

Psychosomatic status of women of reproductive age with adenomyosis

M. E. Azizova

Azerbaijan Medical University, Baku

The objective: to study the impact of adenomyosis on the psychosomatic status of women of reproductive age.

Materials and methods. A complex clinical-laboratory and instrumental prospective examination for women with adenomyosis was conducted in 224 patients aged 30 to 50 years (average age – 42.0 ± 1.8 years). These patients were included in the main group of the study. The patients of the main group were divided into two subgroups depending on the form of adenomyosis: Group I – diffuse form – 106 women, Group II – nodular form – 118 women.

The control group included 84 healthy women of reproductive age with a regular ovulatory menstrual cycle and no history of gynecological diseases.

To assess the psychosomatic status of patients with adenomyosis we used the Aleksandrowicz method: *a questionnaire of neurotic disorders – symptomatic (QND- S)*.

Results. The conducted studies established that the largest number of patients were 36–40 years old – 92 ($41.1 \pm 3.3\%$) women in the main group, and 37 ($44.0 \pm 5.4\%$) women in the control group. A total of 152 ($67.9 \pm 3.1\%$) patients of the main group were of reproductive age, 72 ($32.1 \pm 3.1\%$) patients were of perimenopausal age.

In patients with adenomyosis disorder of the menstrual cycle in the form of hyperpolymenorrhea was found in almost every third patient, and algomenorrhea – in almost every second person. The diagnosis was established for the first time in $8.49 \pm 2.7\%$ of patients in Group I (9 women) and $3.38 \pm 1.8\%$ in Group II (4 women).

Less than 5 years of the disease was observed in $34.91 \pm 4.6\%$ of patients of the Group I (37 women) and in $51.69 \pm 4.6\%$ of the Group II (61 women). From 5 to 10 years, the disease was observed in $56.60 \pm 4.8\%$ of patients of the Group I (60 women) and in $44.93 \pm 4.6\%$ of the Group II (53 women). Affective stress (up to 15.50%), sleep disorders (up to 20.22%), anxiety-phobic disorders (up to 11.18%) were determined most often.

Conclusions. In the vast majority of patients of reproductive age who have adenomyosis with pain syndrome, the personal characteristics are dominated by symptoms such as anxiety-phobic and depressive disorders, affective tension, sexual, obsessive and anankastic disorders.

Keywords: adenomyosis, diagnosis, quality of life, endometriosis, questionnaire, uterus, differential diagnosis.

Психосоматичний стан жінок репродуктивного віку з аденоміозом

M. E. Азізова

Мета дослідження: вивчення впливу аденоміозу на психосоматичний стан жінок репродуктивного віку.

Матеріали та методи. Проведено комплексне клініко-лабораторне та інструментальне проспективне обстеження на аденоміоз 224 хворих віком від 30 до 50 років (середній вік – $42,0 \pm 1,8$ року). Ці пацієнтки увійшли до основної групи дослідження. Пацієнтки основної групи були розподілені на дві підгрупи залежно від форми аденоміозу: I група – дифузна форма – 106 жінок, II група – вузлова форма – 118 жінок.

До контрольної групи включено 84 здорові жінки репродуктивного віку з регулярним овуляторним менструальним циклом і без гінекологічних захворювань в анамнезі.

Для оцінювання психосоматичного статусу хворих на аденоміоз використовували метод *Aleksandrowicz*: опитувальник невротичних розладів – симптоматичний (QND-S).

Результати. Проведеними дослідженнями встановлено, що найбільше число становлять пацієнтки віком 36–40 років – 92 ($41,1 \pm 3,3\%$) жінки в основній групі, а у контрольній групі – 37 ($44,0 \pm 5,4\%$) жінок. Усього 152 ($67,9 \pm 3,1\%$) пацієнтки основної групи були репродуктивного віку, 72 ($32,1 \pm 3,1\%$) пацієнтки – перименопаузального віку.

