

# Psychoemotional state and quality of life of nulliparous women with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium in the perimenopausal period

*T.G. Laskava, V.A. Beniuk, O.A. Shcherba, T.V. Kovaliuk, L.D. Lastovetska*  
Bogomolets National Medical University, Kyiv

**The objective:** to study the features of the psychoemotional state and quality of life of nulliparous women with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium in the perimenopausal period.

**Materials and methods.** 60 nulliparous women with recurrent cervical epithelial flat dysplasia that occurred after treatment with surgical methods in the perimenopausal period (the main group) and 38 women without gynecological and somatic pathologies in the perimenopausal period (control group) were examined.

All patients were examined in accordance with the regulatory orders of the Ministry of Health of Ukraine. The assessment of neurovegetative and psychoemotional manifestations was carried out according to the Kupperman index, indicators of the quality of life and the Lusher color test.

**Results.** The data of the medical history and clinical examination of patients were evaluated. This makes possible to identify a risk group among nulliparous women in the perimenopausal period for the development of recurrent squamous epithelial exocervical dysplasia of the cervical epithelium.

In the main group, an increase in the Kupperman menopausal index by almost 1.5 times was found, as well as a significant decrease in indicators of psychosocial adaptation according to Lusher test to 40% and quality of life (physical component of health was  $72.5 \pm 6.4$  and  $93.1 \pm 4.7$  points in the main and control groups, respectively, mental component –  $54.2 \pm 4.1$  and  $91.4 \pm 2.3$  points, respectively).

**Conclusions.** In infertile women with the menopausal changes, the recurrent squamous epithelial exocervical dysplasia of the cervical epithelium is a form of complicated course of dysplasia, and has a multifactorial genesis, in which conditions arise for the implementation of the neoplastic process.

The clinical manifestations of the complicated course of the perimenopausal period significantly worsen the quality of life and general health in nulliparous women, especially on the background of recurrent squamous epithelial exocervical dysplasia of the cervical epithelium after surgical treatment, which is evidenced by more pronounced climacteric manifestations, reduction of physical and social activities, and emotional status.

**Keywords:** perimenopausal period, cervical dysplasia, quality of life.

## Психоемоційний стан і якість життя жінок, які не народжували, з рецидивною плоскоепітеліальною екзоцервікальною дисплазією епітелію шийки матки у перименопаузальний період

*Т.Г. Ласкава, В.О. Бенюк, О.А. Щерба, Т.В. Ковалюк, Л.Д. Ластовецька*

**Мета дослідження:** вивчення особливостей психоемоційного стану і якості життя у жінок, які не народжували, з рецидивною плоскоепітеліальною екзоцервікальною дисплазією епітелію шийки матки у перименопаузальний період.

**Матеріали та методи.** Обстежено 60 жінок, які не народжували, з рецидивною плоскоепітеліальною екзоцервікальною дисплазією епітелію шийки матки, що виникла після лікування хірургічними методами, у перименопаузальний період (основна група) і 38 жінок у перименопаузальний період без гінекологічної та соматичної патології (контрольна група).

Усім хворим проводили обстеження згідно з регламентними наказами МОЗ України. Оцінювання нейровегетативних та психоемоційних проявів проведено за індексом Куппермана, показниками визначення якості життя та кольоровим тестом Люшера.

**Результати.** Оцінено дані анамнезу та клінічного обстеження хворих, що дозволяє виділити групу ризику серед жінок, які не народжували, стосовно розвитку рецидивної плоскоепітеліальної екзоцервікальної дисплазії епітелію шийки матки у перименопаузальний період.

В основній групі встановлено підвищення менопаузального індексу Куппермана майже в 1,5 раза щодо контрольної групи, а також значне зниження показників психосоціальної адаптації за Люшером майже на 40 % і якості життя (фізичний компонент здоров'я становив  $72,5 \pm 6,4$  та  $93,1 \pm 4,7$  бала в основній та контрольній групах відповідно, психічний компонент –  $54,2 \pm 4,1$  та  $91,4 \pm 2,3$  бала відповідно).

