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ASSESSMENT OF QUALITY OF LIFE AND CLINICAL EFFECTIVENESS OF SURGICAL TREATMENT IN PATIENTS WITH VARICOSE VEIN DISEASE OF THE LOWER EXTREMITIES

Mykyta V. Druzhkin[1,2], Andrii V. Klymenko[1]

[1]Zaporizhzhia State Medical and Pharmaceutical University, Zaporizhzhia, Ukraine
[2]LLC «KRAM INVEST», Zaporizhzhia, Ukraine

Abstract

Introduction. Chronic venous disease (CVD) of the lower extremities in the stage of chronic venous insufficiency is characterized by a progressive course, a high rate of complications, and a significant decline in patients' quality of life (QoL). Despite the widespread implementation of endovenous thermal treatment methods, isolated elimination of truncal reflux does not always ensure complete clinical and functional recovery in the postoperative period.
Aim. To assess quality of life and clinical manifestations of the disease in patients with chronic venous disease of the lower extremities in the early and long-term postoperative periods depending on the method of surgical treatment.
Materials and methods. A total of 139 patients (100%) with CVD at the stage of chronic venous insufficiency (C3-C6, CEAP) were included and divided into three groups. Group 1 (n=32; 23.02%) underwent endovenous radiofrequency ablation (RFA) of the great and/or small saphenous veins combined with miniphlebectomy and perforator vein ligation. Group 2 (n=64) included subgroup 2A (n=31; 22.30%) – RFA with miniphlebectomy without perforator ligation, and subgroup 2B (n=33; 23.74%) – RFA with perforator ligation without miniphlebectomy. Group 3 (n=43; 30.94%) underwent isolated RFA.
The study methods included clinical assessment (complaints, medical and life history, physical examination, laboratory tests), duplex ultrasound of the lower limb veins, quality of life evaluation using CIVIQ-20 (invGIS), VCSS scoring, and statistical analysis.
Results. In all groups, improvement in QoL indicators and a reduction in clinical severity were observed after treatment. The most pronounced and sustained positive changes were noted in patients who underwent multimodal combined treatment (RFA combined with miniphlebectomy of tributary veins and ligation of perforator veins). After 12 months, CIVIQ-20 scores in the main group were significantly higher, while VCSS scores were lower compared to the groups of mono-endovenous and partially combined treatment ($p<0.05$).
Conclusions. Multimodal treatment of CVD provides the most complete restoration of patients' QoL and significantly reduces the clinical severity of the disease compared to monoablation and partially combined treatment.

Keywords: **chronic venous disease, varicose veins, endovenous ablation, miniphlebectomy, perforator veins, quality of life, surgical treatment, venous insufficiency**

INTRODUCTION

Chronic venous disease (CVD) of the lower extremities remains one of the most common surgical pathologies among the adult population and represents a significant medical and social problem, characterized by a progressive clinical course, a high rate of complications, and a persistent reduction in patients' quality of life (QoL) [1, 2]. According to epidemiological data, up to 30-40% of the adult population have clinical manifestations of chronic venous insufficiency, and the proportion of patients with CEAP classes C3–C6 accounts for more than 20% of all patients with CVD [3, 4].

Despite the widespread implementation of endovenous thermal treatment methods, particularly radiofrequency ablation (RFA), the outcomes of surgical correction of varicose vein disease often remain unsatisfactory for both patients and surgeons [5]. In a significant proportion of patients, symptoms of venous hypertension persist, along with recurrences of varicose transformation of tributary and perforator veins and signs of disease progression, which negatively affect their physical, psychoemotional, and social well-being and are accompanied by a decline in QoL [6, 7].

In modern phlebology, treatment success is traditionally assessed using anatomical and ultrasound criteria, primarily the fact of obliteration of the trunk of the great and/or small saphenous veins [8]. However, numerous clinical observations indicate that elimination of truncal reflux alone is not always accompanied by adequate reduction of venous hypertension and clinical manifestations, since pathologically dilated tributary and perforator veins may persist in patients, maintaining excess venous volume and contributing to chronic inflammation and disease progression [9].

