A multicenter, prospective, randomized, open-label study to evaluate the clinical effectiveness and economic feasibility of the algorithm for nutritional support of patients after ischemic stroke at all stages of rehabilitation of the early recovery period compared with other complete diets

CENTRIS

Final Report

Nutricia LLC (Russia)

2024

1. Cover

Study title	A multicenter, prospective, randomized, open-label study to evaluate the clinical effectiveness and economic feasibility of the algorithm for nutritional support of patients after ischemic stroke at all stages of rehabilitation of the early recovery period compared with other complete diets
Protocol	CENTRIS (ЦЕНТРИС) (C-linical E-ffectiveness N-utrition Therapy in R-ehabilitation after I-schemic S-troke)
Protocol version	1.5
Date of Protocol	17 APR 2024
Active substance	Not applicable
Study product (SP)	Nutrison Protein Advance 500ml (7,5 g of protein/ 128 kkal /100 ml) (RU.77.99.32.004.R.001500.06.20 от 10.06.2020 года) Manuf. N.V. Nutricia, Eerste Stationsstraat 186 2712 HM Zoetermeer Netherlands Nutridrink 200 ml (5,9 g of protein/ 150 kkal /100 ml) (RU.77.99.19.004.E.002238.02.15 от 06.12.2015 года) Manuf.: Danone Tikveşli Gıda ve Icecek San. Ve Tic. A.S., Cumhuriyet Man, Pınarhisar Asfaltı Yolu Küme Evleri Danone Blok No:14 iç Kapı No: 1 Lüleburgaz/Kırklareli, Turkey Nutrison Advanced Nutridrink dry powder 322 g (RU.77.99.32.004.R.000830.03.20 от 25.03.2020 года) Manuf.: Milupa GMBH, Schleyerstrasse 4, 36041 Fulda, Germany Nutilis Clear 175 g (RU.77.99.32.004.R.002799.08.22 от 22.08.2022 года) Manuf: SHS International Ltd., 100 Wavertree Boulevard, Liverpool, L7 9PT, UK (not medicines) Study products supplied by the study sponsor
Comparison products	any food/diet methods used in hospital or at home
Study Phase	Post-registration study
Study population	Patients aged 45 to 75 years with primary ischemic stroke, acute phase (hospital) (n=90)
Study Territory	Russian Federation
Study Sponsor	Nutricia LLS (ОГРН 1025001816256) **Tatiana Novikova, M.D.,** Medical Manager Critical Care& Neurology Medical & Market Access Department SN Russia/AMEA 2 Syromyatnicheskiy per, 1, Moscow 105120 Russian Federation M: +7 (916) 561 56 97

	tatyana.novikova@danone.com
Study Objectives	To study the clinical efficacy and economic feasibility of using a nutritional support algorithm as part of complex therapy for patients after moderate ischemic stroke using specialized food products at all stages of rehabilitation of the early recovery period compared to other complete diets.
Data Management system	Enrollme.ru®
Principal Investigators	Prof. Shamalov NA[1] prof. Ivanova GE[2] [1] doctor of medical sciences, professor of the Department of Neurology, Neurosurgery and Medical Genetics of the Faculty of Medicine of the Russian National Research Medical University named after N. I. Pirogov. Executive Secretary of the National Association for the Fight against Stroke (NABI), Director of the Institute of Cerebrovascular Pathology and Stroke of the Federal Center for Medical Sciences of the Federal Medical and Biological Agency of Russia [2] doctor of medical sciences, professor. Head of the Department of Medical Rehabilitation of the Faculty of Continuing Professional Education of the Federal State Autonomous Educational Institution of Higher Education "N.I. Pirogov Russian National Research Medical University" of the Ministry of Health of the Russian Federation
Contract Management	Enrollme.ru LLC (ОГРН 1187746457249) 121205, Moscow, Skolkovo, Nobel str. 7 **Mikhail Getman** CEO +7(915)322-7080 Mikhail.Getman@enrollme.ru

2. Content

1. Cover 2
2. Content 4
3. Tables and Figures 6
4. Study Summary 8
5. Ethics 9
5.1. Ethics Committee conclusion 9
6. Study Management 12
7. Study Objectives 13
8. Methods 14
8.1. Study design 14
8.2. Criteria 15
8.3. Randomization 16
9. Quality Control 17
10. Statistical Analysis Plan 18
11. Naming of groups and subgroups in the Report 21
12. Demography and Disposition 22
Sex, Age, Height (V1) 22
Disposition (at V1) 22
13. Descriptive statistics 25
14. Statistical study Summary 46
15. Efficacy 48
15.1. Weight 48
15.2. SHRM (Rehabilitation Routing Scale) 52
15.3. EAT-10 54
15.4. Rivermead mobility index 57
15.5. Blood 59
Total Protein 59
Serum albumin 60
Absolute lymphocytes 62
Prognostic Nutritional Index (PNI) 64
Serum creatinine 67
15.6. Hand grip strength 70
15.7. Quality of life scale EQ-5D-3L 72
15.8. MASA The Mann Assessment of Swallowing Ability 76

15.9. Bartell index 79
15.10. Appetite and available feeding 84
16. Safety 87
17. Additional data 88
18. Discussion 91
19. REFERENCES 93

3. Tables and Figures

Tables

Table 1 Study Investigators....12
Table 2 Age of patients (years)....22
Table 3 Sex of patients....22
Table 4 Height of patients (cm)....22
Table 5 Time to hospitalization since stroke (hours)....22
Table 6 Duration of hospitalization (days)....23
Table 7 Glasgow scale....23
Table 8 NRS 2002....23
Table 9 Level of dysphagia (V1)....24
Table 10 Summary of the statistical study results, quantitative variables, by groups....46
Table 11 Summary of the statistical study results, quantitative variables, by subgroups....46
Table 12 Summary of the statistical study results, categorical variables, by groups....47
Table 13 Summary of the statistical study results, categorical variables, by subgroups....47
Table 14 Weight measured, mean (kg)....48
Table 15 Change in weight V5-V1 (measured weight, kg) by groups and subgroups....48
Table 16 Weight calculated, mean (kg)....49
Table 17 Change in weight V5-V1 (calculated weight, kg) by groups and subgroups....50
Table 18 SHRM score, mean....52
Table 19 Change of SHRM score V5-V1....52
Table 20 EAT-10 scores, mean....54
Table 21 Change of mean EAT-10 V3-V1....54
Table 22 Change of mean EAT-10 V5-V1....55
Table 23 Rivermead score (means)....57
Table 24 Change of Rivermead score (V5-V1)....57
Table 25 Total protein, means (g/l)....59
Table 26 Change of total protein (V5-V1, g/l)....59
Table 27 Serum albumin, means (g/l)....60
Table 28 Change of serum albumin (V5-V1, g/l)....61
Table 29 Absolute lymphocytes, means (10^9/l)....62
Table 30 Change of absolute lymphocytes (V5-V1) 10^9/l....63
Table 31 PNI, means....64
Table 32 Change of PNI (V3-V1)....65
Table 33 Change of PNI (V5-V1)....66
Table 34 Serum creatinine, means (mcmol/l)....67
Table 35 Change of serum creatinine (V5-V1) mcmol/l....68
Table 36 Hand grip strength (DaN)....70
Table 37 Change of hand grip strength (V3-V1), DaN....70
Table 38 EQ-5D-3L index, means....72
Table 39 Change of EQ-5D-3L index (V5-V1)....72
Table 40 VAS scale of EQ-5D-3L, means....73
Table 41 Change of VAS scale of EQ-5D-3L (V5-V1)....74
Table 42 MASA index, means....76
Table 43 Change of MASA index (V3-V1)....76
Table 44 MASA scale of dysphagia and aspiration (% of patients)....77
Table 45 Bartell index, means....79
Table 46 Change of Bartell index (V3-V1)....79
Table 47 Change of Bartell index (V5-V1)....80
Table 48 Level of patient dependence by the Bartell scale (V5-V1)....81
Table 49 Distribution of patient nutrition intensity during visits (%)....84
Table 50 Distribution of patients' appetite by visits (%)....84
Table 51 Listing of adverse event reports....87

