

# The optimization of abnormal uterine bleeding treatment in women with chronic psychogenic stress

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**The objective:** to assess the effectiveness of the complex optimized treatment approach to abnormal uterine bleeding (AUB) in women with chronic psychogenic stress on the quality of life.

**Materials and methods.** We examined 100 women of reproductive age with AUB and chronic psychogenic stress, 50 patients of them consisted the I group and received the optimized treatment, and 50 persons (II group) received the standard AUB treatment. 30 women without AUB and chronic stress were included in the control group.

The examination of all persons included: anamnesis, clinical and gynecological examinations, ultrasound examination, general blood test, blood ferritin, vitamin D in serum blood. The quality of life was determined according to the 36-Item Short Form Health Survey before treatment and after three months. The standard approach included diagnostic and therapeutic measures according to the recommendations of Order N 353 dated 13.04.2016 of the Ministry of Health of Ukraine. The optimized treatment additionally included recommendations for lifestyle changes, melatonin, the use of vitamin D depending on its level, the medicament correction of iron deficiency without anemia.

**Results.** The results of the questionnaire 36-Item Survey scales indicate that in patients with AUB and chronic psychogenic stress there is a decrease in the scales relative to the values of healthy women, especially in psychological component. In the persons of the II group there was no significant dynamics of the scales "Bodily pain" and "Physical role functioning" relative to the indicators before treatment, while the scales "Physical function" ( $p < 0,001$ ) and "General health perceptions" ( $p = 0,01$ ) increased significantly.

The optimized treatment lead to a significant increase in all physical component scales compared till normal indices. In patients of the II group the indicators of psychological scales after treatment were significantly lower than the average values of healthy women. Thus, the value of the scale "Mental Health" was lower by 14,34% relative to the control group ( $p = 0,18$ ), "Emotional role functioning" – 18,38% ( $p = 0,007$ ), "Social role functioning" – 15,46% ( $p = 0,003$ ), "Vitality" – 23,27% ( $p = 0,005$ ). In the women of the I group there was a significant increase in the indicators of the psychological scales, which after treatment reached the values of healthy women.

**Conclusions.** In women with AUB and chronic psychogenic stress, there is an insufficient positive dynamics in improving the quality of life after the standard treatment, especially the scales of the psychological component. The optimized treatment approach leads to the improvement of all parameters of quality of life of the patients.

**Keywords:** abnormal uterine bleeding, reproductive age, chronic psychogenic stress, quality of life, treatment.

## Оптимізація лікування аномальних маткових кровотеч у жінок з хронічним психоемоційним стресом

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**Мета дослідження:** оцінювання ефективності комплексного оптимізованого підходу до лікування аномальних маткових кровотеч (АМК) у жінок з хронічним психоемоційним стресом з метою покращення якості життя.

**Матеріали та методи.** Обстежено 100 жінок репродуктивного віку з АМК та хронічним психоемоційним стресом, з них 50 пацієнток увійшли до I групи та отримали оптимізоване лікування, а 50 осіб (II група) – стандартне лікування АМК. До контрольної групи включено 30 жінок без АМК та хронічного стресу.

Обстеження всіх осіб включало: анамнез, клінічне та гінекологічне обстеження, ультразвукове дослідження, загальний аналіз крові, феритин крові, вітамін D у сироватці крові. Якість життя визначали відповідно до опитувальника SF-36 до та через три місяці лікування. Стандартний підхід передбачав проведення діагностичних та лікувальних заходів згідно з рекомендаціями Наказу МОЗ України № 353 від 13.04.2016. Оптимізоване лікування додатково включало рекомендації щодо зміни способу життя, застосування мелатоніну, вітаміну D залежно від його рівня, медикаментозної корекції дефіциту заліза без анемії.

**Результати.** Результати опитувальника SF-36 свідчать, що у пацієнтів з АМК в умовах хронічного психоемоційного стресу спостерігається зниження показників шкали щодо значень здорових жінок, особливо психологічного компонента. В осіб II групи не спостерігалось достовірної динаміки шкал «Біль» та «Рольове функціонування», зумовлене фізичним станом» щодо показників до лікування, тоді як значення шкал «Фізичне функціонування» ( $p < 0,001$ ) та «Загальне здоров'я» ( $p = 0,01$ ) значно зросли. Оптимізоване лікування сприяло значному зростанню показників всіх шкал фізичного компонента здоров'я до нормальних значень.