Thus, there is a need to assess the effectiveness of various surgical treatment methods for CVD not only from the perspective of anatomical success, but also by taking into account the dynamics of QoL and clinical severity of the disease after surgery. The most objective and validated tools for such assessment are the Venous Clinical Severity Score (VCSS) and the Chronic Venous Insufficiency Questionnaire (CIVIQ-20), which allow quantitative evaluation of the functional outcomes of treatment and its impact on patients' daily life.

AIM

To assess the QoL and clinical manifestations of the disease in patients with CVD in the early and long-term postoperative periods depending on the method of surgical treatment.

MATERIALS AND METHODS

The study included patients with CVD in the stage of chronic venous insufficiency aged 18 to 75 years. Inclusion criteria: patients with varicose vein disease of the lower extremities of clinical classes C3–C6 according to CEAP and the presence of written informed consent to participate in the study. Exclusion criteria: patients with chronic venous disease of clinical classes C0–C2 according to CEAP; age under 18 or over 75 years; patients with oncological diseases, autoimmune diseases, diabetes mellitus, liver diseases; and absence of written informed consent to participate in the study.

A total of 139 patients (100%) were examined and divided into three clinical groups with subgroups: Group 1 (main group) – 32 patients (23.02%) who received treatment using endovenous radiofrequency ablation of the trunks of the great and/or small saphenous veins combined with miniphlebectomy of tributaries and perforator veins;

Group 2 (comparison group) – 64 patients:

- subgroup 2A: 31 patients (22.30%) who underwent endovenous radiofrequency ablation combined with miniphlebectomy of tributaries without perforator vein ligation;

- subgroup 2B: 33 patients (23.74%) who underwent endovenous radiofrequency ablation combined with perforator vein ligation without miniphlebectomy of tributaries.

Group 3 (comparison group) – 43 patients (30.94%) who were treated using endovenous radiofrequency ablation of the trunks of the great and/or small saphenous veins only.

Clinical, instrumental, and laboratory examinations were performed at the Department of Faculty Surgery and Oncology of Zaporizhzhia State Medical and Pharmaceutical University. Examination of patients in all groups included collection of complaints, key data from medical and life history, physical examination of the lower extremities, general clinical laboratory testing, instrumental assessment (ultrasound duplex scanning of the lower limb veins using the «ACUSON NX3 Elite» system, Siemens Medical Solutions USA, Inc., USA), analysis of questionnaire data for assessment of QoL in patients with chronic venous insufficiency (Chronic Venous Insufficiency Questionnaire – CIVIQ-20 invGIS), and evaluation using the Venous Clinical Severity Score (VCSS). Questionnaire outcomes were assessed before treatment and at 1, 3, 6, and 12 months after surgery.

All patients underwent preoperative duplex ultrasound scanning with assessment of truncal reflux, tributary involvement, and perforator vein competence.

Surgical strategy was defined according to the study protocol, taking into account current ESVS guidelines. Truncal reflux was treated in all patients. The management of tributary and perforator veins varied according to the allocated treatment group, reflecting different guideline-acceptable approaches to the extent of surgical correction.

RFA was performed using the ClosureFast technique with a heating cycle of 20 s and a temperature of 120° (device name, country). All interventions were carried out under local tumescent anesthesia with continuous ultrasound guidance. For tumescent anesthesia, a cooled buffered 0.1% lidocaine solution without adrenaline was used. Miniphlebectomy was performed using the Muller technique.

Statistical analysis of the results was performed using licensed software STATISTICA 13.0 (TIBCO Software Inc., license JPZ804I382130ARCN10-J) and Microsoft Excel 2013 (license 00331-10000-00001-

AA404). Quantitative data were presented as the mean value and standard error of the mean (M±m). Intergroup differences were assessed using Student's t-test for independent samples, while paired t-tests were applied for analysis of dynamic changes within a single group. To evaluate relationships between variables, correlation analysis was performed with calculation of the Pearson correlation coefficient under conditions of normal data distribution. Given the multiple intergroup comparisons, statistical results were interpreted with caution, and emphasis was placed on consistent trends across time points rather than isolated p-values.