Table 52 Information on patient deaths after completion of the study 88
Table 53 Information on recurrent strokes in patients after completion of the study 89
Table 54 Frequency of mentioning food products in the control group 90

Рисунки

Figure 1 Conclusion of the Ethics Committee 1 10
Figure 2 Conclusion of the Ethics Committee 2 11
Figure 3 Study design scheme 15
Figure 4 Weight measured, mean (kg) 48
Figure 5 Change in weight V5-V1 (measured weight, kg) by groups and subgroups 49
Figure 6 Weight calculated, mean (kg) 50
Figure 7 Change in weight V5-V1 (calculated weight, kg) by groups and subgroups 50
Figure 8 Results of distribution of measured and calculated weight, kg 51
Figure 9 SHRM score, mean 52
Figure 10 Change of SHRM score V5-V1 53
Figure 11 EAT-10 scores, mean 54
Figure 12 Change of mean EAT-10 V3-V1 55
Figure 13 Change of mean EAT-10 V5-V1 56
Figure 14 Rivermead score (means) 57
Figure 15 Change of Rivermead score (V5-V1) 58
Figure 16 Total protein, means (g/l) 59
Figure 17 Change of total protein (V5-V1, g/l) 60
Figure 18 Serum albumin, means (g/l) 61
Figure 19 Change of serum albumin (V5-V1, g/l) 62
Figure 20 Absolute lymphocytes, means (10^9/l) 63
Figure 21 Change of absolute lymphocytes (V5-V1) 10^9/l 64
Figure 22 PNI, means 65
Figure 23 Change of PNI (V3-V1) 66
Figure 24 Change of PNI (V5-V1) 67
Figure 25 Serum creatinine, means (mcmol/l) 68
Figure 26 Change of serum creatinine (V5-V1), mcmol/l 69
Figure 27 Hand grip strength (DaN) 70
Figure 28 Change of hand grip strength (V3-V1), DaN 71
Figure 29 EQ-5D-3L index, means 72
Figure 30 Change of EQ-5D-3L index (V5-V1) 73
Figure 31 VAS scale of EQ-5D-3L, means 74
Figure 32 Change of VAS scale of EQ-5D-3L (V5-V1) 74
Figure 33 MASA index, means 76
Figure 34 Change of MASA index (V3-V1) 77
Figure 35 Bartell index, means 79
Figure 36 Change of Bartell index (V3-V1) 80
Figure 37 Change of the Bartell index (V5-V1) 81
Figure 38 Proportion of patients with “dependence” improvement (Bartell scale) by visit 3 in groups 82
Figure 39 Proportion of patients with “dependence” improvement (Bartell scale) by visit 5 in groups 83
Figure 40 Proportion of patients with improved appetite by visit 5 by groups 86
Figure 41 Proportion of deceased patients after completion of the study (%) by group 88
Figure 42 Proportion of patients who had a recurrent stroke after completion of the study (%) by group 89

4. Study Summary

Study title: Multicenter, prospective, randomized, open-label study to evaluate the clinical effectiveness and economic feasibility of a nutritional support algorithm for patients after ischemic stroke at all stages of rehabilitation of the early recovery period compared to other complete diets.

Protocol version and date: CENTRIS v.1.5 of April 17, 2024

Study rationale:

Based on the results of the literature review (chapter "Relevance and rationale for the study"), we draw the following main conclusions:

- Mortality and disability after ischemic stroke continue to be a serious problem, especially against the background of a projected global increase in the incidence of ischemic stroke in the period up to 2030
- Nutritional disorders and wasting in patients after stroke, associated with neurological disease and dysphagia are very common and, thus, worsen the overall prognosis for survival and functional recovery
- Nutritional support based on the use of specialized food products has a positive effect on clinical outcomes, but requires further research

Based on the studied properties and composition of the studied products, it was hypothesized that a consistent algorithm of nutritional support for patients who have suffered an ischemic stroke at all stages of rehabilitation of the early recovery period within 3 months after the crisis, will have a positive impact on the outcomes, course of the disease, and the timing of functional recovery of patients.

To organize the enrollment of patients, screening and collection of the study data, a temporary network of researchrs was created, as well as a network database based on the digital research management platform "Enrollme.ru" (a participant in the Skolkovo project).

Study sponsor: Nutricia LLC (OGRN 1025001816256)

Study objectives: The aim of the study was to study the clinical efficacy and economic feasibility of using a nutritional support algorithm as part of complex therapy for patients after moderate ischemic stroke using specialized food products at all stages of rehabilitation of the early recovery period compared to other diets. Possible adverse events were also studied and described.

Study design: Multicenter, prospective, open, comparative, two-group, post-registration, minimally interventional study. Setting: Russian Federation

Study population: The study included 90 patients aged 45 to 75 years with primary ischemic stroke, acute phase (hospital), who met the inclusion/exclusion criteria. Patients were randomly divided into two groups: a study group of 60 people and a control group of 30 people. After discharge from the hospital, the study group was randomized into two subgroups: 32 and 28 people who received additional nutritional support at the outpatient stage and those who switched to their usual diet at home, respectively.

Duration of follow-up: 90 days from the date of Visit 1.

Data sources: Electronic CRF and adverse event report forms completed by the study physician during visits were used to collect data. The study included screening and 5 visits.

Study timing: Patient recruitment began in May 2024. The last visit of the last patient was made before December 1, 2024.

5. Ethics

The CENTRIS study was prepared and conducted in accordance with legislative, regulatory, industry standards and applicable ethical requirements. The main criteria defining a prospective observational study include the following:

- the study is conducted for scientific purposes;
- the study must have a program (protocol, plan) of the study, which, in particular, must define the interaction with healthcare professionals and / or organizations in which the study is conducted, and the Sponsor;
- the study protocol must be approved by the scientific department of the company, which must supervise the study;
- the study protocol must be submitted for review to the ethics committee;
- the study must not encourage the recommendation, prescription or sale of the study product;
- a condition for including a patient in a non-interventional study is obtaining his / her voluntary informed consent in writing;
- The study results must be analyzed, a summary of the results must be published within a reasonable time, and the final report must be received by all physician observers participating in the program. If the results of the study are important for assessing the utility's risk indicators, the final report should be submitted promptly to the appropriate regulatory authority.