**Висновки.** У жінок, які не народжували, на тлі менопаузальних змін рецидивна плоскоепітеліальна екзоцервікальна дисплазія епітелію шийки матки є формою ускладненого перебігу дисплазії та має мультифакторний генез, за якого виникають умови для реалізації неопластичного процесу.

Клінічні прояви ускладненого перебігу перименопаузального періоду значно погіршують якість життя і в цілому загального здоров'я у жінок, які не народжували, особливо на фоні рецидивної плоскоепітеліальної екзоцервікальної дисплазії епітелію шийки матки після хірургічного лікування, про що свідчать більш виражені клімактеричні прояви, зниження фізичної і соціальної активності, емоційного статусу.

**Ключові слова:** перименопаузальний період, дисплазія шийки матки, якість життя.

Despite significant advances in diagnosis and treatment, cervical cancer in women continues to occupy a leading position, taking the third place in the structure of gynecological oncopathology. In Ukraine, according to the National Cancer Register of Ukraine for 2021, the incidence of cervical cancer was 17.9 per 100 thousand female population, mortality-7.9 per 100 thousand population [1, 2]. Therefore, one of the key tasks facing a modern practical doctor is timely diagnosis, effective treatment and prevention of precancerous processes of the cervix. Special attention in this regard should be paid to women of the perimenopausal period, who are traditionally classified as at risk for developing oncopathology, including the cervix [1–4].

Increasing the socio-economic development of Ukraine, increasing the life expectancy of the population leads to the fact that almost a third of her life a modern woman is in the menopausal period, taking an active part in the life of society [5]. The perimenopausal period covers the period of menopausal transition, menopause, and the first 2 years of postmenopause. The terms climacteric period are currently rarely used [6].

In most women, this period proceeds without pronounced disorders. However, in 8–10% of cases, complications occur. As a rule, during this period, the production of progesterone begins to decrease in a woman's body, and only then – estrogens. Therefore, women may experience symptoms associated with both a relative excess of estrogens against the background of a decrease in progesterone levels (mastalgia, abnormal uterine bleeding, endometrial neoplasia) and their deficiency (menopausal symptoms) [6, 7].

A prolonged decrease in sex hormones leads not only to a decrease in skin turgor, but also to a change in the type of hair to male due to the relative predominance of androgens. Urogenital atrophic changes also occur in the mucous membranes of the genital and urinary systems. The vagina becomes smaller, especially in its upper parts, the mucous membrane is pale, thin and dry. The labia minora look pale and dry, and the content of adipose tissue in the labia majora decreases. Often develops atrophic vaginitis, pruritus of the vulvovaginal region, dyspareunia, dysuria, frequent and strong urge to urinate, urinary incontinence, cystitis [8, 9].

The perimenopausal period is the age of the highest spiritual and intellectual development of a woman, achieving success in her career, and economic confidence [8]. Therefore, neurovegetative and psychoemotional disorders during this period acquire a special medical and social significance. Mood lability, increased excitability, sleep disorders, vegetative-vascular disorders (hot flashes, etc.), depression, etc. are typical features of women during menopause [10, 11].

Recently, the world has been actively studying the role of negative social and behavioral factors in the spread of diseases of the female genital organs, which contribute

to the violation of neuro-vegetative regulation of organs and systems, reduce the immunological reactivity of the body, etc. [10, 12–17]. Social factors include constant stressful situations, Low standard of living (insufficient and irrational nutrition), chronic alcoholism, and drug addiction. Behavioral factors include a high frequency of sexual contact, a large number of sexual partners, non-traditional forms of sexual contact, sexual intercourse during menstruation, etc. [18–21].

