accreta Spectrum (PAS) Disorder patient.

Methods: This research is a cross sectional analytic observational study which was conducted in Haji Adam Malik General Hospital from January 2017 - December 2019. Thirty-five study patients who have been diagnosed with PAS disorder and have been treated for at least 3 months were divided into hysterectomy and conservative groups. This study data consisted of primary data from interviews and secondary data from medical records. Independent T test is used if it is normally distributed and Mann-Whitney is used if it is not normally distributed, and it is declared significant if the P value is <0.05.

Result: From 8 assessment variables in the SF-36 questionnaire by comparing the questionnaire scores of PASD patients in the hysterectomy and conservative groups by showing significant results on social function (P value 0.021). Whereas in the FSFI questionnaire, there were 6 variables to assess the sexual function of patients with pain variable showing significant results (P value 0.007).

Conclusions: There were differences in quality of life (social function) and sexual function (pain) in PASD patients in the hysterectomy and conservative groups.

Keywords: female sexual functional index, placenta accreta spectrum, quality of life, short-form health survey.

Abstrak

Tujuan: *Untuk mengevaluasi fungsi seksual dan fitur kualitas hidup dengan menggunakan dua kuesioner tervalidasi Female Sexual Function Index (FSFI), dan Short-Form Health Survey (SF-36) pada pasien dengan placenta accrete spectrum (PAS) disorder yang aktif secara seksual setelah tindakan operasi.*

Metode: *Penelitian ini merupakan penelitian analitik observasional dengan metode potong lintang yang dilaksanakan di Rumah Sakit Umum Haji Adam Malik dari January 2017-December 2019. Tiga puluh lima pasien yang didiagnosis dengan spektrum plasenta akreta dan telah ditatalaksana minimal 3 bulan dibagi menjadi kelompok histerektomi and konservatif. Data penelitian ini terdiri atas data primer dari wawancara dan data sekunder dari rekam medis. Uji T independen digunakan jika berdistribusi normal dan Mann-Whitney digunakan jika tidak berdistribusi normal, serta dinyatakan signifikan jika nilai P <0.05.*

Hasil: *Dari 8 variabel penilaian dalam kuesioner SF-36 dengan membandingkan skor kuesioner pasien PASD pada kelompok histerektomi dan konservatif dengan menunjukkan hasil yang signifikan pada fungsi sosial (nilai P = 0,021). Sedangkan dalam kuesioner FSFI terdapat 6 variabel untuk menilai fungsi seksual pasien dengan variabel nyeri yang menunjukkan hasil yang signifikan (nilai P = 0,007).*

Kesimpulan: *Terdapat perbedaan dalam kualitas hidup (fungsi sosial) dan fungsi seksual (nyeri) pada pasien PASD di kelompok histerektomi dan konservatif.*

Kata kunci: *indeks fungsional seksual perempuan, kualitas hidup, spektrum plasenta akreta, survey kesehatan singkat*

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INTRODUCTION

Placenta Accreta Spectrum (PAS) disorder is a condition of the attachment of the placenta that is not normal to the uterus. Common and severe short-term PAS morbidity, including massive obstetric haemorrhage, need for emergency hysterectomy, intensive care unit admission, prolonged hospitalization, and even maternal death. The incidence of PAS has increased over the past 40 years from approximately 1 in 4,000 in the 1980s to as high as 1 in 533. When this condition is diagnosed antenatally and women are referred to specialist centres for delivery, the outcome improves significantly.[1]

In women with a final diagnosis of placenta increta or percreta, the antenatal diagnosis is associated with reduced bleeding rates and reduced need for blood transfusions, possibly because women diagnosed antenatally are more likely to have preventive therapy for bleeding, and are less likely to attempt to remove their placenta. In addition, more than half of women with placenta accreta, increta, or percreta underwent hysterectomy.[2]

Although short-term PAS morbidity is sufficiently described, there are limited data available regarding long-term health and quality of life after PAS surgery. Patients undergoing peripartum hysterectomy for other conditions may suffer from long-term depression, post-traumatic stress disorder (PTSD), and sexual dysfunction. These long-term effects may be related to several factors including a wider surgical dissection leading to increased scarring and increased emotional burden caused by hysterectomy, loss of fertility.[1]