У пацієнтів II групи показники психологічних шкал після лікування були достовірно нижчими за середні величини здорових жінок. Так, значення шкали «Психічне здоров'я» було нижчим на 14,34% порівняно з контрольною групою

( $p=0,018$ ), «Рольове функціонування, зумовлене емоційним станом» – на 18,38% ( $p=0,007$ ), «Соціальне функціонування» – на 15,46% ( $p=0,003$ ), «Життєва активність» – на 23,27% ( $p=0,005$ ). У жінок I групи спостерігалось достовірне підвищення показників шкал психологічного компонента, які після лікування досягли значень здорових жінок.

**Висновки.** У жінок з АМК в умовах хронічного психоемоційного стресу відзначається недостатньо позитивна динаміка у покращенні якості життя після стандартного лікування, особливо за показниками шкал психологічного компонента здоров'я. Оптимізований підхід до лікування приводить до покращення всіх параметрів якості життя пацієнток.

**Ключові слова:** аномальна маткова кровотеча, репродуктивний вік, хронічний психоемоційний стрес, якість життя, лікування.

## Оптимизация лечения аномальных маточных кровотечений у женщин с хроническим психоэмоциональным стрессом

**Е.В. Федосюк**

**Цель исследования:** оценка эффективности комплексного оптимизированного подхода к лечению аномальных маточных кровотечений (АМК) у женщин с хроническим психоэмоциональным стрессом с целью улучшения качества жизни.

**Материалы и методы.** Обследовано 100 женщин репродуктивного возраста с АМК и хроническим психоэмоциональным стрессом, из них 50 пациенток вошли в I группу и получали оптимизированное лечение, а 50 человек (II группа) – стандартное лечение АМК. В контрольную группу было включено 30 женщин без АМК и хронического стресса.

Обследование всех больных включало анамнез, клиническое, гинекологическое обследование, ультразвуковое исследование, общий анализ крови, ферритин крови, витамин D сыворотки крови. Качество жизни определяли в соответствии с опросником SF-36 до и через три месяца лечения. Стандартный подход предусматривал проведение диагностических и лечебных мероприятий согласно рекомендациям Приказа Минздрава Украины № 353 от 13.04.2016. Оптимизированное лечение дополнительно включало рекомендации по изменению образа жизни, применению мелатонина, витамина D в зависимости от его уровня, медикаментозной коррекции дефицита железа без анемии.

**Результаты.** Результаты опросника SF-36 свидетельствуют, что у пациентов с АМК в условиях хронического психоэмоционального стресса наблюдается снижение показателей шкал по отношению к значениям здоровых женщин, особенно психологического компонента. У лиц II группы не наблюдалось достоверной динамики шкал «Боль» и «Рольовое функционирование, обусловленное физическим состоянием» относительно показателей до лечения, в то время как величины шкал «Физическое функционирование» ( $p<0,001$ ) и «Общее здоровье» ( $p=0,01$ ) значительно увеличились. Оптимизированное лечение способствовало значительному росту показателей всех шкал физического компонента здоровья до нормальных значений.

У пациентов II группы показатели психологических шкал после лечения были достоверно ниже средних величин здоровых женщин. Так, значение шкалы «Психическое здоровье» было ниже на 14,34% по сравнению с контрольной группой ( $p=0,018$ ), «Рольовое функционирование, обусловленное эмоциональным состоянием» – на 18,38% ( $p=0,007$ ), «Социальное функционирование» – на 15,46% ( $p=0,003$ ), «Жизненная активность» – на 23,27% ( $p=0,005$ ). У женщин I группы наблюдалось достоверное повышение показателей шкал психологического компонента, которые после лечения достигли значений здоровых женщин.

**Выводы.** У женщин с АМК в условиях хронического психоэмоционального стресса отмечается недостаточная положительная динамика в улучшении качества жизни после стандартного лечения, особенно по показателям шкал психологического компонента здоровья. Оптимизированный подход к лечению приводит к улучшению всех параметров качества жизни пациенток.

**Ключевые слова:** аномальное маточное кровотечение, репродуктивный возраст, хронический психоэмоциональный стресс, качество жизни, лечение.