RESULTS

The distribution of patients according to the CEAP clinical classification across the study groups is presented in Table 1.

Table 1

Distribution of Patients according to CEAP Clinical Classification across Study Groups

	Group 1 (n=32)	Subgroup 2A (n=31)	Subgroup 2B (n=33)	Group 3 (n=43)	Total
C3	16 (50%)	14 (45.2%)	18 (54.6%)	18 (41.9%)	66 (47.5%)
C4a	7 (21.9%)	11 (35.4%)	7 (21.1%)	15 (34.9%)	40 (28.8%)
C4b	3 (9.4%)	2 (6.5%)	2 (6.1%)	0 (0%)	7 (5%)
C4c	3 (9.4%)	0 (0%)	4 (12.1%)	4 (9.3%)	11 (7.9%)
C5	1 (3.1%)	1 (3.2%)	2 (6.1%)	2 (4.6%)	6 (4.3%)
C6	2 (6.2%)	3 (9.7%)	0 (0%)	4 (9.3%)	9 (6.5%)
Total	32 (100%)	31 (100%)	33 (100%)	43 (100%)	139 (100%)

No statistically significant differences between the groups were identified ($p<0.05$).

In all groups, the majority of patients were classified as C3 and C4 stages. C3 was the most prevalent class, accounting for 41.9% to 54.6% of patients across groups, while C4a was the second most common stage (21.1%–35.4%).

Advanced stages of chronic venous disease (C4b-C6) were less frequently observed. C4b and C4c classes were present in all groups, although with lower proportions, and C5-C6 patients constituted a minority of the study population.

Overall, the distribution of CEAP classes was relatively balanced between groups, indicating a comparable baseline clinical profile of patients prior to treatment.

According to Table 2, before the initiation of treatment, the mean values of QoL indicators assessed by the CIVIQ-20 (invGIS) questionnaire and the clinical severity of CVD evaluated using the VCSS did not differ significantly between the groups and subgroups ($p<0.05$).

The results of QoL assessment using the CIVIQ-20 questionnaire in patients after surgical treatment are presented in Table 3.

Table 2

Results of QoL Assessment using the CIVIQ-20 (invGIS) Questionnaire and Clinical Severity of Chronic Venous Disease according to VCSS in Patients of the Main and Comparison Groups before Surgical Treatment

Parameter	Groups			
	1st (main group), n=32	2nd (comparison group), n=64		3rd (comparison group), n=43
		subgroup 2A, n=31	subgroup 2B, n=33	
CIVIQ-20 before treatment	63.12±2.98	62.42±3.19	64.73±2.34	61.35±2.41
VCSS before treatment	10.41±0.67	11.03±0.70	10.36±0.51	10.84±0.47

No statistically significant differences between the groups were identified ($p>0.05$).

Table 3

Analysis of QoL Assessment Indicators using the CIVIQ-20 (invGIS) Questionnaire in Patients of the Main and Comparison Groups after Surgical Treatment

Parameter	Groups			
	1st (main group), n=32	2nd (comparison group), n=64		3rd (comparison group), n=43
		subgroup 2A, n=31	subgroup 2B, n=33	
CIVIQ-20 at 1 month	68.01±1.42$^{\Delta}$	67.03±1.43†	66.52±1.51‡	74.01±1.53$^{\Delta\dagger\ddagger}$
CIVIQ-20 at 3 months	72.04±1.33$^{\Delta}$	70.02±1.32†	69.01±1.31‡	77.01±1.34$^{\Delta\dagger\ddagger}$
CIVIQ-20 at 6 months	81.03±1.21$^{*\Delta\#}$	77.52±1.21*†	75.02±1.22$^{\ddagger\#}$	70.52±1.22$^{\Delta\dagger\ddagger}$
CIVIQ-20 at 12 months	91.04±1.14$^{*\Delta\#}$	87.01±1.13*§†	82.03±1.13$^{\ddagger\S\#}$	79.04±1.12$^{\Delta\dagger\ddagger}$

*: statistical significance of the difference between Group 1 and Subgroup 2A ($p<0.05$);
#: statistical significance of the difference between Group 1 and Subgroup 2B ($p<0.05$);
Δ: statistical significance of the difference between Group 1 and Group 3 ($p<0.05$);
§ : statistical significance of the difference between Subgroup 2A and Subgroup 2B ($p<0.05$);
†: statistical significance of the difference between Subgroup 2A and Group 3 ($p<0.05$);
‡: statistical significance of the difference between Subgroup 2B and Group 3 ($p<0.05$).