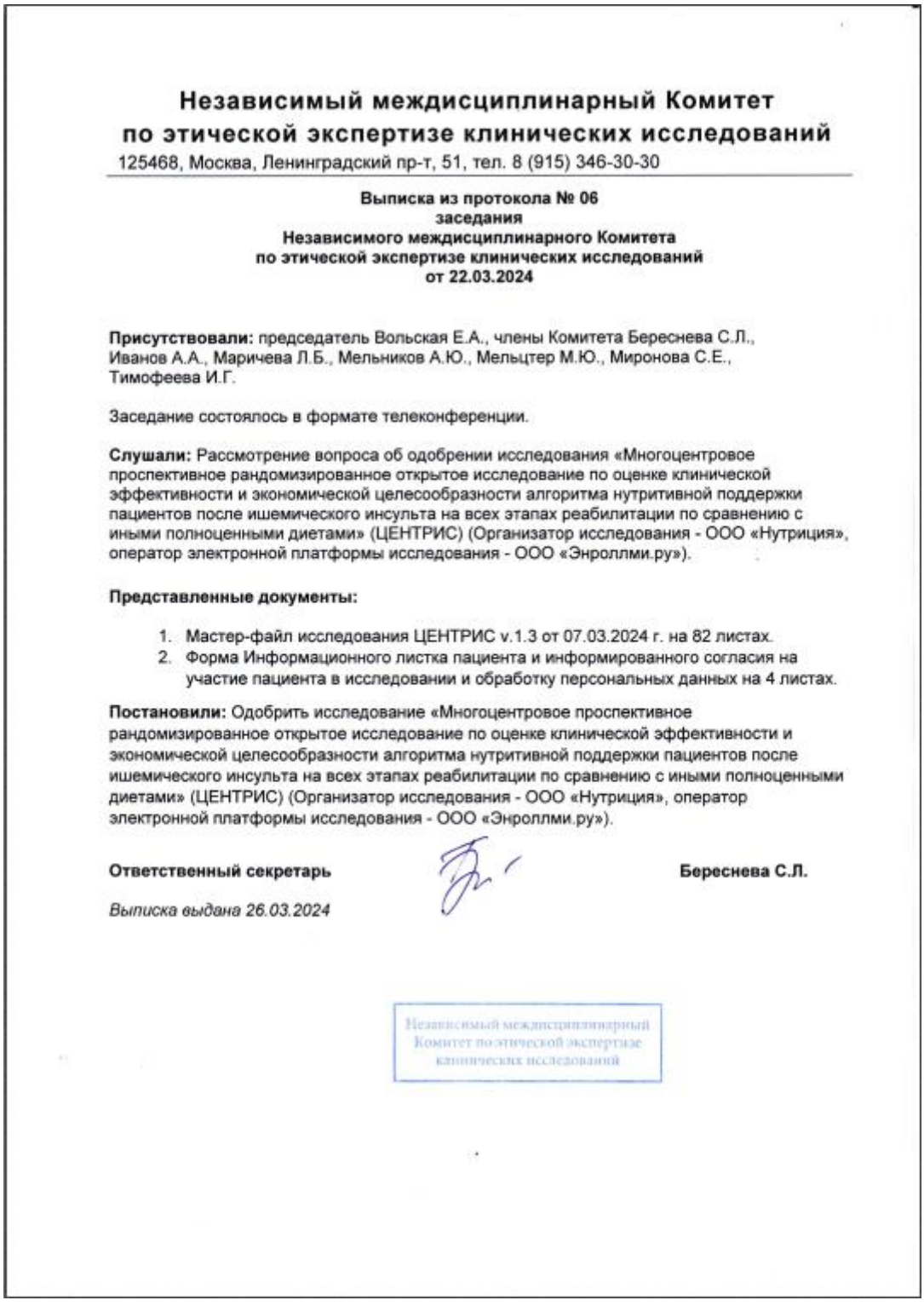
The CENTRIS study protocol and design meet these criteria.

5.1. Ethics Committee conclusion

The study was approved by the decision of the Independent Multidisciplinary Committee for Ethical Review of Clinical Trials, extracts from protocol No. 06 dated March 22, 2024 and protocol No. 09 dated May 03, 2024.

Copies included.

Figure 1 Conclusion of the Ethics Committee 1



Независимый междисциплинарный Комитет
по этической экспертизе клинических исследований

125468, Москва, Ленинградский пр-т, 51, тел. 8 (915) 346-30-30

Выписка из протокола № 06
заседания
Независимого междисциплинарного Комитета
по этической экспертизе клинических исследований
от 22.03.2024

Присутствовали: председатель Вольская Е.А., члены Комитета Береснева С.Л., Иванов А.А., Маричева Л.Б., Мельников А.Ю., Мельцтер М.Ю., Миронова С.Е., Тимофеева И.Г.

Заседание состоялось в формате телеконференции.

Слушали: Рассмотрение вопроса об одобрении исследования «Многоцентровое проспективное рандомизированное открытое исследование по оценке клинической эффективности и экономической целесообразности алгоритма нутритивной поддержки пациентов после ишемического инсульта на всех этапах реабилитации по сравнению с иными полноценными диетами» (ЦЕНТРИС) (Организатор исследования - ООО «Нутриция», оператор электронной платформы исследования - ООО «Энроллми.ру»).

Представленные документы:

1. Мастер-файл исследования ЦЕНТРИС v.1.3 от 07.03.2024 г. на 82 листах.
2. Форма Информационного листка пациента и информированного согласия на участие пациента в исследовании и обработку персональных данных на 4 листах.