In recent decades, the concept of quality of life (QOL) has shown increasing interest in both public and medical circles. Within the framework of the QOL concept developed by experts of the International center for quality of life research, the concept of quality of life is defined as an integral characteristic of the physical, psychological, emotional and social functioning of a healthy or sick person, based on his subjective perception [19, 22, 23].

One of the most common general documents for assessing quality of life (QOL) is the Short Form Medical Outcomes Study (SF-36), which is used in both population-based and specialized studies. SF-36 is currently used in 95% of scientific studies on the study of the quality of life in various diseases. It consists of 36 questions, including 8 scales. Answers to questions range from 0 to 100. The higher number of points – the higher quality of life [14, 24].

There are two versions of the questionnaire (standard and short forms): SF-36 V.1™ and SF-36 V.2™, which differ in the gradation of answers to individual questions, while the versions are comparable to each other [24]. Standard forms evaluate QOL within the last 4 weeks, short forms - within 1 Week. SF-36 is currently used in 95% of scientific studies on the study of QOL in various diseases [25, 26].

The SF-36 quality of life criteria are physical activity (PF), the role of physical problems in life restriction (RP), pain (BP), General Health (GH), vitality (VT), social activity (SF), the role of emotional problems in life restriction (RE), mental health (MH). It allows you to get two total dimensions – the physical (fkz) and psychological components of Health (PCZ) (table 1).

The introduction of the QOL research methodology makes it possible to use the obtained statistically reliable results in clinical practice, based on the principles of evidence-based medicine [24, 27].

Currently, there is information in the literature that multifactorial diseases account for 90–95% of all diseases, which include squamous exocervical dysplasia of the cervix. Well-known risk factors for cervical dysplastic processes include infection with highly oncogenic HPV strains, dyshormonal condition with a predominance of anovulatory cycles, cervical trauma during childbirth and abortion, and chronic inflammatory processes, especially caused by mixed infections [28]. However, to date, there is

SF-36 scale questionnaire

Health component	Scale	Conditional abbreviation
Physical	physical functioning	PF
	Role-based physical functioning	RP
	Bodily pain	BP
	General health	GH
Psychological	Vitality (energy and fatigue)	VT
	Social functioning	SF
	Emotional functioning	RE
	Mental health	MH

insufficient data on the risk factors for cervical epithelial dysplasia in perimenopausal women who have not given birth and the role of the psychoemotional state.

Therefore, the **aim of our study** was to study the features of the psychoemotional state and quality of life in women in the perimenopausal period who did not give birth with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium.

### MATERIALS AND METHODS

We comprehensively examined 98 women in the perimenopausal period. The criterion for selecting patients was the presence of a laboratory-confirmed diagnosis of recurrent squamous epithelial exocervical dysplasia, which occurred after surgical treatment in nulliparous women.

Inclusion criteria:

- clinical and laboratory confirmation of the diagnosis (presence of laboratory-confirmed recurrent squamous epithelial exocervical dysplasia CIN1, CIN2, lasting from 3 to 12 months);
- patients are 45–55 years old;
- absence of labor;
- Informed consent to participate in the study;

Exclusion criteria:

- Acute and chronic diseases of the vagina and cervix;
- HIV infection, current STI detection;
- Overweight (body mass index over 30);
- Breast leiomyoma or fibroadenoma;
- Other acute and chronic diseases in the decompensation stage that affect the general condition of the patient during the study period, as well as the results of instrumental and laboratory tests.

First, the participants were divided into two groups. The main group consisted of 60 nulliparous women with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium that occurred after surgical treatment in the perimenopausal period (the main group of the study). The control group included 38 women in the perimenopausal period without gynecological and somatic pathology.

All patients underwent general clinical, instrumental and laboratory examinations in accordance with the regulations of the Ministry of Health of Ukraine.