One month after surgical intervention, an improvement in QoL was observed in all groups; however, its magnitude depended on the extent of surgical correction. The highest CIVIQ-20 values were recorded in the main group (68.01±1.42 points). No statistically significant difference was found between the mean values of the main group and the 2nd comparison group with its subgroups ($p>0.05$). However, a statistically significant difference was identified between the main group and the 3rd comparison group ($t=2.9$; $p<0.05$). In addition, the mean values of both subgroups of the 2nd group were significantly higher than those of the 3rd group ($t=3.3$; $p<0.05$ and $t=3.5$; $p<0.05$, respectively).

Three months after treatment, a similar pattern was observed for CIVIQ-20: improvement in patients' QoL was significantly greater in the main group compared to the 3rd comparison group ($t=2.6$; $p<0.05$). QoL was also significantly higher in both subgroups of the 2nd group than in the 3rd group ($t=3.7$; $p<0.05$ and $t=4.3$; $p<0.05$, respectively).

Six months after treatment, a further statistically significant increase in the CIVIQ-20 score was observed in the main group, which was significantly higher compared to subgroup 2A ($t=2.1$; $p<0.05$), subgroup 2B ($t=3.5$; $p<0.05$), and the 3rd comparison group ($t=6.1$; $p<0.05$). No statistically significant difference was found between the subgroups within the 2nd comparison group ($p>0.05$). QoL also continued to improve in the 2nd comparison group compared to the 3rd comparison group ($t=4.1$; $p<0.05$ and $t=2.6$; $p<0.05$, respectively).

Twelve months after treatment, the highest QoL scores were recorded in the main group (91.04±1.14 points), which were significantly higher than the corresponding values in subgroup 2A ($t=2.5$; $p<0.05$), subgroup 2B ($t=5.0$; $p<0.05$), and the 3rd comparison group ($t=7.5$; $p<0.05$).

In all study groups, a statistically significant improvement in QoL indicators assessed by CIVIQ-20 was recorded one month after treatment compared to baseline. Improvement in patients' QoL one month after surgical treatment was observed in the 3rd comparison group ($t=4.4$; $p<0.05$), whereas no statistically significant differences were found in the other groups ($p>0.05$). The main group demonstrated the best long-term outcomes, with a statistically significant improvement in patients' condition at 6 and 12 months after treatment ($t=5.6$; $p<0.05$ and $t=8.8$; $p<0.05$, respectively). In subgroup 2B and the 3rd comparison group, improvements in QoL were also observed at 12 months; however, CIVIQ-20 scores were significantly lower than those in the main group ($t=6.7$; $p<0.05$).

The mean values of clinical severity of CVD according to the VCSS in patients of the main and comparison groups after surgical treatment are presented in Table 4.

Table 4

Analysis of Clinical Severity Assessment Indicators of CVD according to the VCSS in Patients of the Main and Comparison Groups after Surgical Treatment

Parameter	Groups			
	1st (main group), n=32	2nd (comparison group), n=64		3rd (comparison group), n=43
		subgroup 2A, n=31	subgroup 2B, n=33	
VCSS at 1 month	9.84±0.25$^{\Delta}$	10.12±0.26†	9.94±0.27‡	7.52±0.27$^{\Delta\dagger\ddagger}$
VCSS at 3 month	8.84±0.21$^{\Delta}$	9.11±0.22†	8.92±0.22‡	7.94±0.22$^{\Delta\dagger\ddagger}$
VCSS at 6 month	7.01±0.18$^{*\Delta\#}$	7.61±0.18*†	7.84±0.18$^{\ddagger\#}$	8.40±0.18$^{\Delta\dagger\ddagger}$
VCSS at 12 month	4.13±0.17$^{*\Delta\#}$	4.92±0.17*§†	5.73±0.17$^{\ddagger\S\#}$	6.72±0.17$^{\Delta\dagger\ddagger}$