У хворих на аденоміоз порушення менструального циклу у формі гіперполіменореї виявляли майже у кожній третій хворій, а альгоменорею – майже у кожній другій. Діагноз уперше встановлено у $8,49 \pm 2,7\%$ пацієнток I групи (9 жінок) та $3,38 \pm 1,8\%$ – у II групі (4 жінки).

Менше 5 років захворювання спостерігалось у $34,91 \pm 4,6\%$ хворих I групи (37 жінок) та у $51,69 \pm 4,6\%$ – II групи (61 жінка). Від 5 до 10 років захворювання спостерігалось у $56,60 \pm 4,8\%$ хворих I групи (60 жінок) та у $44,93 \pm 4,6\%$ – II групи (53 жінки). Найбільш часто виявляли афективне напруження (до $15,50\%$), розлади сну (до $20,22\%$), тривожно-фобічні розлади (до $11,18\%$).

Висновки. У переважній більшості пацієнток репродуктивного віку, які мають аденоміоз з больовим синдромом, в особистісних характеристиках переважають такі симптоми, як тривожно-фобічні та депресивні розлади, афективне напруження, сексуальні, obsесивні та ананкастичні розлади.

Ключові слова: аденоміоз, діагностика, якість життя, ендометріоз, анкета, матка, диференціальна діагностика.

Endometriosis is one of the ubiquitous gynecological diseases that has a negative impact on the physical, social and psychological state of patients, leading to a decrease in health-related quality of life. Endometriosis manifests itself as a chronic inflammatory disease characterized by the presence of endometrium-like tissue outside the uterus [1, 2]. The prevalence of this disease is described in different studies and varies from 6 to 10% [3].

Endometriosis presents with characteristic symptoms such as dysmenorrhea, infertility, deep dyspareunia, chronic fatigue, chronic pelvic pain and ovulation pain. Epidemiological studies indicate that chronic pelvic pain is diagnosed in 15–20% of women of reproductive age [4–6]. Adenomyosis is often combined with endometriosis and is a similar disease [7, 8]. It is characterized by infiltration of endometrial tissue into the uterine myometrium [9]. Adenomyosis is also characterized by the appearance of symptoms of menorrhagia, dysmenorrhea and chronic pelvic pain, leading to infertility and adverse pregnancy outcomes [10, 11].

Although adenomyosis was first diagnosed approximately 50 years ago, today the condition remains understudied and underdiagnosed due to a lack of a uniform definition, diagnostic difficulties, and inadequately defined symptoms.

Adenomyosis and endometriosis have many difficult issues in common for diagnosis and treatment, both in terms of symptoms and fertility-related problems. As a result, a long period elapses between the onset of symptoms of the disease and the establishment of a final diagnosis for endometriosis, and for adenomyosis this period is expected to be even longer [12–15]. Both diseases have been found to negatively affect quality of life and lead to fatigue and depression [16, 17]. Endometriosis causes significant economic loss due to disability in women, which can be compared to diabetes mellitus and rheumatoid arthritis [18–20].

This aspect is very important, since almost all patients with adenomyosis and endometriosis are of working age. In addition, a decline in the quality of life of women of reproductive age can significantly affect personal and professional relationships, social contacts, sexuality, family planning in the presence of infertility, or psychological well-being. The impact of adenomyosis on the quality of life of women of reproductive age has not been studied enough [21–24].

According to the World Health Organization, quality of life is “a person’s perception of their position in life in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards and concerns.” [25]. Therefore, this study aims to explore how adenomyosis affects women’s quality of life and determine which areas are most affected, as it is a common condition among women.

In this regard, **the purpose of our study** was to study the effect of adenomyosis on the psychosomatic status of women of reproductive age.

MATERIAL AND METHODS

The study was conducted on the basis of Educational Surgery Clinics of Azerbaijan Medical University and Baku Health Center in the period from 2021 till 2023. The research was approved by Ethical Committee of Azerbaijan Medical University (protocol No 3; 04/03/2021)

In the course of studying this study, a comprehensive clinical, laboratory and instrumental prospective

examination was carried out on 224 patients aged 30 to 50 years (average age – 42.0 ± 1.8 years) with adenomyosis. These patients constituted the main study group. Patients of the main group were divided into 2 subgroups depending on the form of adenomyosis (Group I – diffuse form – 106 women, Group II – nodular form – 118 women).