Neurovegetative manifestations were evaluated using the Kupperman index in points (less than 24.5). The Kupperman menopausal index allows to analyze the severity of

various groups of symptoms of menopausal syndrome: neurovegetative, neuropsychiatric and somatic. The value of the neurovegetative symptom complex, rated up to 10 points, is considered as the absence of clinical manifestations; 10–20 points – as a weak degree of disorders; 21–30 points – average; more than 30 points – as a severe form of the syndrome. Metabolic-endocrine and psychoemotional disorders in the range of 1–7 points – weak degree; 8–14 points – average; more than 14 points – severe form of the disease.

To study the psychoemotional state and determine the level of stress, we used the method of assessing the QOL using the SF-36 questionnaire and the M. Lusher color test in the classic (adapted) version - a short test using an eight-color series.

Statistical processing of the obtained results was carried out using the programs licensed statistical package IBM SPSS Statistics 23. MedStat program.

### RESEARCH RESULTS AND THEIR DISCUSSION

The average age of women included in the follow-up group was  $50.7 \pm 2.3$  years in the main group and  $48.2 \pm 3.2$  years in the control group.

The diagnosis of recurrent squamous epithelial exocervical dysplasia in all cases is confirmed by clinical and laboratory studies. CIN1 was detected in 56%, CIN2 – in 44% of cases. Colposcopic examination of patients revealed mild lesions in the form of thin acetopositive epithelium, delicate mosaic, punctuation, or a combination of both. In 38 women of the control group, the cytological type of NILM smear was established, and no cervical lesions were detected during colposcopic examination.

The study of complaints from patients of the main group of the survey showed that all patients noted discomfort from the genitals. Menstrual disorders were observed in 23.3%, dyspareunia – 33.3%, abnormal vaginal discharge – 40%, vulvodynia – 36.7% of cases.

As a result of the conducted studies, it was found that menopausal disorders in 39 (65%) patients were characterized by the manifestation of asthenoneurotic syndrome: the presence of sweating, hot flashes, causeless chills and chilliness, irritability, weakness, unmotivated tearfulness, anxiety, absent-mindedness. and every third woman noted a heartbeat. 34 (56.7%) women with the above symptoms were dominated by complaints from the genitourinary system – vaginal dryness, urinary incontinence (even

with little physical exertion), 16 (26.7%) patients had frequent urination. Along with the above-mentioned complaints, 25 (41.7%) patients reported flatulence, changes in the consistency and frequency of bowel movements; 9 (15%) women complained of gastrointestinal disorders (fig. 1).

Comparative characteristics of the severity of menopausal syndrome of the examined women according to the Kupperman index are shown in Fig. 2, and show a statistically significant deterioration in the general well-being of patients in the main survey group, compared with the control group, almost 1.5 times.

The study of Anamnesis data showed that the role of many risk factors in the development of the disease has been proven. Significant among them are the level of education, characteristics of sexual activity, tobacco smoking, the effectiveness of screening programs, etc. regarding hereditary predisposition, patients of the main group of the examination revealed a predisposition to malignant diseases of the breast in 45%, and the cervix – 21.7% of cases ( $p > 0.05$ ).

It should be noted that in comparison with women of the control group, in the main group, in most cases, chronic pathology was detected. Female infertility factor was observed in 25% of patients. Most often, inflammatory diseases of the genitourinary system and intestines were established (more than 70%), the use of non – barrier methods of contraception (30%), smoking (13.3%), with a predominance of smoking experience of more than 3 years, the number of cigarettes consumed-more than 10 per day (fig. 3).

Among the factors that lead to stressful situations, we found in a high percentage of cases poverty (70%) and lack of harmonious relationships with a partner (51.7%). An increase in the number of sexual partners in one person also causes an increase in stressful situations (31.7%).

To reliably determine the degree of psychological adaptation of women with this pathology, you can use the Lusher color test. Comparison of the results of testing using the Lusher method showed that in women with a low level of stress resistance, the colors brown, purple and black were chosen as priority (in the main group – 50%).