*: statistical significance of the difference between Group 1 and Subgroup 2A ($p<0.05$);
#: statistical significance of the difference between Group 1 and Subgroup 2B ($p<0.05$);
Δ: statistical significance of the difference between Group 1 and Group 3 ($p<0.05$);
§ : statistical significance of the difference between Subgroup 2A and Subgroup 2B ($p<0.05$);
†: statistical significance of the difference between Subgroup 2A and Group 3 ($p<0.05$);
‡: statistical significance of the difference between Subgroup 2B and Group 3 ($p<0.05$).

The mean VCSS values decreased significantly one month after treatment. The best results were observed in the 3rd group ($t=6.9$; $p<0.05$), while no statistically significant differences were found between the 1st group and the 2nd group with its subgroups ($p>0.05$).

Three months after treatment, no statistically significant difference in VCSS was observed between patients of the 1st group and the 2nd group ($p>0.05$). The greatest statistically significant difference was found between subgroup 2A and the 3rd comparison group ($t=3.8$; $p<0.05$).

Six months after treatment, the best dynamics were observed in the 1st group, where the mean values were significantly lower compared to subgroup 2A ($t=2.4$; $p<0.05$), subgroup 2B ($t=3.3$; $p<0.05$), and the 3rd group ($t=5.5$; $p<0.05$).

Twelve months after treatment, a statistically significant reduction in clinical severity was recorded in all groups and subgroups. The lowest VCSS values were observed in the 1st group compared to subgroup 2A ($t=3.3$; $p<0.05$), subgroup 2B ($t=6.7$; $p<0.05$), and the 3rd group ($t=10.8$; $p<0.05$).

When comparing the mean VCSS values in patients before and after surgical treatment, a statistically significant reduction in the manifestations of clinical

severity of chronic venous insufficiency was observed in all groups and subgroups. The fastest postoperative results, assessed one month after treatment, were observed in the 3rd group ($t=6.1$; $p<0.05$), whereas no statistically significant differences were found in the other groups and subgroups ($p > 0.05$). A significant reduction in clinical manifestations of the disease also persisted in the 3rd group at 3 months after treatment ($t=5.6$; $p<0.05$), in contrast to the 1st group ($t=2.2$; $p<0.05$), subgroup 2A ($t=2.6$; $p<0.05$), and subgroup 2B ($t=2.6$; $p<0.05$), respectively. After 6 months, the severity of chronic venous insufficiency manifestations decreased significantly in the 1st and 3rd groups ($t=4.9$; $p<0.05$) compared to the 2nd group. Analysis of the most long-term results at 12 months showed that the best outcomes were demonstrated by the 1st group ($t=9.1$; $p<0.05$) compared with subgroup 2A ($t=8.5$; $p<0.05$), subgroup 2B ($t=8.6$; $p<0.05$), and the 3rd group ($t=8.2$; $p<0.05$).

According to the obtained results, multimodal combined treatment (RFA + miniphlebectomy + perforator vein ligation) ensured the most pronounced and sustained improvement in patients' QoL and the greatest reduction in the clinical severity of chronic venous insufficiency compared with the mono-endovenous approach.

DISCUSSION

The results of the present study demonstrate that the extent of surgical intervention in CVD of the lower extremities directly influences not only anatomical success but also functional outcomes and patients' quality of life. Although improvement in both CIVIQ-20 and VCSS scores was observed in all study groups, the magnitude and stability of these changes were significantly greater in patients who underwent multimodal combined treatment.

RFA is currently considered an effective minimally invasive method for the treatment of truncal reflux, providing favourable perioperative outcomes and early clinical improvement [10, 11, 12]. Previous studies have demonstrated that RFA leads to a rapid reduction in clinical severity and improvement in quality-of-life parameters within the first months after intervention [13, 14]. Our findings are consistent with these data, as patients who underwent isolated RFA showed the most pronounced early postoperative improvement.