Abnormal uterine bleeding (AUB) occurs in women of all ages and requires timely diagnosis and treatment. 30% of women in reproductive age suffer from this pathology [1]. At the present stage, the problem of the AUB is considered not only as a medical one. The social side of the issue is the impact of the AUB on the quality of life of the patients. Therefore, an important aspect is the correction that includes not only the gynecological pathology, but also taking into account the impact of treatment on the quality of life of patients, which is especially important in women with chronic psychogenic stress.

**The objective:** to assess the effectiveness of the complex optimized treatment approach to abnormal uterine bleeding in women with chronic psychogenic stress on the quality of life.

### MATERIALS AND METHODS

100 women of reproductive age with AUB and chronic psychogenic stress were examined. The I group included 50 patients who received the complex optimized treatment, the II group – 50 persons who received the standard treatment. 30 healthy women with normal parameters of the menstrual cycle and without AUB and chronic psychogenic

stress were included in the control group. AUB was diagnosed according to the recommendations of Order N 353 of the Ministry of Health of Ukraine dated 13.04.2016 [2]. The presence of chronic psychogenic stress was exposed on the basis of a clinical interview with a psychologist.

Inclusion criteria: AUB, age 18–45 years, satisfactory condition of the sample of the material from the uterine cavity for histological examination, chronic psychogenic stress, patient consent. Exclusion criteria: pregnancy, premenstrual dysphoric disorder, acute pelvic inflammatory disease, mental disorders, blood diseases associated with coagulation disorders, hypothyroidism, hyperthyroidism, hormonal adrenal tumors, chronic intestinal diseases, severe somatic pathology.

The examination of all observed persons included: anamnesis, clinical and gynecological examinations, ultrasound examination, general blood test (iron deficiency anemia (IDA)), blood ferritin (iron deficiency (ID) without anemia), vitamin D in blood. The quality of life was determined according to the 36-Item Short Form Health Survey (SF-36) before treatment and after three months. The concentration of vitamin D (25-hydroxycalciferol (25 (OH) D)) was detected in the blood serum by ELISA

method using a set of reagents DBS-Diagnostics Biochem Canada Inc. Optimal level of vitamin D was in the ranges of 30–50 ng/ml, suboptimal level – 21–29 ng/ml, vitamin D deficiency – less than 20 ng/ml [3]. The ID without anemia was diagnosed a decrease in ferritin level less than 30 µg/l, a decrease iron less than 50 µg/dL, and an increase in iron binding capacity in the blood serum using reagents “FERRITIN”, “IRON-FERROZINE” and “TOTAL IRON BINDING CAPACITY (TIBC)” (company BioSystems S.A., Spain).

The standard approach included diagnostic and therapeutic measures according to the recommendations of Order N 353 dated 13.04.2016 of the Ministry of Health of Ukraine: transvaginal ultrasound of the pelvis to determine the presence of structural pathology, hysteroscopy with biopsy or pipelle biopsy. The surgical treatment of the structural etiological factors of AUB (endometrial polyp, submucosal uterine leiomyoma) was performed. Material obtained from the uterine cavity was sent for histological examination. Non-hormonal (non-steroidal anti-inflammatory drugs, tranexamic acid) and hormonal methods (estradiol valerate and dienogest in dosing regimen, dydrogesterone, intrauterine device with levonorgestrel) were used taking into account the personal approach to the patient. In the presence of IDa antianemic therapy was prescribed till normal hemoglobin level. Iron-fortified foods have been recommended to correct ID without anemia. The optimized treatment additionally included together with above mentioned methods the recommendations for lifestyle changes (adherence to work and rest, avoid stressful situations, moderate exercise), melatonin 3 mg orally 30 minutes before bedtime for one month, the use of vitamin D depending on its level according to recommendations of Endocrine Society [4], the correction of ID deficiency without anemia was performed with a drug containing 320 mg of anhydrous sulfate (corresponding to 100 mg of ferrous iron), 60 mg of ascorbic acid 1 tablet 1 time per day orally to normalize serum ferritin level.

The research was performed in “Kreminna Multidisciplinary Hospital of Kreminna District Council” and approved by the Ethics Commission of the Shupyk National Medical Academy of Postgraduate Education (protocol N1 dated 15.01.2018).