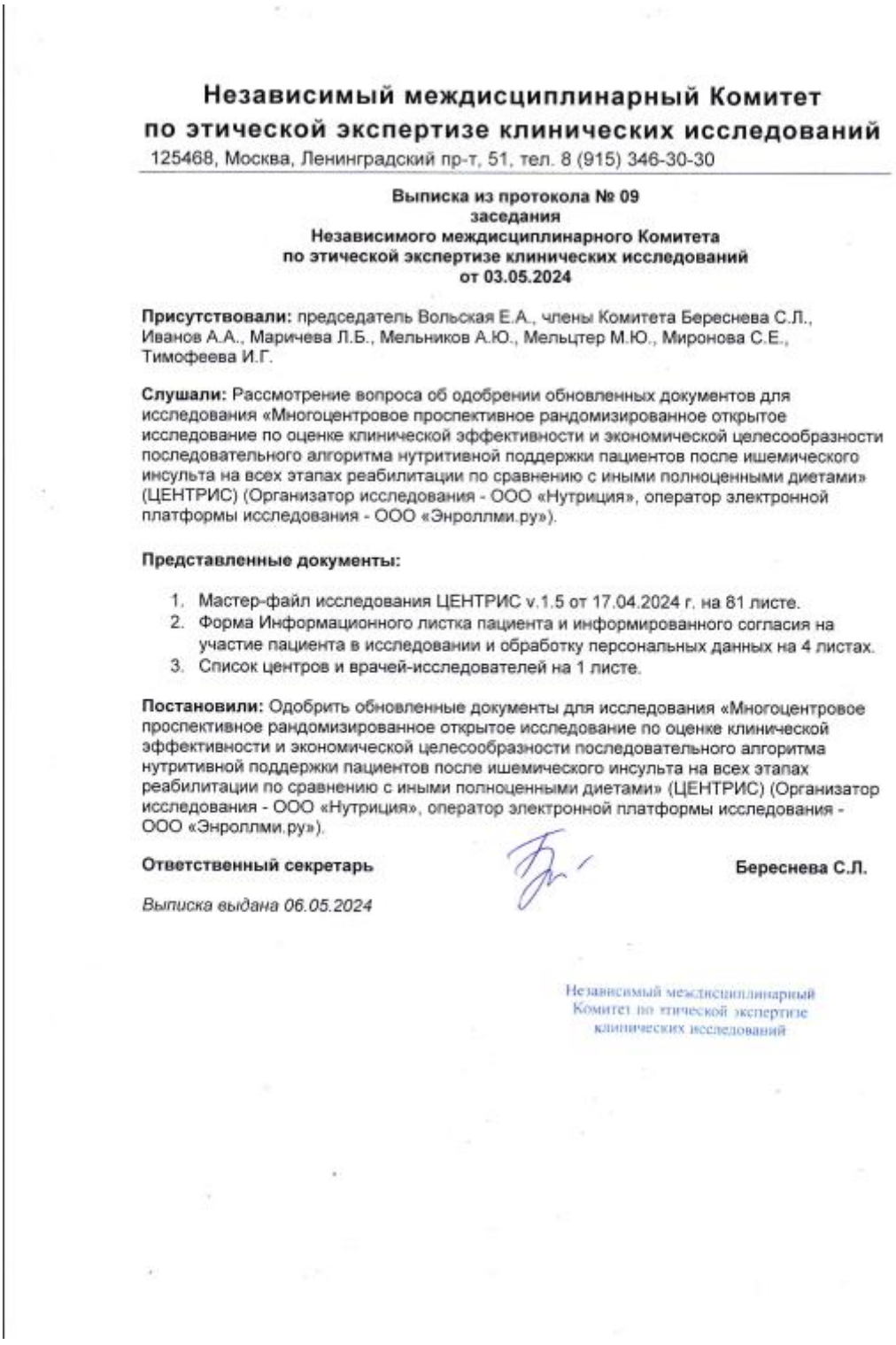
Постановили: Одобрить исследование «Многоцентровое проспективное рандомизированное открытое исследование по оценке клинической эффективности и экономической целесообразности алгоритма нутритивной поддержки пациентов после ишемического инсульта на всех этапах реабилитации по сравнению с иными полноценными диетами» (ЦЕНТРИС) (Организатор исследования - ООО «Нутриция», оператор электронной платформы исследования - ООО «Энроллми.ру»).

Ответственный секретарь **Береснева С.Л.**

Выписка выдана 26.03.2024

Независимый междисциплинарный Комитет по этической экспертизе клинических исследований

Figure 2 Conclusion of the Ethics Committee 2



Независимый междисциплинарный Комитет
по этической экспертизе клинических исследований
125468, Москва, Ленинградский пр-т, 51, тел. 8 (915) 346-30-30

Выписка из протокола № 09
заседания
Независимого междисциплинарного Комитета
по этической экспертизе клинических исследований
от 03.05.2024

Присутствовали: председатель Вольская Е.А., члены Комитета Береснева С.Л., Иванов А.А., Маричева Л.Б., Мельников А.Ю., Мельцтер М.Ю., Миронова С.Е., Тимофеева И.Г.

Слушали: Рассмотрение вопроса об одобрении обновленных документов для исследования «Многоцентровое проспективное рандомизированное открытое исследование по оценке клинической эффективности и экономической целесообразности последовательного алгоритма нутритивной поддержки пациентов после ишемического инсульта на всех этапах реабилитации по сравнению с иными полноценными диетами» (ЦЕНТРИС) (Организатор исследования - ООО «Нутриция», оператор электронной платформы исследования - ООО «Энроллми.ру»).

Представленные документы:

1. Мастер-файл исследования ЦЕНТРИС v.1.5 от 17.04.2024 г. на 81 листе.
2. Форма Информационного листка пациента и информированного согласия на участие пациента в исследовании и обработку персональных данных на 4 листах.
3. Список центров и врачей-исследователей на 1 листе.

Постановили: Одобрить обновленные документы для исследования «Многоцентровое проспективное рандомизированное открытое исследование по оценке клинической эффективности и экономической целесообразности последовательного алгоритма нутритивной поддержки пациентов после ишемического инсульта на всех этапах реабилитации по сравнению с иными полноценными диетами» (ЦЕНТРИС) (Организатор исследования - ООО «Нутриция», оператор электронной платформы исследования - ООО «Энроллми.ру»).

Ответственный секретарь **Береснева С.Л.**

Выписка выдана 06.05.2024

Независимый междисциплинарный
Комитет по этической экспертизе
клинических исследований

6. Study Management

CENTRIS Study sponsor – Nutricia LLC (ОГРН 1025001816256).

CRO – Enrollme.ru LLC (ОГРН 1187746457249)

Task	Responsibility of Nutricia LLC	Responsibility of Enrollme.ru LLC
Study documentation	Approves	Develops
Obtaining ethical review	-	Gains approval from the Independent Committee on the Ethical Review of Clinical Research
Training of the Sponsor's representative to work with Enrollme.ru CTMS	Appoints a representative responsible for work in IS Enrollmi.ru	Trains Sponsor's representatives to work with electronic forms of documents in Enrollme.ru CTMS
Centers recruitment and start-up	Searches and recruits medical researchers	Provides technical support for the registration of doctors in Enrollme.ru CTMS
Contracts	-	Concludes contracts, maintains paperwork, closes contracts, pays research grants
Centers training	-	Trains investigators to work with electronic forms of documents in Enrollme.ru CTMS
Centers' relations	-	Communicates with researchers, centers, provides assistance and technical support (ensuring operability and troubleshooting)
Enrollment of patients	-	Controls the enrollment of patients into the study and adherence to the enrollment deadlines
Study monitoring	If necessary, monitors the study with a visit to the research center, including control of CRFs and the compliance of the data with primary medical documentation	Performs remote control, makes queries to the data and closes CRFs for editing
Use of Enrollme.ru CTMS	Uses Enrollme.ru CTMS for the entire period of the study	Provides technical support (ensuring operability and troubleshooting) during the study
Data management	-	Cleaning of the database, preparation of datasets for statistical analysis
Statistics Report	Approves	Statistical analysis of the data, prepares a Statistical Report
Final report of the study	Approves	Prepares the Final Study report
Responsible persons	Nutricia LLC (ОГРН 1025001816256) 26 km Baltia highway, MO, Krasnogorsky district, BC Riga Land, block 1, Moscow Region, 143421, Russia **Tatiana Lavrova, MD, PhD** Head of Medical Affairs SN Russia/AMEA + 7 910 470 96 73 Tatyana.Lavrova@danone.com	Enrollme.ru LLC (OGRN 1187746457249) 121205, Moscow, Skolkovo, Nobel str., 7 **Mikhail Getman** CEO +7(915) 322-7080 Mikhail.Getman@enrollme.ru