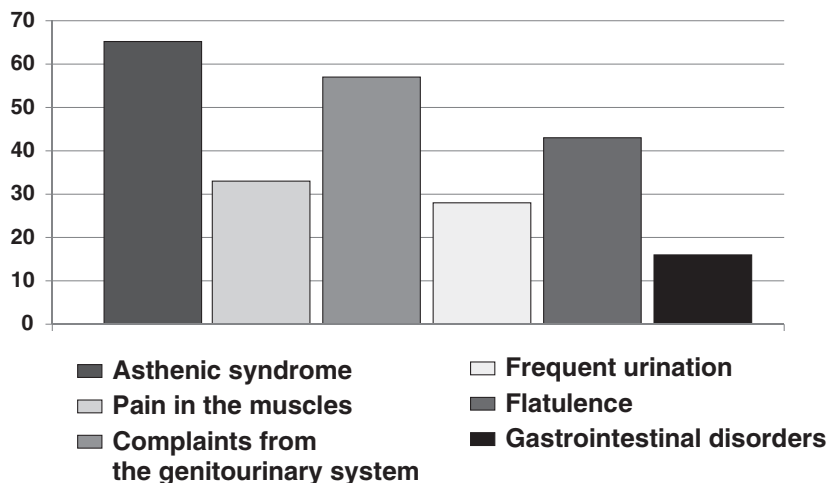


Fig. 1. Structure of menopausal disorders in the examined patients, %

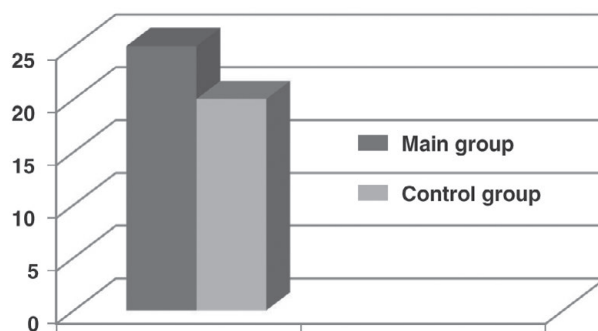


Fig. 2. Dynamics of the Kupperman menopausal index in the examined women, points

There was a pronounced significant ( $p < 0.05$ ) decrease in the indicator of psychosocial adaptation according to Lusher in relation to the control group by almost 40%. The indicator was respectively: in the group of examined women of the main group –  $5.07 \pm 0.41$ , which indicates an increase in neuroticism, hypochondria, anxiety, self-doubt, and a decrease in mood (fig. 4).

It is important to note that women in the control group most often put red and green in the first positions, which indicated relatively stable emotional stability, self-confidence, independence (Red), increased activity with an overestimation of their own strength and underestima-

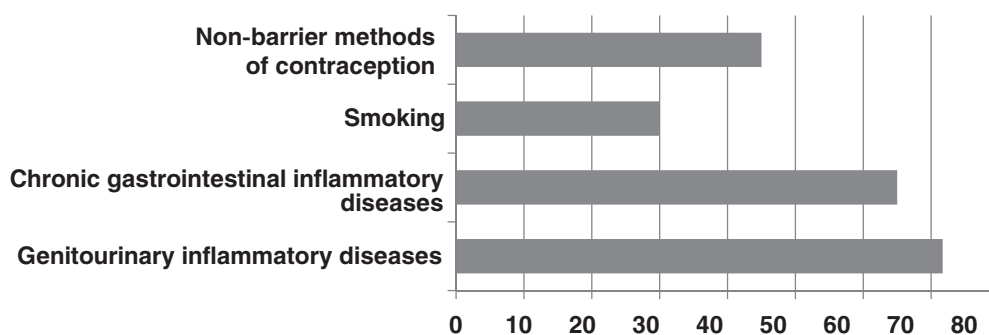
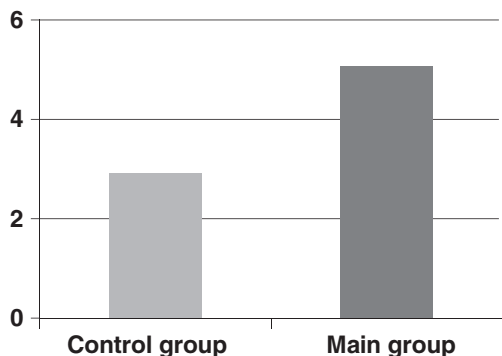