When patients choose a hysterectomy, they should be counselled by their doctor about their medical condition, reasons for surgery, planned surgical procedures, the expected recovery process, and potential long-term problems. Theoretically, removal of the uterus has the potential to affect the pelvic anatomical structures including the regional nerve supply. Lubrication and orgasm are thought to be related to the supply of nerves to the upper vagina and many nerves pass through the operating field through the uterovaginal plexus. This plexus can be damaged during a hysterectomy, as a result, changes in sexual desire and orgasm can occur after hysterectomy. Hysterectomy can also be associated with loss of bodily integrity, loss of fertility (if the ovaries are removed), and psychosexual and socio-cultural problems including reduced partner intimacy and feelings of loss of femininity. After this operation, the lives of women may be affected in different domains and it is very important to assess the extent of this problem.[3]

This study aims to evaluate sexual function and quality of life features using two validated Female Sexual Function Index (FSFI) questionnaires, and the Short-Form Health Survey (SF-36) in PAS patient with sexually active after hysterectomy or conservative surgery.

METHODS

This research is a cross-sectional analytic observational study that was conducted in Haji Adam Malik General Hospital from January 2017-December 2019. Thirty-five study subjects were collected by total sampling and divided into 2 groups based on their therapy which was the hysterectomy and non-hysterectomy groups. Patients who have been diagnosed with placenta accrete spectrum based on surgical findings and histopathological confirmation have been treated for at least 3 months were considered as study subjects. Patients who could not be interviewed because they could not be contacted or were unable to communicate and had incomplete medical records were excluded from this study.

All eligible study subjects were called and interviewed by phone. All study subjects were asked to fill the validated Indonesian version FSFI and SF-36 questionnaires by google form which the link was sent through text message. There were 5 factors included in the assessment, such as arousal, stimulation, lubrication, orgasm, satisfaction and pain. If the score of FSFI was > 26.5 was interpreted as no sexual dysfunction, while FSFI score < 26.5 was considered significant sexual dysfunction. The SF-36 questionnaire measures eight scales: physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. Each scale is directly transformed into a 0-100 scale on the assumption that each question carries equal weight. The lower the score the more disability. The higher the score the less disability and a score of 100 is equivalent to no disability.

This study data consisted of primary data from interviews and questionnaire scores which were mean of FSFI and SF-36 scores, while secondary data from medical records, consisted of maternal age, gestational age, parity, PAS score, amount of

bleeding, urologic complication, neonatal death and duration of surgery.

The study subjects' characteristics are presented in frequency distribution table. The data was analyzed using Statistical Product and Service Solutions 24th version. Independent T-test is used if it is normally distributed and Mann-Whitney is used if it is not normally distributed, and it is declared significant if the *P-value* is <0.05.

RESULTS

From January 2017 to December 2019, 141 patients were diagnosed with PASD. There are 4 incomplete medical records and 2 patients died. There were 135 patients who met the inclusion and exclusion criteria. Then, there were 40 cellphone numbers of the inactive patients. Of the 95 patients that the researchers could contact, 38 patients did not fill out the questionnaire (did not respond), 13 patients refused, and 35 patients filled out the questionnaire (response).