Table 1 Study Investigators

1	Novikova Nadezhda Valer'evna	Clinical hospital by Tver'e", Perm'
2	Vas'kovskaya Inga Vladimirovna	Clinical hospital by Vinogradov", Moscow
3	Zhigulskaya Nadezhda Alexandrovna	Voronezh Oblast' Clinical Hospital 1, Voronezh
4	Gumarova Laysan Shamilovna	Clinical hospital 7 by Sadykov, Kazan

7. Study Objectives

The aim of the study was to investigate the efficacy and economic feasibility of using a nutritional support algorithm as part of complex therapy for patients after moderate ischemic stroke using specialized food products at all stages of rehabilitation of the early recovery period compared to other complete diets. Possible adverse events were also studied and described.

Thus, the objectives of the study were related to solving one of the urgent medical problems in terms of studying nutritional support for patients who have suffered of an ischemic stroke

8. Methods

8.1. Study design

A multicenter, prospective, randomized, open-label study to evaluate the clinical efficacy and economic feasibility of a nutritional support algorithm for patients after ischemic stroke at all stages of rehabilitation of the early recovery period of the early recovery period compared to other diets included the following methodology.

Physicians were included in the study in accordance with the standard algorithm of the Enrollme.ru information system after registration and qualification by the Sponsor.

The researchers screened patients in accordance with the inclusion/exclusion criteria, obtained informed consent from patients or their legal representatives, and included patients in the study. The document was signed and dated on paper, for which the physician printed out the document in 2 copies, invited the patient/legal representative of the patient to review it and sign it in case of consent, and the signed document remained in the archive of the research physician. The researcher had to make sure that informed voluntary written consent to participate in the study, receipt and processing of personal data was obtained in accordance with Art. 13 of the Federal Law "On the Fundamentals of Health Protection of Citizens" dated November 21, 2011 No. 323-FZ and Article 9 of the Federal Law dated July 27, 2006 N 152-FZ "On Personal Data". At the same time, the full names of patients were not entered into the Enrollme.ru IS, but the doctor had to indicate the date of signing the informed consent when registering the patient. The responsibility for the accuracy of the data on the patient signing the informed consent lay with the doctor.

The study included 90 patients who had suffered an ischemic stroke and met other inclusion/exclusion criteria. Patients were randomly divided into two groups: a study group of 60 people (30 + 30) and a control group of 30 people.

Patients in the study group at stages 1 and 2 (from day 1 to day 30 (hospitalization stage)) received nutritional support, including the study products: if tube feeding was required, the starter enteral nutrition product Nutrison Protein Advance[1], or the sipping Nutridrink (energy 600 kcal/day, protein 24 g/day) orally as additional nutrition or in combination with the thickener Nutilis Clear (in the presence of dysphagia) in the required amount, taking into account the nutritional needs[1].

After discharge from the rehabilitation department of the hospital (stage 2), the study group was randomly divided into 2 subgroups and received nutrition according to the following scheme for 60 days (from the 31st to the 90th):

- Subgroup 1 (n=32) received, in addition to their usual diet, the product Nutrison Advanced Nutridrink in hypercaloric dilution (300 kcal, 12 g protein) taking into account the need or in combination with the thickener Nutilis Clear in the presence of dysphagia
- Subgroup 2 (n=28) received the usual diet[1] or in combination with the thickener Nutilis Clear in the presence of dysphagia

Patients in the control group received any products/methods of enteral nutrition used for 90 days at all stages of rehabilitation of the early recovery period (in hospital or at home), taking into account the need for nutrition of the standard hospital diet, and upon discharge - the usual diet.

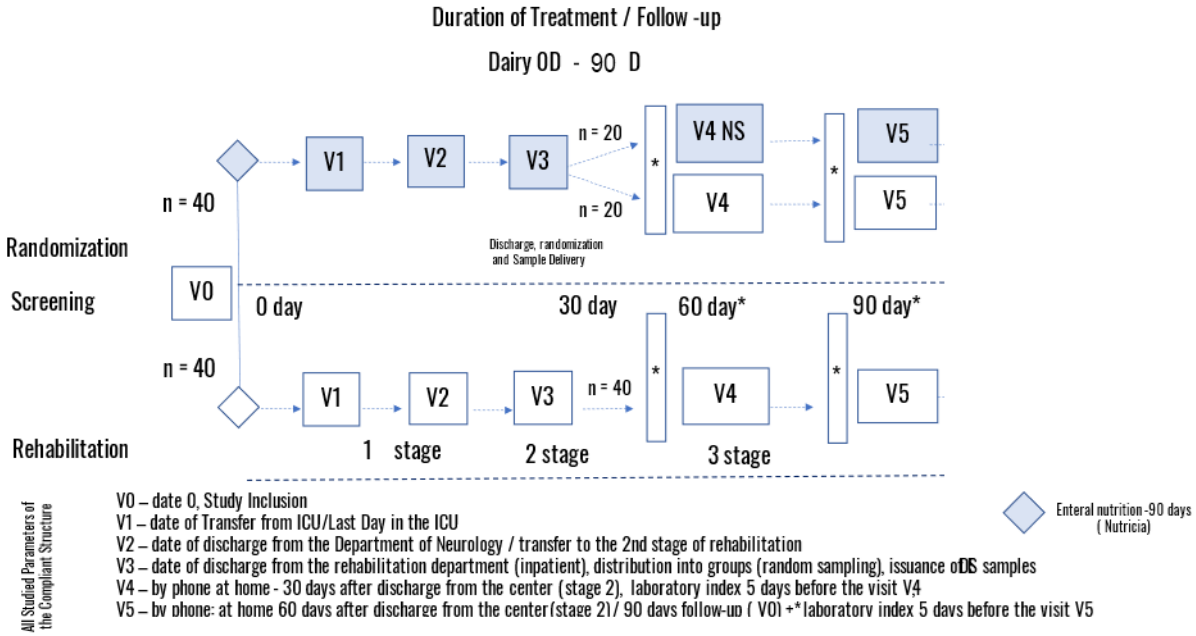
During the study, the investigators used electronic case report forms (CRF) and electronic adverse event reports (AERs) automatically generated in the Enrollme.ru information system to collect data.

In total, the study included screening and 5 visits, including B0 (screening) and B1-B5 (observations).