The control group consisted of 84 women of relatively healthy reproductive age, with a regular ovulatory menstrual cycle and without a history of gynecological diseases (average age – 44.5 ± 1.3 years).

Cohort studies are prospective. Criteria for inclusion in the study: patients diagnosed with adenomyosis; age of patients from 30 to 50 years; obtaining written consent of the patient to participate in examinations.

Exclusion criteria from the study: detection of a malignant pathological process in the organs of the reproductive system or other localization; presence of hormone-synthesizing ovarian tumors; pregnancy and lactation; patients younger than 30 years and older than 50 years; refusal to participate in the study.

The clinical characteristics of the examined women were based on the study of complaints, obstetric-gynecological and somatic anamnesis. The data of general and gynecological anamnesis, peculiarities of menstrual function were studied in all patients. Special attention was paid to the inflammatory diseases of the genital organs, spontaneous abortions in the anamnesis, premature pregnancies, antenatal fetal death, the course of pregnancy, as well as their results. To assess the psychosomatic status of patients with adenomyosis, we used Aleksandrowicz method: a questionnaire of neurotic disorders – symptomatic (QND-S) [26].

This questionnaire allows for a quantitative determination of the severity of neurotic syndromes in patients. The technique consists of 138 complaints of a neurotic nature, the severity and presence of which is assessed by the respondent.

Processing of test results:

«Did not have» – 0 points.

«It was there, but it was only a slight burden» – 4 points.

«It was moderate» – 5 points.

«It was very painful» – 7 points.

The sum of points for individual subscales (I – XIII) and the total amount of points (summing up the indicators of all subscales I – XIII) are calculated.

Statistical processing of the obtained data was carried out by analyzing the results using Microsoft Excel spreadsheet programs, generated in accordance with the objectives of the research.

RESULTS AND DISCUSSION

Studies have found that the largest group consists of patients aged 36–40 years. There were 92 women ($41.1 \pm 3.3\%$) of this age in the main group, and 37 women ($44.0 \pm 5.4\%$) in the control group. The age characteristics of the patients are presented in Table 1.

A total of 152 patients ($67.9 \pm 3.1\%$) of the main group were of reproductive age, and 72 patients ($32.1 \pm 3.1\%$) were of perimenopausal age. The study of the menstrual history in the studied groups determines the possible difference between the groups in the duration of menstruation and the duration of the menstrual cycle.

Table 1

Age characteristics of the examined patients

Age Groups	30–35 years old		36–40 years old		41–50 years old		χ^2 I–II	p
	Abs. number	%	Abs. number	%	Abs. number	%		
Group I (n=106)	28	26.4±4.3	45	42.5±4.8	33	31.1±4.5	0.01	0.9055
Group II (n=118)	32	27.1±4.1	47	39.8±4.5	39	33.1±4.3	0.58	0.4481
Total (n=224)	60	26.8±2.9	92	41.1±3.3	72	32.1±3.1	-	-
Control group (n=84)	21	25.0±4.7	37	44.0±5.4	26	31.0±5.0	2.92	0.0874

The relative risk of the age of the first menstruation in the development of endometrial hyperplastic processes was not at a statistically significant level, since the lower limit of the 95% confidence interval was less than 1 (Table 2).

The menstrual period (days) in patients of the compared groups was characterized by some features. The data obtained revealed a significant difference in the duration of the menstrual cycle between patients with and without adenomyosis, which, undoubtedly, can serve as a criterion for choosing the severity of the stage of development of adenomyosis and its spread. The average age of the onset of menarche in Group I was 10.628±2.074 years old, in Group II – 11.401±1.14 years old and in the control group – 13.124±1.022 years old.

The average duration of the menstrual cycle was 24.453±1.530 days in Group I, 25.348±1.489 days – in Group II and 29.722±1.632 days – in control group.