However, the long-term results observed in the present study indicate that isolated elimination of truncal reflux is insufficient to achieve complete clinical recovery. Despite successful obliteration of the saphenous trunks, patients in the mono-endovenous treatment group demonstrated persistently higher VCSS scores and lower CIVIQ-20 values at 6 and 12 months compared with patients who received combined treatment. This finding is consistent with previous reports indicating that untreated tributary veins and incompetent perforators may remain a source of persistent reflux and disease progression [15].

From a pathophysiological perspective, these findings can be explained by the concept of pathological venous volume. Elimination of truncal reflux addresses the central haemodynamic component of the disease; however, it does not eliminate the peripheral venous reservoirs formed by dilated tributaries and incompetent perforators. These structures maintain venous hypertension and contribute to chronic inflammatory and proteolytic processes in the venous wall, thereby limiting full functional recovery [16].

The importance of a comprehensive treatment approach is supported by comparative studies and meta-analyses demonstrating that single-stage interventions combining endovenous ablation with concomitant treatment of tributaries are associated with better clinical outcomes and lower reintervention rates compared with staged strategies [17]. In addition, combined treatment approaches have been shown to improve quality of life and reduce postoperative complications [18, 19]. Our results are consistent with these findings, showing that the most pronounced and sustained improvement was achieved in patients who underwent multimodal treatment.

Current clinical guidelines emphasise an individualised approach to the management of perforator vein incompetence. According to the 2022 ESVS Clinical Practice Guidelines, routine treatment of perforators is not recommended in early stages of CVD; however, in patients with advanced disease (CEAP C4b-C6), their correction may be justified [20]. The present study supports this concept, as more complete elimination of pathological venous components was associated with better long-term outcomes.

An important observation is the difference between early and long-term postoperative dynamics. While early improvement was more pronounced after isolated RFA, long-term outcomes were superior following combined treatment. This indicates that short-term haemodynamic correction does not necessarily translate into sustained clinical benefit.

Thus, the findings of this study suggest that optimal surgical management of CVD should not be limited to truncal ablation alone but should aim at comprehensive reduction of pathological venous volume, including both central and peripheral components of the superficial venous system.

CONCLUSIONS

In all study groups, surgical treatment was associated with an improvement in quality of life, as assessed by CIVIQ-20, and a reduction in clinical severity according to the VCSS; however, the magnitude of this improvement

depended on the extent of surgical intervention. Multimodal combined surgical treatment, including RFA with miniphlebectomy of tributary veins and perforator vein ligation, resulted in the most pronounced and sustained statistically significant improvement in patients' quality of life, as well as the greatest reduction in the clinical severity of chronic venous insufficiency.

In contrast, isolated mono-endovenous treatment did not ensure complete normalization of the functional state of the venous system, which was reflected in the persistence of clinical symptoms and lower quality of life indicators. A key determinant of optimal clinical outcomes was the reduction of pathological venous volume rather than the elimination of truncal reflux alone.

Prospects for further research. Prospects for further research include an in-depth investigation of the long-term outcomes of multimodal surgical treatment of chronic venous disease of the lower extremities with an extended follow-up period, as well as the inclusion of a larger patient cohort to increase the statistical power of the obtained data. It is advisable to analyse the impact of combined treatment methods on venous haemodynamic parameters assessed by ultrasound duplex scanning and to evaluate their relationship with changes in QoL indicators and clinical disease severity. Of particular interest is the study of the role of pathological venous volume and individual components of the superficial venous system in maintaining venous hypertension, which may contribute to further optimisation of individualised approaches to determining the extent of surgical intervention.

COMPLIANCE WITH ETHICAL REQUIREMENTS

The study was conducted in accordance with the principles of the Declaration of Helsinki, the standards of Good Clinical Practice (GCP), and current national regulations of Ukraine. The study protocol was approved by the local ethics committee of Zaporizhzhia State Medical and Pharmaceutical University (Protocol No. 7 dated 11 October 2023). Written informed consent was obtained from all participants prior to inclusion in the study.

Study limitations. The present study has several limitations that should be acknowledged. First, it was conducted as a single-centre study, which may limit the generalisability of the obtained results. Second, the sample size, although sufficient to detect statistically significant differences between the groups, remains relatively limited and may affect the external validity of the findings.