The program Statistica 10 was used to process the results. The Mann-Whitney and Wilcoxon tests were used to compare the data of the groups. The difference between the values was considered significant by  $p \leq 0,05$ .

## RESULTS AND THEIR DISCUSSION

The average age of the patients in the I group was  $31,26 \pm 0,88$  years, II group –  $30,92 \pm 0,84$  years, control group –  $26,33 \pm 0,87$  years. The I and II groups were representative according to the number of persons with IDa (IDa I degree was diagnosed in 17 (34,00%) individuals in the I group, 10 (20,00%) – II group and 3 (10,00%) – control one; II degree – 5 (10,00%) and 6 (12,00%) in the I and II groups, respectively), ID without anemia (40 (80,00%), 36 (72,00%) and 6 (20,00%), respectively) and vitamin D level (optimal level – 7 (14,00%), 9 (18,00%) and 11 (36,67%) persons, respectively, suboptimal level – 20 (20,00%), 23 (46,00%) and 16 (53,33%), vitamin D deficiency – 23 (46,00%), 18 (36,00%) and 3 (10,00%).

Analysis of the results of the questionnaire “The Medical Outcomes Study 36-Item Short-Form Health Survey” scales in patients with AUB and chronic psychogenic stress demonstrated a decrease in the scales relative to the values of healthy women. Among the scales of the physical component of health there was a significant decrease in the values of “Bodily pain”, “Physical functioning” and “General health perceptions”, relative to control group ( $p < 0,001$ ) (table 1).

The mean indicators of the all psychological component scales were significantly lower in the women in the I and II groups compared to the controls (table 2).

There is the improvement in the quality of life in patients of both groups after the treatment. The indicators of the scales of the physical component after the treatment reached the values of healthy individuals. However, it should be noted that after the standard treatment approach there was no significant dynamics of the scales “Bodily pain” and “Physical role functioning” relative to the indicators before treatment, while the scales “Physical function” and “General health perceptions” increased significantly ( $p < 0,001$  and  $p = 0,01$ , respectively). The optimized treatment contributed to a significant increase in all scales compared to the indices after treatment.

The dynamics of changes in the psychological component scales of health are noteworthy. In the I and II groups there was an increase in scale indicators. However, in patients after the standard therapy, the indicators after treatment were significantly lower than the average values of healthy women. Thus, the value of the scale “Mental Health” was lower by 14,34% relative to the control group ( $p = 0,018$ ), “Emotional role functioning” – 18,38% ( $p = 0,007$ ), “Social role functioning” – 15,46% ( $p = 0,003$ ), “Vitality” – 23,27% ( $p = 0,005$ ). It should be noted that in

Table 1

The scales of the health physical component of the SF-36 questionnaire before and after treatment, points

Scale	I group, n=50		II group, n=50		Control group, n=30
	Before treatment	After treatment	Before treatment	After treatment	
Bodily pain	66,16±3,56*	76,86±3,47°	64,94±3,57*	73,76±3,52	83,93±3,88
Physical functioning	69,00±3,31*	85,80±2,20°	68,30±2,56*	83,20±2,45°	88,33±2,96
Physical role functioning	63,50±3,73	73,50±3,87°	66,00±4,39	70,50±3,69	75,00±4,92
General health perceptions	57,86±3,13*	72,64±3,32°	55,50±2,81*	67,24±3,02°	72,33±4,01

Notes: \* – significant difference between indicators compared to the control group ( $p < 0,05$ );

° – significant difference between indicators before and after treatment ( $p < 0,05$ ).

The scales of the health psychological component of the SF-36 questionnaire before and after treatment, points

Scale	I group, n=50		II group, n=50		Control group, n=30
	Before treatment	After treatment	Before treatment	After treatment	
Mental health	58,10±2,72*	74,76±2,84*	57,40±3,23*	68,76±3,20*,°	80,27±3,67
Emotional role functioning	51,88±2,41*	72,78±4,12°	49,28±3,17*	64,56±3,14*,°	79,10±3,87
Social role functioning	50,80±2,91*	74,48±2,21°	48,60±2,84*	62,62±2,43*,°,•	74,07±3,00
Vitality	52,94±3,52*	71,70±2,76°	50,90±3,80*	57,80±3,88*,•	75,33±3,67

Notes: \* – significant difference between indicators compared to the control group ( $p < 0.05$ );

° – significant difference between indicators before and after treatment ( $p < 0,05$ );

• – significant difference between indicators after treatment between the I and II groups.

patients of the II group there was no significant increase in the average value of the scale “Vitality” after the treatment. After the optimized therapy, there was a significant increase in the scales indicators, which reached the values of healthy women. In addition, the values of the scales “Vitality” and “Social role functioning” after the treatment in patients of the I group were significantly higher than the values of patients of the II group.