In patients with adenomyosis, menstrual irregularity of the hyperpolymenorrhea type occurs in almost every third patient, and algodismenorrhea occurs in almost every second patient (Table 3).

From the data presented, it can be seen that hyperpolymenorrhea in Group I (37 women) occurred in 34.9±4.6% that is more frequent than in patients in Group II (28 women) – in 23.7±3.9% and in the control group (9 women) – 10.7±3.4%. Algodismenorrhea demonstrated the similar tendency and prevailed in Group I. This symptom was observed by groups, respectively: 49.1±4.8% (52 women), 27.9±4.1% (33 women) and 7.1±2.8% (6 women).

Table 2

Age of menarche onset as a progressive factor of endometrial pathology (relative risk)

Age	Confidence interval		
	Group I (n=106)	Group II (n=118)	Control group (n=84)
9 years old	0.76 (0.42–1.4)	-	-
10 years old	0.78 (0.43–1.5)	0.44 (0.18–1.2)	-
11 years old	0.98 (0.45–2.17)	0.57 (0.08–3.96)	-
12 years old	-	0.79 (0.3–1.56)	1.17 (0.23–5.59)
13 years old	-	-	1.77 (0.40–7.76)
14 years old	-	-	2.04 (0.36–11.48)

The duration of the disease is of great importance when conducting a study of a particular nosology. From the moment of diagnosis, adenomyosis was observed from 3 to 8 years, the average diagnosis period was 6.2±1.4 years. It should be noted that, as a rule, the duration of diagnosis increases in parallel with the prevalence of adenomyosis. In most patients with adenomyosis, the duration of the disease ranged from 5 to 10 years (Table 4).

Table 3

The type of menstrual cycle disorder in the examined patients

Groups	Group I (n=106) M±m		Group II (n=118) M±m		Control group (n=84) M±m		Statistical coefficient	
	Abs. number	%	Abs. number	%	Abs. number	%	χ^2 I–II	p
Hyperpolymenorrhea	37	34.9±4.6	28	23.7±3.9	9	10.7±3.4	3.39	0.0657
Algodismenorrhea	52	49.1±4.8	33	27.9±4.1	6	7.1±2.8	10.55	0.0012

Table 4

Duration of the disease in patients with adenomyosis

Duration of the disease (years)	Group I (n=106)		Group II (n=118)	
	Abs. number	%	Abs. number	%
First identified disease (just diagnosed)	9	8.49±2.7	4	3.38±1.8
Less than 5 years	37	34.91±4.6	61	51.69±4.6
5–10 years	60	56.60±4.8	53	44.93±4.6

Table 5

History of gynecological diseases in patients with adenomyosis

Indicators	Group I (n=106)		Group II (n=118)		Total (n=224)		Control group (n=84)		χ^2 I-II	P
	Abs. number	%	Abs. number	%	Abs. number	%	Abs. number	%		
Non-inflammatory pathology of the cervix	58	54.71±4.8	56	47.45±4.6.	114	50.89±3.3	-	-	1.18	0.2779
Uterine fibroids	60	56.60±4.8	53	44.93±4.6	113	50.45±3.4	-	-	3.05	0.0806
IDPO	47	44.33±4.8	66	55.13±4.6	113	50.45±3.4	6	7.1±2.8	3.00	0.0832
PCOS	39	36.79±4.6	34	28.81±4.2	73	32.58±3.1	2	2.38	1.62	0.2033
External genital endometriosis	37	34.9±4.6	33	27.9±4.1	70	31.25±3.1	-	-	1.25	0.2632
Bacterial vaginosis	32	31.94±4.5	32	27.1±4.1	64	28.57±3.0	-	-	0.26	0.6116
Vaginitis	28	26.4±4.3	28	23.7±3.9	56	25.27±2.8	-	-	0.21	0.6430
Cysts of the ovaries	18	16.24±3.6	12	10.16±2.8	30	13.39±2.3	2	2.38	2.23	0.1350
Prolapse of the walls of the vagina and uterus	9	8.49±2.7	8	6.78±3.3	17	7.58±1.8	-	-	0.23	0.6293
Chronic inflammatory diseases of the uterine appendages	14	13.20±3.3	7	5.93±2.1	21	9.37±4.0	-	-	3.48	0.0622
Genitourinary infections	24	22.64±4.1	21	17.79±3.5	45	20.08±2.6	9	10.7±3.4	0.82	0.3662

Notes: PCOS – polycystic cystic ovary syndrome; IDPO – inflammatory diseases of the pelvic organs.