Fig. 3. Risk factors for recurrent squamous epithelial exocervical dysplasia in perimenopausal nulliparous women, %



**Fig. 4 Indicator of psychosocial adaptation according to Lusher test in the examined women, points.**

tion of difficulties (green), when moving black to the last positions, which indicates a desire for strict compliance with social norms, equanimity, good adaptation and resistance to stress.

When assessing the quality of life of patients in the main group, the results obtained show that with its overall assessment, which is an integral indicator of such parameters as attitude to the disease, activity, energy, mood, shyness and sexual function, a significant decrease in it was found in women in the main group (Fig. 5, 6). Thus, in patients of the main group, the physical component of health (PCH) was  $72.5 \pm 6.4$  points, in contrast to women of the control group, where the corresponding indicator was within  $93.1 \pm 4.7$  points (Fig. 5). Assessment of the mental component of health (MCH) in the main group showed the greatest decrease in this indicator ( $54.2 \pm 4.1$  points), compared with the control group ( $91.4 \pm 2.3$  points) (Fig. 5).

From the above data, it can be seen that significant changes in patients of the main group, which occur in

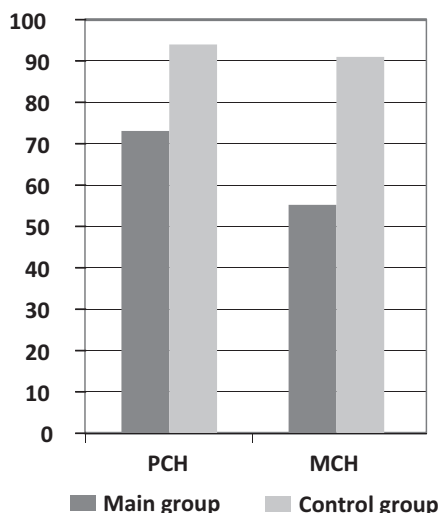
women with a low level of stress resistance, are the result of a chronic stress reaction, which is a common link in the pathogenesis of numerous serious diseases of the human body. At the same time, the transition of stress from the link of adaptation in the absence of a dominant functional system can mobilize the structures and energy resources of the body, which occurs with their depletion. It is known that the physical state of a person affects the emotional stereotype of behavior. This represents the influence of somatics on the psyche.

At the same time, it should be noted that not only the psychoemotional state of a woman affects the course of the disease, but also the pathological processes of the cervix themselves, due to the peculiarities of the clinical course – discharge, sexual disorders, contact bleeding, lead to violations of the psychoemotional state of a woman, and the emergence of a vicious circle.