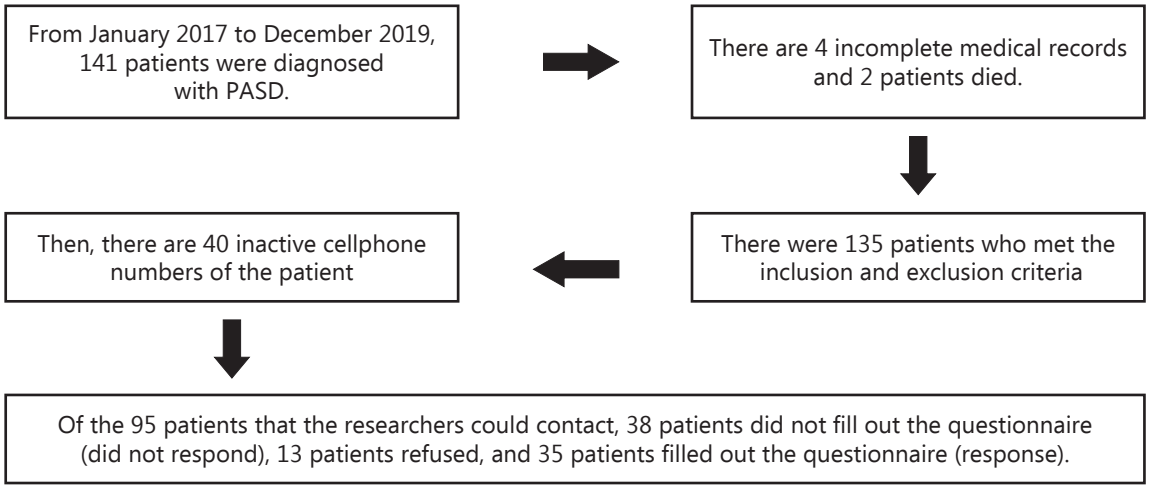

Table 1. Sample Characteristic Based on Type of Surgery

	Total n = 35, (100%)	**Hysterectomy n = 23 (65.7%)**	**Conservative n = 12 (34.3%)**	***P-value***
Maternal Age				0.506[a]
20-35	23 (65.7)	16 (58.3)	7 (41.7)	
>35	12 (34.3)	7 (69.6)	5 (30.4)	
Gestational Age		37 (36-38)	38 (37-39)	0.000[b]
Parity				0.123[a]
Second parity	7 (20)	3 (42.9)	4 (52.1)	
Multiparity	25 (71)	19 (76)	6 (24)	
Grand Multiparity	3 (9)	1 (33.3)	2 (66.7)	
PAS score				0.000[a]
0	7 (20)	0 (0)	7 (100)	
1	5 (14)	0 (0)	5 (100)	
2	13 (37)	13 (100)	0 (0)	
3	10 (29)	10 (100)	0 (0)	
Blood Loss		1093.48 ± 71.12	437.5 ± 48.26	0.000[b]
Urologic Complication				0.293[a]
Yes	2 (5.7)	2 (100)	0 (0)	
No	33 (94.3)	21 (63.6)	12 (36.4)	
Neonatal Death				0.464[a]
Yes	1 (2.9)	1 (100)	0 (0)	
No	34 (97.1)	22 (64.7)	12 (35.3)	
Length After Operation (month)		6 (5-7)	3.5 (3-4)	0.000[b]

[a] *Chi-Square Test,* [b] *T Independent Test*

In this study, data on patient characteristics assessed were maternal age, wherein the hysterectomy and conservative groups the majority were aged 20-35 years 16 (58.3%) and 7 (41.7%) with a p-value of 0.506, the difference in gestational age in the histrectomy group 37 (36-38) and conservative 38 (37-39) with p-value 0.000. The parity characteristics of these patients were dominated by multiparity, in the hysterectomy group 19 (76%) and the conservative group 6 (24%) (p-value 0.217). PAS scores have significant difference between two groups with PAS score 2 in the hysterectomy group and PAS score 0 in the conservative group. The mean bleeding between hysterectomy group was 1093.48 ± 71.12 and the conservative group 437.5 ± 48.26 (p-value 0.000). Urologic complications were present in 2 patients in the hysterectomy group with p value 0.464. Neonatal death was only 1 case in the hysterectomy group with a p-value of 0.293. The difference in duration after surgery in the hysterectomy group was 6 (5-7) months and the conservative group was 3.5 (3-4) months (p-value 0.000)

Table 2. Quality of Life Based on Short form (SF) – 36 Questionnaire

Domain SF 36	Hysterectomy	Conservative	*P-value*
Physical Functioning	70 (10-100)	87.5 (0-100)	0.197
Role Functioning (Physical)	50 (0-75)	50 (0-100)	0.497
Role Functioning (Emotional)	66.7 (0-100)	33.3 (0-100)	0.273
Energy/Fatigue	60 (15-90)	70 (35-95)	0.229
Emotional Wellbeing	76 (20-100)	84 (60-96)	0.134
Social Functioning	62.5 (12.5-100)	87.5 (62.5-100)	0.021*
Pain	67.5 (0-100)	90 (45-100)	0.128
General Health	55 (15-80)	70 (30-100)	0.055

** Mann-Whitney Test*

In the table above, there are 8 assessment variables in the SF-36 questionnaire by comparing the questionnaire scores of PASD patients in the hysterectomy and conservative groups by showing significant results on social function (p-value 0.021) while on physical functioning, role functioning (physical), role functioning (emotional), energy / fatigue, emotional wellbeing, social functioning, pain, and general health do not show significant results.