[1] The recommended energy value of nutrition for patients with acute ischemic stroke is not less than 30 kcal/kg/day or 2000 kcal/day. The calculation of nutritional needs in all groups (control and research) during the early recovery period was carried out based on the scheme of step-by-step increase in the caloric content of nutritional support during the first 4-5 days recommended by a number of experts for patients in intensive care and routine practice of the calculated energy requirement of 25-30 kcal/kg, protein requirement of 1.2-1.5 g/kg/day (hospital, rehabilitation center) [1-4].

Observations lasted 90 days from the date of visit 1.

Figure 3 Study design scheme



During each visit, the investigator filled out case report forms (CRF), patient questionnaire forms.

If adverse events were detected during the study, the investigator filled out an adverse event report (AER).

8.2. Criteria

Participation of patients in this study should not lead to a change in the usual diagnostic and therapeutic procedures of the included patients, and should not encourage the use of investigational products in cases where the rationale for such use is not obvious.

Patients must meet all of the following inclusion criteria:

- Age 45 – 75 years
- Primary ischemic stroke, acute phase
- SHRM score - rehabilitation routing scale ≤ 3-5
- Glasgow Coma Scale (GCS) ≥ 13 points.
- Presence of post-stroke dysphagia grades 1-4
- Nutritional deficiency detected initially or during follow-up.

A patient cannot be included in the study or must be excluded from the study if he/she meets at least one of the following non-inclusion/exclusion criteria:

- Hemorrhagic stroke
- Glasgow Coma Scale (GCS) < 13 points.
- Inability to perform enteral nutrition (partial/complete intestinal obstruction, severe malabsorption)
- Refusal of the patient (his/her legal representative) to further participate in the study or provide medical care.
- Severe renal failure (GFR <30 ml/min)
- Moderate or severe hepatic failure (Child-Pugh class B or C)
- Investigator's uncertainty about the subject's willingness or ability to comply with the protocol requirements.

- Any other medical or non-medical reasons that, in the physician's opinion, may prevent the patient from participating in the study.;

Exclusion criteria - grounds for terminating the study in a patient:
If, during the study, the physician-investigator identifies events in a patient that meet at least one non-inclusion/exclusion criterion, such patient must be excluded from the study;

- Complications that could be caused by the tube feeding product used. Hypersensitivity to any component of the study food mixture.
- Refusal for safety reasons.

Refusal of the patient (his/her legal representative) to continue participating in the study or to receive medical care. At the same time, the patient's exclusion from the study should not affect the nature of his/her therapy

8.3. Randomization

In the CENTRIS study, patients were randomized according to the standard algorithm of the ENROLLME information system.

9. Quality Control

Before the study, ENROLLME representatives trained the investigators on the following issues:

- Study protocol
- Inclusion/non-inclusion/exclusion criteria
- Procedure for working with Enrollme.ru interfaces
- Procedure for obtaining informed patient consent
- Procedure for filling out electronic CRFs
- Requests and verification of completed CRFs

Enrollme.ru provided the participants with a User Guide containing a step-by-step presentation of the Enrollme.ru algorithms that should be used during the study.

In the event of technical problems during the study, ENROLLME provided a prompt 2-hour response to the identified problems.

Ongoing quality control of the study is carried out in accordance with the Data Management Plan. Monitoring of the study progress was carried out remotely; in-person visits to the study centers were not conducted. The following were subject to control:

- Recruitment of study physicians
- Recruitment of patients, signing of informed consent by patients, recruitment schedules
- Compliance with the schedule of visits for each patient
- Contents of completed records for each patient at each visit

Requests to the CRF data were carried out by authorized ENROLLME employees.

Data quality control before closing the database includes:

- Completeness and integrity of the database,
- Missing or inaccurate data, requests for data, their correction,
- Merging several databases in case of using several versions of the CRF,
- Annotation of data fields,
- Creation of a master copy of the database,
- Formation of data sets for analysis and their rechecking.

All actions with the research database are recorded in the information system.

10. Statistical Analysis Plan

Primary and secondary analyses were presented with descriptive statistics. All continuous variables were summarized using the following parameters: n (sample size of available patients), mean, standard deviation, median, 25th and 75th percentiles, maximum and minimum.

Critical p-values and confidence intervals were calculated as two-sided. The study adopted a statistical significance level of 0.05 (two-sided testing, all p-values were rounded to three decimal places).

Continuous variables were described using the arithmetic mean, standard deviation, 95% confidence intervals, median, upper and lower quartiles.

Categorical variables are presented as frequency percentages.

Missing data are not replaced or imputed. All variables were compared before and after the specified observation period. To test the significance of differences, normally distributed data were tested using appropriate types of ANOVA with repeated measures. In case of other distributions, the Wilcoxon test was used. The chi-square test or Fisher's exact test were used to test the significance of differences in categorical data.

The following methods were used for correlation analysis: Kendall's Tau Correlation Test, Pearson Correlation Test, Spearman Rank Correlation Test.

The analysis of primary and secondary endpoints was performed for the available data set (PP - per protocol).

Groups:

1) The entire population
2) The control group (standard diet) (Group 1)
3) The study group (nutritional support) (Group 2)
4) The study subgroup of complete nutritional support (Group 2.1)
5) The study subgroup of partial nutritional support (Group 2.2

Variables

№	Variable	Population	Methodology
1	Demography and Disposition	Entire population Group 1 Group 2 Group 2.1 Group 2.2	
2	Weight calculated	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean value between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2 Correlation analysis with similar results "Weight measured"
3	Weights measured	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
4	Rehabilitation Routing Scale SHRM	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2

.5	Eating behavior scale EAT-10	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
6	Categorical variable Appetit	Entire population Group 1 Group 2	Comparative analysis of distribution in Group 1 and Group 2
7	Mobility Index Rivermead	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
8	Total Protein	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
9	Serum Albumin	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
10	Total Lymphocytes	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
11	Prognostic Nutritional Index PNI	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between B5 and B1 and between B3 and B1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
12	Serum Creatinine	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
13	Hand grip	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V3 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
14	Quality of life Index EQ-5D-3L TTO	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
15	Quality of life Index EQ-5D-3L VAS	Entire population	Comparison of the change in the mean between V5 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1

		Group 1 Group 2 Group 2.1 Group 2.2	Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
16	MASA scale index	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between V3 and V1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
17	Categorical variable dysphagia MASA	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparative analysis of distribution on B1 and B3. Confirmation of the hypothesis of advantages of Group 2 in relation to Group 1 Study of the hypothesis of advantages of Group 2.1 in relation to group 2.2
18	Categorical variable aspiration MASA	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparative analysis of distribution on B1 and B3. Confirmation of the hypothesis of advantages of Group 2 in relation to Group 1 Study of the hypothesis of advantages of Group 2.1 in relation to group 2.2
19	Bartell scale index	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparison of the change in the mean between B5 and B1 and between B3 and B1. Confirmation of the hypothesis of the advantages of Group 2 in relation to Group 1 Study of the hypothesis of the advantages of Group 2.1 in relation to Group 2.2
20	Categorical variable of dependence by Bartell scale	Entire population Group 1 Group 2 Group 2.1 Group 2.2	Comparative analysis of distribution on B1, B3 and B5. Confirmation of the hypothesis of advantages of Group 2 in relation to Group 1 Study of the hypothesis of advantages of Group 2.1 in relation to group 2.2

Results are shown below.