As it turned out, the diagnosis was made for the first time in Group I was more frequent than in Group II (8.49±2.7% and 3.38±1.8%, respectively). In contrast, the disease lasting less than 5 years was observed in patients of the Group I less frequent than in the Group II. The disease lasting from 5 to 10 years was observed in 56.60±4.8% of patients of the Group I and in 44.93±4.6% of the Group II.

When analyzing gynecological morbidity and extragenital pathology in the examined patients, it was found that a history of gynecological diseases was observed in all examined women with various forms of adenomyosis. The distribution by nosology of gynecological morbidity is presented in Table 5.

These data show that the following pathologies were most common in patients with various forms of the disease: cervical pathology (114 women, 50.89±3.3%), uterine fibroids (113 women, 50.45±3.4%) and IDPO (113 women, 50.45±3.4%). These diseases occurred in almost every second patient.

The other pathologies were revealed less frequently and had some features in women from compared groups.

Polycystic ovary syndrome was observed in 32.58±3.1% of patients (73 women), respectively, by groups: in Group I – 36.79±4.6% (39 women), in Group II – 28.81±4.2% (34 women). Symptoms of PCOS were more often observed in patients with pathological endometrial processes.

External genital endometriosis was noted somewhat less frequently – in 31.25±3.1% of patients (70 women), respectively, by groups: in Group I – 34.9±4.6% (37 women), in Group II – 27.9±4.1% (33 women).

Cysts of the ovaries (13.39±2.3%, 30 women) and genitourinary infections (20.08±2.6%, 45 women) were slightly less common.

In the control group, the percentages of diseases revealed were significantly less than in women from main groups: IDPO – 7.1±2.8% (6 women), PCOS – 2.38% (2 women), cysts of the ovaries – 2.38% (2 women), genitourinary infections – 10.7±3.4% (9 women).

Complaints according to the questionnaire QND-S are grouped into 13 forms of neurotic disorders (Table 6).

The data presented in Table 5 indicate that in the compared groups of patients with adenomyosis there are significant differences in the psychological state. As it turned out, in the vast majority of patients with pain syndrome, the personal characteristics are dominated by symptoms such as anxiety-phobic and depressive disorders, affective tension, sexual, obsessive and anankastic disorders.

The psychological disorders of the women with various gynecological pathologies have recently been studied in numerous clinical studies. Nowadays, chronic pelvic pain is considered a condition that can significantly affect the quality of life [6, 17].

Thus, N. Matviyukiv et al. (2021) in order to assess the psychological status and quality of life of women with chronic pelvic pain syndrome during treatment of recurrent inflammatory processes of the pelvic organs observed 100 women of reproductive age. The authors compared groups based on different methods of painkillers administration and revealed the positive results of the application of a complex approach in the treatment of inflammatory processes of the pelvic organs, which are accompanied by pelvic pain. But in contrast with our study the researches used several scales: visual analog scale, McGill questionnaire, Spielberger–Hanin questionnaire, SF-36 questionnaire etc. In addition, we did not analyze psychological condition depending on treatment [5].