Table 3. Sexual quality based on Female Sexual Function Index (FSFI)

Domain FSFI	Hysterectomy	Conservative	*P-value*
Desire	36 (3-54)	36 (3-48)	0.913
Arousal	33.82±14.2	36.75±12.4	0.518
Lubrication	39 (0-57)	42 (3-54)	0.916
Orgasm	36 (0-56)	44 (2-56)	0.514
Satisfaction	36 (0-52)	46 (2-56)	0.117
Pain	6 (0-44)	40 (2-56)	0.007*

**Mann-Whitney Test*

Whereas in the FSFI questionnaire, there were 6 variables to assess the sexual function of patients with pain variable showing significant results (p-value 0.007), other variables namely desire, arousal, lubrication, orgasm, and satisfaction did not show significant results.

DISCUSSIONS

In this research on placenta accreta spectrum patients showed mean age of the patients in hysterectomy group was 32.9 + 4.1 years compared to the conservative group was 31.7-31.8 + 4.2-4.5 years. Meanwhile, for the number of parity there was a significant difference between the hysterectomy and conservative groups (p <0.001) with the majority of the parity 3-4 as much as 57.9%; followed by> 5 as much as 36.8% and at least 5.3% with parity 1-2. Whereas in the conservative group, the majority appears with parity 1-2 (54.2% - 87.5%); followed by the parity 3-4 (12.5% - 45.8%); without patients with parity > 5.Based on previous C-section history, there was a significant difference between the

hysterectomy and conservative groups (p <0.001) with the majority of 47.4% of hysterectomy patients having history of 3 times C-section, followed by 42, 1% with 4 times, and 10.5% as much as 2 times, whereas in the conservative group it appears that the majority of patients with a history of 2 times C-section (37.5% -50%), followed by 1 times (20,8%-50%), 37.5% 3 times and only 4.2% with a history of 4x C-section. [4]

On 97 consecutive patients with PAS disorders that were treated in their hospital showed that mean patient age was 29.89 (range: 20 to 40) years. The average gestational week at pregnancy termination was 19.36 (range: 13 to 27+ 4) weeks. The median gravidity was 2, including 3 nulliparous patients (10.3%). The most common risk factor was previous curettage operation (75.9%), followed by previous cesarean delivery (69.0%) and placenta previa (41.4%).[5]

On the placenta accreta spectrum patients showed that in the conservative group, the mean blood loss within 24 hours after surgery was significantly lower than the hysterectomy (H) group (1518 ± 1275 vs 4309 ± 2550 ml in group H, p < 0.001). Patients with> 1000 ml blood loss in group H were more significantly than in group C (93.6% [131/140] vs. 61.4% [86/140], p <.001). More patients received blood transfusions in group H than in group C (p = 0.014). There were no significant differences between the two groups in terms of bladder injury, postoperative anemia, fever, and disseminated intravascular coagulation. The neonatal outcomes in the two groups showed no difference.[6]

The research which evaluated Quality of Life (QoL) after hysterectomy in placenta accreta (PAS) spectrum patients showed that patients with PAS experienced significantly more continuous pain after 6 months post-partum on the SF-36 scoring. Specifically, women with accreta reported a "moderate" pain score over 4 weeks versus a "very mild" pain score mean for patients with cesarean complications. (p = 0.025). When adjusted for the SF-36 domain and compared the hysterectomy outcome between accreta patients and cesarean complications showed a physical function of 89.6 vs 94.3 (p = 0.237), physical role function 80.4 vs 91.4 (p = 0.197), emotional role function 76.2 vs 88.6 (p = 0.175), energy and fatigue 48.1 vs 54.3 (p = 0.346), emotional well-being 73.5 vs 78.3 (p = 0.411), social function 82 , 5 vs 89.5 (p = 0.241), pain 66.8 vs 83.4 (p = 0.013) and general health 74.3 vs 74.9 (p = 0.929). From these results, it appears that the pain domain has a significant difference between the hysterectomy group with placenta accreta spectrum indications compared to complications of cesarean section.[7]