11. Naming of groups and subgroups in the Report

Further, for the unification of the names of the study groups and subgroups used, the following is accepted:

For study groups:

Study group – a group of patients receiving nutritional support with Nutricia products. In the text and tables, it is designated as "Study"

Control group – a group of patients receiving a hospital or home diet. In the text and tables, it is designated as "Control".

For subgroups of the study group:

Subgroup 1 – a subgroup of patients of the study group who, after discharge from the hospital, continued to receive nutritional support with Nutricia products at home. In the text and tables, it is designated as "Subgroup 1 (full)" or "Study Subgroup 1 (full)" or SUBGR1

Subgroup 2 – a subgroup of patients of the study group who, after discharge from the hospital, stopped using nutritional support with Nutricia products at home (partial). In the text and tables, it is designated as "Subgroup 2 (part)" or "Study Subgroup 2 (part)" or SUBGR2.

Where applicable, the word "groups" refers to the totality of the Study Group and Control Group, and the word "subgroups" refers to the totality of both subgroups of the Study Group.

12. Demography and Disposition

Sex, Age, Height (V1)

Table 2 Age of patients (years)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	65,92	65,53	66,12	65,78	66,50
SD	6,19	6,35	6,15	6,41	5,93
Median	67,00	66,00	67,00	67,00	68,00
Q25	64,00	63,25	64,00	64,00	64,50
Q75	70,00	69,75	70,25	69,25	71,00
Min	49	49	49	49	52
Max	75	75	75	74	75

Table 3 Sex of patients

	All patients		Control Group		Study Group					
					All Group		Subgroup 1 (full)		Subgroup 2 (part)	
	N	%	N	%	N	%	N	%	N	%
Male	51	56,7%	19	63,3%	32	53,3%	16	50,0%	16	57,1%
Female	39	43,3%	11	36,7%	28	46,7%	16	50,0%	12	42,9%
ВСЕГО	90	100%	30	100%	60	100%	32	100%	28	100%

Table 4 Height of patients (cm)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	169,80	169,43	169,98	168,53	171,64
SD	6,49	7,11	6,22	5,05	7,06
Median	170,00	171,00	169,00	167,50	172,00
Q25	165,00	165,00	165,00	165,00	167,75
Q75	175,00	175,00	175,00	172,25	176,25
Min	150	150	156	160	156
Max	189	180	189	178	189

Disposition (at V1)

Table 5 Time to hospitalization since stroke (hours)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	13,19	18,93	10,32	8,78	12,07

SD	14,78	19,74	10,62	6,17	14,03
Median	9,00	12,00	8,00	8,00	8,00
Q25	6,00	9,00	3,75	4,50	3,75
Q75	13,00	22,50	12,00	12,00	10,50
Min	1	1	1	1	1
Max	96	96	53	29	53

Table 6 Duration of hospitalization (days)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	26,82	26,77	26,85	27,72	25,86
SD	5,25	5,32	5,26	3,68	6,55
Median	29,00	29,50	29,00	29,00	29,00
Q25	24,25	24,25	24,50	27,75	20,00
Q75	30,00	30,00	30,00	30,00	30,25
Min	8	8	10	19	10
Max	34	32	34	33	34

Table 7 Glasgow scale

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	14,93	15,00	14,90	14,94	14,86
SD	0,29	0,00	0,35	0,25	0,45
Median	15,00	15,00	15,00	15,00	15,00
Q25	15,00	15,00	15,00	15,00	15,00
Q75	15,00	15,00	15,00	15,00	15,00
Min	13	15	13	14	13
Max	15	15	15	15	15

Table 8 NRS 2002

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	3,73	3,70	3,75	3,77	3,71
SD	0,79	0,88	0,76	0,76	0,76
Median	4,00	3,50	4,00	4,00	4,00
Q25	3,00	3,00	3,00	3,00	3,00
Q75	4,00	4,00	4,00	4,00	4,00
Min	2	2	2	2	2
Max	5	5	5	5	5

Table 9 Level of dysphagia (V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	2,11	2,10	2,12	2,00	2,25
SD	1,03	1,09	1,01	0,98	1,04
Median	2,00	2,00	2,00	2,00	2,00
Q25	1,00	1,00	1,00	1,00	1,00
Q75	3,00	3,00	3,00	3,00	3,00
Min	1	1	1	1	1
Max	4	4	4	4	4

Statistical comparison between groups and subgroups for all indicators indicates statistical homogeneity of groups and subgroups.

13. Descriptive statistics

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
Weight calculated_V1	Count	87	29	58	32	26
	Mean	74,527	70,232	76,674	74,893	78,865
	SD	12,7098	14,1087	11,4836	11,8902	10,7849
	95% LCL Mean	71,818	64,866	73,654	70,607	74,509
	95% UCL Mean	77,235	75,599	79,693	79,18	83,221
	Median	74,18	71,72	76,86	75,48	79,41
	IQR	18,56	21,9	17,42	16,86	16,99
	25th Pctile	66,14	57,84	68,5	67,61	70,78
	75th Pctile	84,7	79,74	85,92	84,47	87,77
	Min	42,61	42,61	54,05	54,05	55,04
	Max	100,1	100,1	98,16	98,16	95,96
Weight calculated_V3	Count	87	29	58	32	26
	Mean	73,538	68,129	76,243	73,996	79,008
	SD	13,3135	14,4514	11,9378	11,7958	11,7462
	95% LCL Mean	70,701	62,632	73,104	69,743	74,264
	95% UCL Mean	76,376	73,626	79,382	78,249	83,753
	Median	73	68,81	76,65	74,15	78,2
	IQR	20,42	23,78	18,95	18,17	17,67
	25th Pctile	63,91	55,5	66,92	65,9	70,87
	75th Pctile	84,32	79,28	85,87	84,07	88,55
	Min	41,27	41,27	54,26	55,47	54,26
	Max	99,23	96,57	99,23	98,56	99,23
Weight calculated_V5	Count	87	29	58	32	26
	Mean	73,425	68,095	76,089	74,549	77,986
	SD	12,8539	13,6411	11,6703	12,1475	10,9896
	95% LCL Mean	70,685	62,906	73,021	70,169	73,547
	95% UCL Mean	76,164	73,284	79,158	78,928	82,425
	Median	72,7	68,8	76,78	74,46	78,63
	IQR	19,87	23,83	19,3	19,06	16,94
	25th Pctile	64,03	55,29	67,37	66,92	70,24
	75th Pctile	83,9	79,12	86,67	85,98	87,18
	Min	45,26	45,26	54,26	54,83	54,26
	Max	100,52	94,85	100,52	100,52	97,26
Weight calculated_V5-V1	Count	87	29	58	32	26
	Mean	-1,102	-2,138	-0,584	-0,345	-0,879
	SD	2,914	2,6931	2,9036	2,5165	3,3474
	95% LCL Mean	-1,723	-3,162	-1,348	-1,252	-2,231
	95% UCL Mean	-0,481	-1,113	0,179	0,563	0,473