In millions of women around the world menstruations often and regularly violate their physical, psychological and social status and are associated with negative perceptions, restrictions on social and professional activity. This is especially pronounced in women with heavy menstrual bleeding [5]. Women with AUB believe that the question of their quality of life is extremely important during a doctor's visit [6]. According to the SF-36 questionnaire, the patients with heavy menstrual bleeding have worse quality of life parameters compared to women with normal blood loss [7]. According to the research result of S. Kocaoz et al., in women of reproductive age there is a decrease in qual-

ity of life parameters on the SF-36 scale, and significant reductions on the scales “Physical functioning”, “Physical role functioning” and “Bodily pain”. In these patients ferritin level and physical activity have been found to decrease significantly with increasing of menstrual duration [8]. When studying the quality of life on the SF-36 scale in women with chronic AUB, lower scales were found in relation to physical and, especially, mental states, as well as energy [9]. The results of our study are consistent with data on the deterioration of quality of life in patients with AUB and chronic psychogenic stress.

## CONCLUSIONS

In women with abnormal uterine bleeding and chronic psycho-emotional stress, there is an insufficient positive dynamics in improving the quality of life after the standard treatment, especially the scales of the psychological component. The optimized treatment approach leads to the improvement of all parameters of quality of life of the patients.

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## REFERENCES

- Munro MG, Critchley HOD, Fraser IS, FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. *Int J Gynaecol Obstet.* 2018;143(3):393-408. doi: 10.1002/ijgo.12666.
- Ministerstvo okhorony zdorovya Ukrainy. Pro zatverdzhennia ta vprovadzhenia medyko-tekhnologichnykh dokumentiv zi standartyzatsii medychnoi dopomohy pry anomalnykh matkovykh krvotechakh [Internet]. 2016. Nakaz № 353. 2016 Kvit 13. Available from: <https://zakon.rada.gov.ua/rada/show/v0353282-16#Text>.
- Pludowski P, Karczmarewicz E, Bayer M, Carter G, Chlebna-Sokol D, Czech-Kowalska J, et al. Practical guidelines for the supplementation of vitamin D and the treatment of deficits in Central Europe – recommended vitamin D intakes in the general population and groups at risk of vitamin D deficiency. *Endokrynol Pol.* 2013;64(4):319-27. doi: 10.5603/ep.2013.0012.
- Holick MF, Binkley NC, Bischoff-Ferrari HA, Gordon CM, Hanley DA, Heaney RP, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab.* 2011;96(7):1911-30. doi: 10.1210/jc.2011-0385.
- Matteson KA, Clark MA. Questioning our questions: do frequently asked questions adequately cover the aspects of women's lives most affected by abnormal uterine bleeding? Opinions of women with abnormal uterine bleeding participating in focus group discussions. *Women Health.* 2010;50(2):195-211. doi: 10.1080/03630241003705037.
- Matteson KA. Menstrual questionnaires for clinical and research use. *Best Pract Res Clin Obstet Gynaecol.* 2017;40:44-54. doi: 10.1016/j.bpobgyn.2016.09.009.
- Karlsson TS, Marions LB, Edlund MG. Heavy menstrual bleeding significantly affects quality of life. *Acta Obstet Gynecol Scand.* 2014;93(1):52-7. doi: 10.1111/aogs.12292.
- Kocaoz S, Cirpan R, Degirmencioglu AZ. The prevalence and impacts heavy menstrual bleeding on anemia, fatigue and quality of life in women of reproductive age. *Pak J Med Sci.* 2019;35(2):365-70. doi: 10.12669/pjms.35.2.644
- Pedachenko NY, Tutchenko TM, Tucharyan RA. Chronic abnormal uterine bleedings and quality of women's life. How to significantly improve the result? *Reproductive Endocrinology.* 2020;1(51):14-22.

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