There was a prospective cohort study of women with risk factors for PAS enrolled before birth. The correspondents are women who underwent cesarean hysterectomy due to PAS. At 6 months postpartum, women were at increased risk of re-admission (odds ratio [OR] 5.83, 95% confidence interval [CI] 1.40-24.3), post-coitus pain (OR 2.50, 95% CI 1.04 6.02), anxiety / worry (OR 3.77, 95% CI 1.43-9.93), but statistically not significant for the likelihood of incidence of additional surgery (OR 3.39, 95% CI 0, 99-11.7) or sadness and depression (OR 2.45, 95% CI 0.87 6.95). At 12 months, women with PAS were more likely to report post coitus pain, sadness / depression, and anxiety / worry. At a time duration of 36 months, women with PAS were more likely to report sadness / depression, anxiety / worry, and additional surgery. Women with PAS reported significantly lower quality of life in the domains of physical function, role function, social functioning, and pain at 6 months postpartum, but not in other domains of quality of life. Decreased quality of life was also reported at 12 and 36 months post-hysterectomy in the PAS group.[1]

The present study at assessing sexuality after hysterectomy using the Female Sexual Function Index (FSFI) showed that Total FSFI score was 19.4 ± 3.6 (median 19.8) and for the domains: 3.2 ± 0.9 (desire); 3.2 ± 0.9 (arousal); 3.1 ± 0.6 (lubrication); 3.1 ± 0.7 (orgasm); 3.5 ± 1.1 (satisfaction) and 3.2 ± 1.2 (pain/dyspareunia). All women displayed sexual dysfunction (total FSFI score ≤ 26.55).[8] The long-term effects of hysterectomy affect psychological as well as physical health. Some studies reported that hysterectomy could lead to sexual dysfunction and depression.[9] Concerns about sexual function are an important cause of anxiety for women undergoing hysterectomy. Indeed, 21 % of women with a mean age of 59 stated that the uterus is important for their sexual experience and after hysterectomy 10–20 % may experience deterioration of their sexual function. possible pathways for deleterious physical effects of hysterectomy: scar tissue in the vagina might prevent full ballooning of the upper vagina, removed tissue may reduce the capacity for vasocongestion and with or without nerve damage, this could reduce arousal or cause dyspareunia. Vaginal length was not related to sexual function. Experimental evidence confirmed that hysterectomy caused sensory

loss in the vagina, without impacting sexual function.[10] Women undergoing hysterectomy reported low normal level of vaginal lubrication that implied the potential sexual-mental arousal following the hysterectomy although no significant difference was found between groups undergoing hysterectomy and groups with fibroids but not undergoing hysterectomy in terms of sexual arousal women with a history of radical hysterectomy showed a significant decrease in maximum vaginal pulse amplitude during sexual arousal, and the variation in vaginal pulse amplitude during sexual arousal occurred with regard to the fact that all the patients experienced equally strong sexual arousal.[11] However, studies of sexual function assessed by FSFI in placenta accreta patients undergoing hysterectomy have not been found.

CONCLUSION

There were differences in quality of life (social function) and sexual function (pain) in PASD patients in the hysterectomy and conservative groups.

Abbreviations

FSFI: Female Sexual Function Index ; **SF-36:** Short-Form Health Survey; **PAS:** Placenta accreta spectrum; **PTSD:** post-traumatic stress disorder; **QoL:** Quality of Life.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Authors' contributions

All authors made substantial contributions to this manuscript. They all participated in the conception and drafting of the manuscript including the interpretation of data from literature and (critically) revised this manuscript. All authors approved the final version to be published.

Ethics approval and consent to participate

Ethical approval for the study was granted by the Medical Ethics Committee of Universitas Sumatera Utara **(NO:32/KEP/USU/2020)**. All participants gave informed written consent prior to any collection of data.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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