In addition, the follow-up period was restricted to 12 months, which does not allow full assessment of long-term outcomes, including recurrence rates and durability of clinical improvement.

Therefore, further multicentre studies with larger patient populations and extended follow-up periods are required to confirm the obtained results and to improve the level of evidence.

Declaration of the use of generative AI in the preparation of the manuscript. This work did not use artificial intelligence to generate text, analyse data, or create images. All content is prepared by the authors, who bear full responsibility for accuracy, originality, and adherence to ethical standards.

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AUTHOR CONTRIBUTIONS

Druzhkin M. V.[A, B, C, D, E]

Klymenko A. V.[A, E, F]

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Резюме

ОЦІНКА ЯКОСТІ ЖИТТЯ І КЛІНІЧНОЇ ЕФЕКТИВНОСТІ ХІРУРГІЧНОГО ЛІКУВАННЯ ПАЦІЄНТІВ З ВАРИКОЗНОЮ ХВОРОБОЮ НИЖНІХ КІНЦІВОК

Микита В. Дружкін[1,2], Андрій В. Клименко[1]

[1]Запорізький державний медико-фармацевтичний університет, м. Запоріжжя, Україна
[2]ТОВ «КРАМ ІНВЕСТ», м. Запоріжжя, Україна

Вступ. Варикозна хвороба нижніх кінцівок (ВХНК) в стадії хронічної венозної недостатності супроводжується прогресуючим перебігом, високою частотою ускладнень та істотним зниженням якості життя пацієнтів. Незважаючи на широке впровадження ендовенозних термічних методів лікування, ізольована ліквідація стовбурового рефлюксу не завжди забезпечує у післяопераційному періоді повноцінне клінічне та функціональне відновлення.

Мета. Оцінити якість життя та клінічні прояви хвороби у пацієнтів із ВХНК в найближчому та віддаленому післяопераційному періодах залежно від способу хірургічного лікування.

Матеріали та методи. Загалом у дослідження було включено 139 пацієнтів (100%) із ВХНК на стадії хронічної венозної недостатності (С3–С6 за CEAP), яких було розподілено на три групи. У групі 1 (n=32; 23,02%) виконували ендовенозну радіочастотну абляцію (РЧА) великої та/або малої підшкірних вен у поєднанні з мініфлебектомією та перев'язкою неспроможних перфорантних вен. Група 2 (n=64) включала підгрупу 2А (n=31; 22,30%) – РЧА у поєднанні з мініфлебектомією без перев'язки перфорантних вен, та підгрупу 2Б (n=33; 23,74%) – РЧА у поєднанні з перев'язкою перфорантних вен без мініфлебектомії. У групі 3 (n=43; 30,94%) виконували ізольовану РЧА.

Методи дослідження включали клінічне обстеження (збір скарг, анамнезу захворювання та життя, фізикальне обстеження, лабораторні дослідження), ультразвукове дуплексне сканування вен нижніх кінцівок, оцінку якості життя за опитувальником CIVIQ-20 (invGIS), визначення показника VCSS та статистичний аналіз.

Результати. У всіх групах після лікування відзначалося покращення показників якості життя та зниження клінічної тяжкості. Найбільш виражені та стійкі позитивні зміни спостерігалися у пацієнтів, яким було виконано мультимодальне комбіноване лікування (РЧА у поєднанні з мініфлебектомією притокових вен та перев'язкою перфорантних вен). Через 12 місяців показники CIVIQ-20 в основній групі були достовірно вищими, а VCSS – нижчими порівняно з групами моноендовенозного та частково комбінованого лікування ($p<0,05$).

Висновки. Мультимодальне лікування ВХНК забезпечує найбільш повноцінне відновлення якості життя пацієнтів та достовірно знижує клінічну тяжкість хвороби у порівнянні з моноабляцією та частково комбінованим лікуванням.

Ключові слова: **хронічне захворювання вен, варикозна хвороба, ендовенозна абляція, мініфлебектомія, перфорантні вени, якість життя, хірургічне лікування, венозна недостатність**

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