Table 6

Psychosomatic status in patients with adenomyosis

Groups of neurotic disorders QND-S:	Pain syndrome			
	Group I (n=106)		Group II (n=118)	
	Available (n=74)	Not available (n=32)	Available (n=82)	Not available (n=36)
1. Anxiety-phobic disorders	11.18±0.41 ***	7.11±0.38	9.14±0.32 ***	6.28±0.02
2. Depressive disorders	10.14±0.38 ***	6.93±0.22	8.21±0.28 ***	5.75±0.02
3. Affective tension	15.50±0.17 ***	8.45±0.13	13.16±0.11 ***	7.24±0.03
4. Sleep disorders	20.22±0.19***	6.14±0.9	17.29±0.12***	6.02±0.03
5. Affective lability	2.49±0.03	2.14±0.06	2.04±0.01	1.53±0.01
6. Asthenic disorders	6.38±0.23 ***	3.98±0.11	5.26±0.02 ***	2.46±0.02
7. Sexual disorders	9.94±0.31 ***	6.43±0.13	7.35±0.03 ***	5.48±0.02
8. Derealization-depersonalization disorders	2.43±0.13*	2.40±0.11	1.84±0.02*	1.41±0.02
9. Obsessive disorders	9.84±0.19 ***	6.49±0.13	7.32±0.03 ***	5.18±0.02
10. Disorders of social contacts	7.34±0.13 ***	4.41±0.09	5.27±0.02 ***	3.27±0.01
11. Hypochondriac disorders	3.66±0.12*	3.10±0.19	2.16±0.01*	1.25±0.01
12. Anankastic disorders	11.43±0.38 ***	7.44±0.35	9.18±0.32 ***	6.29±0.03
13. Somato-vegetative disorders	2.77±0.16 *	2.11±0.12	2.08±0.02 *	1.75±0.01

Notes: * – p<0.05; *** – p<0.001 (when comparing groups of patients with and without pain syndrome using the Student's criterion).

In the other work, O. Solomko et al. (2022) evaluated the changes in the quality of life of patients with chronic pelvic pain syndrome depending on accompanying pathologies. They examined 150 patients divided into groups: with suspicion of endometriosis and suspicion for combined benign proliferative diseases of reproductive organs. According to results, significantly lower indicators of SF-36 questionnaire were observed in the group with chronic pelvic pain and combined hyperproliferative pathology compared to the group with endometriosis (p<0.05) [6].

We studied adenomyosis, which is close to endometriosis, and identified changes in the psychological state. Our study did not specifically assess quality of life, but it is clear that psychological disorders influence these measures.

However, it is should be taking into account that sometimes pelvic pain is not caused by adenomyosis. S. Shurpyak et al. (2023), analyzed the diagnostic and therapeutic measures in the presence of pelvic pain syndrome in women in routine clinical practice, because chronic pelvic pain for a long time remains one of the important medical and social problems. They revealed that

in more than half of the analyzed cases (51.5%), the reason for the referral of women for the purpose of examination is not a pelvic pain syndrome, but a pathology that could be related to or be a consequence of diseases that lead to the development of pelvic pain (abnormal uterine bleeding, infertility, etc.) [4].

N. Li et al. (2022) evaluated the effect of adenomyosis on anxiety, depression, and quality of life and found out that compared with leiomyoma, adenomyosis is associated with a higher risk of anxiety and depression, with a poorer quality of life. These results are similar to our findings in adenomyosis and highlight the need for early diagnosis of psychological disorders [16].

CONCLUSIONS

Adenomyosis affects many aspects of the psychological state of patients with this pathology. Patients with adenomyosis with pain syndrome have the personal characteristics such as anxiety-phobic and depressive disorders, affective tension, sexual, obsessive and anankastic disorders. This study represents a first step in understanding the perspectives of improvement of psychological state in women with adenomyosis.

Information about the author

Azizova Mahbuba Eldar – MD, PhD, Associate Professor, Department of Obstetrics and Gynecology II, Azerbaijan Medical University, Baku; tel: (+99412) 597-38-98. E-mail: mic_amu@mail.ru
ORCID: 0009-0006-8567-8594

Відомості про автора

Азізова Махбуба Ельдар – канд. мед. наук, доц., кафедра акушерства та гінекології II, Азербайджанський медичний університет, м. Баку; тел.: (+99412) 597-38-98. E-mail: mic_amu@mail.ru
ORCID: 0009-0006-8567-8594

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