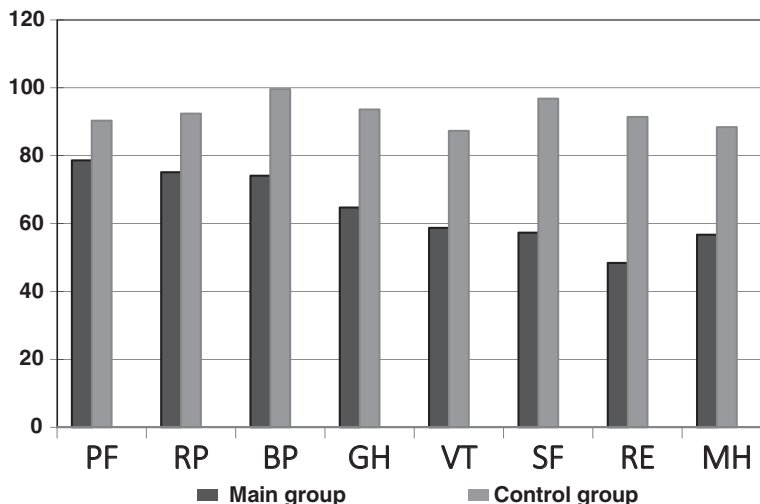
### CONCLUSIONS

The data, obtained in research, indicate that in perimenopausal nulliparous women recurrent squamous epithelial exocervical dysplasia of the cervical epithelium is a form of complicated course of dysplasia, and has a multifactorial genesis, in which conditions arise for the implementation of the neoplastic process.

Clinical manifestations of the complicated course of the perimenopausal period significantly worsen the quality of life in nulliparous women, especially against the background of recurrent squamous epithelial exocervical dysplasia of the cervical epithelium after surgical treatment, as evidenced by more pronounced menopausal manifestations, decreased physical and social activity, emotional status, and general health of the woman. Therefore, this category of patients requires not only examination of their psychoemotional state, but also appropriate correction of detected menopausal disorders.



**Fig. 5. Assessment of the quality of life in perimenopausal nulliparous women with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium, points.**



**Fig. 6. Indicators of quality of life in perimenopausal nulliparous women with recurrent squamous epithelial exocervical dysplasia of the cervical epithelium ( $p < 0.05$ ).**

## Information about authors

**Laskava Tetiana G.** – PhD student of the Department of Obstetrics and gynecology No. 3 of the Bogomolets National Medical University, Kyiv; tel.: (044) 405-60-33

**Beniuk Vasyli O.** – Doctor of Medical Sciences, Professor, Head of the Department of Obstetrics and gynecology No. 3 of the Bogomolets National Medical University, Kyiv; tel.: (044) 405-60-33  
ORCID: 0000-0002-5984-3307

**Shcherba Olena A.** – PhD, assistant of the Department of Obstetrics and gynecology No. 3 of the Bogomolets National Medical University; Kyiv; tel.: (044) 405-60-33  
ORCID: 0000-0002-8776-4403

**Kovaliuk Tetiana V.** – PhD, Associate Professor of the Department of Obstetrics and gynecology No. 3 of the Bogomolets National Medical University, Kyiv; tel.: (044) 405-60-33  
ORCID: 0000-0001-9339-881X

**Lastovetska Lilia D.** – PhD, Associate Professor of the Department of Obstetrics and gynecology No.3 of the Bogomolets National Medical University, Kyiv; tel.: (044) 405-60-33  
ORCID: 0000-0002-1085-6457

## Відомості про авторів

**Ласкава Тетяна Григорівна** – аспірант кафедри акушерства та гінекології №3 Національного медичного університету імені О.О. Богомольця, м. Київ; тел.: (044) 405-60-33

**Бенюк Василь Олександрович** – д-р мед. наук, проф., завідувач кафедри акушерства і гінекології №3 Національного медичного університету імені О.О. Богомольця, м. Київ; тел.: (044) 405-60-33  
ORCID: 0000-0002-5984-3307

**Щерба Олена Анатоліївна** – канд. мед. наук, асистент кафедри акушерства і гінекології №3 Національного медичного університету імені О.О. Богомольця, м. Київ; тел.: (044) 405-60-33  
ORCID: 0000-0002-8776-4403

**Ковалюк Тетяна Володимирівна** – канд. мед. наук, доцент кафедри акушерства і гінекології №3 Національного медичного університету імені О.О. Богомольця, м. Київ; тел.: (044) 405-60-33  
ORCID: 0000-0001-9339-881X

**Ластовецька Лілія Дмитрівна** – канд. мед. наук, доцент кафедри акушерства і гінекології №3 Національного медичного університету імені О.О. Богомольця, м. Київ; тел.: (044) 405-60-33  
ORCID: 0000-0002-1085-6457

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