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Median	-1,18	-2,32	-1,09	-1,02	-1,18
	IQR	3,53	3,82	3,41	3,63	3,58
	25th Pctile	-2,75	-4,21	-2,35	-2,26	-2,67
	75th Pctile	0,79	-0,39	1,06	1,37	0,92
	Min	-7,11	-7,06	-7,11	-4,64	-7,11
	Max	9,03	3,92	9,03	5,34	9,03
Weight measured_V1	Count	85	29	56	30	26
	Mean	75,588	73,138	76,857	75,6	78,308
	SD	11,1796	12,0674	10,5803	10,0536	11,1777
	95% LCL Mean	73,177	68,548	74,024	71,846	73,793
	95% UCL Mean	78	77,728	79,691	79,354	82,822
	Median	75	69	76	76	79
	IQR	18	15	18,75	15,5	22,25
	25th Pctile	67	65,5	67	67	66,75
	75th Pctile	85	80,5	85,75	82,5	89
	Min	50	50	58	59	58
	Max	105	105	105	105	98
Weight measured_V3	Count	84	28	56	30	26
	Mean	75,048	72,286	76,429	74,567	78,577
	SD	11,042	11,5433	10,6188	9,6264	11,4723
	95% LCL Mean	72,651	67,81	73,585	70,972	73,943
	95% UCL Mean	77,444	76,762	79,272	78,161	83,211
	Median	74	67	76	74,5	79
	IQR	17,75	14	17,75	16	21,5
	25th Pctile	66	64	67	67	66,75
	75th Pctile	83,75	78	84,75	83	88,25
	Min	57	57	58	58	60
	Max	105	105	98	96	98
Weight measured_V5	Count	85	29	56	30	26
	Mean	74,729	71,241	76,536	75,1	78,192
	SD	10,8281	11,3378	10,1926	9,4005	10,9873
	95% LCL Mean	72,394	66,929	73,806	71,59	73,754
	95% UCL Mean	77,065	75,554	79,265	78,61	82,63
	Median	73	67	76	76	79
	IQR	18	14,5	18,25	15,5	21,5
	25th Pctile	66	63,5	67,25	67,75	66,75
	75th Pctile	84	78	85,5	83,25	88,25
	Min	55	55	59	59	59
	Max	105	105	98	98	98

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
Weight measured_V5-V1	Count	85	29	56	30	26
	Mean	-0,859	-1,897	-0,321	-0,5	-0,115
	SD	2,2155	2,4105	1,9175	1,8892	1,9663
	95% LCL Mean	-1,337	-2,813	-0,835	-1,205	-0,91
	95% UCL Mean	-0,381	-0,98	0,192	0,205	0,679
	Median	-1	-2	0	0	0
	IQR	2	4	2	1,5	2,25
	25th Pctile	-2	-4	-1	-1,25	-1,25
	75th Pctile	0	0	1	0,25	1
	Min	-7	-6	-7	-7	-4
	Max	6	5	6	3	6
SHRM_V1	Count	90	30	60	32	28
	Mean	4,256	4,267	4,25	4,219	4,286
	SD	0,5313	0,5208	0,5407	0,5527	0,5345
	95% LCL Mean	4,144	4,072	4,11	4,019	4,078
	95% UCL Mean	4,367	4,461	4,39	4,418	4,493
	Median	4	4	4	4	4
	IQR	1	1	1	1	1
	25th Pctile	4	4	4	4	4
	75th Pctile	5	5	5	5	5
	Min	3	3	3	3	3
	Max	5	5	5	5	5
SHRM_V2	Count	90	30	60	32	28
	Mean	3,433	3,4	3,45	3,688	3,179
	SD	0,8353	0,8944	0,8115	0,6445	0,9049
	95% LCL Mean	3,258	3,066	3,24	3,455	2,828
	95% UCL Mean	3,608	3,734	3,66	3,92	3,529
	Median	3,5	3,5	3,5	4	3
	IQR	1	1	1	1	1
	25th Pctile	3	3	3	3	3
	75th Pctile	4	4	4	4	4
	Min	0	0	0	3	0
	Max	5	5	5	5	4
SHRM_V3	Count	90	30	60	32	28
	Mean	2,789	2,8	2,783	2,875	2,679
	SD	0,8413	0,8469	0,8456	0,9419	0,7228
	95% LCL Mean	2,613	2,484	2,565	2,535	2,398
	95% UCL Mean	2,965	3,116	3,002	3,215	2,959
	Median	3	3	3	3	3
	IQR	1	1	1	1	1

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	25th Pctile	2	2	2	2	2
	75th Pctile	3	3	3	3	3
	Min	1	1	1	1	1
	Max	5	4	5	5	4
SHRM_V5	Count	90	30	60	32	28
	Mean	1,956	2,067	1,9	1,781	2,036
	SD	1,0591	0,8683	1,1454	1,2632	0,9993
	95% LCL Mean	1,734	1,742	1,604	1,326	1,648
	95% UCL Mean	2,177	2,391	2,196	2,237	2,423
	Median	2	2	2	1,5	2
	IQR	2	1,25	2	2	2
	25th Pctile	1	1,75	1	1	1
	75th Pctile	3	3	3	3	3
	Min	0	0	0	0	0
	Max	4	4	4	4	4
SHRM_V5-V1	Count	90	30	60	32	28
	Mean	-2,3	-2,2	-2,35	-2,438	-2,25
	SD	1,2035	0,9613	1,3126	1,4354	1,1746
	95% LCL Mean	-2,552	-2,559	-2,689	-2,955	-2,705
	95% UCL Mean	-2,048	-1,841	-2,011	-1,92	-1,795
	Median	-2	-2	-2	-3	-2
	IQR	2	2	2	3	2
	25th Pctile	-3	-3	-3	-4	-3
	75th Pctile	-1	-1	-1	-1	-1
	Min	-5	-4	-5	-5	-5
	Max	1	-1	1	1	-1
NRS2002	Count	89	30	59	31	28
	Mean	3,73	3,7	3,746	3,774	3,714
	SD	0,7944	0,8769	0,7564	0,762	0,7629
	95% LCL Mean	3,563	3,373	3,549	3,495	3,418
	95% UCL Mean	3,898	4,027	3,943	4,054	4,01
	Median	4	3,5	4	4	4
	IQR	1	1,25	1	1	1
	25th Pctile	3	3	3	3	3
	75th Pctile	4	4,25	4	4	4
	Min	2	2	2	2	2
	Max	5	5	5	5	5
Level of dysphagia_V1	Count	90	30	60	32	28
	Mean	2,111	2,1	2,117	2	2,25

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	SD	1,0326	1,0939	1,01	0,9837	1,0408
	95% LCL Mean	1,895	1,692	1,856	1,645	1,846
	95% UCL Mean	2,327	2,508	2,378	2,355	2,654
	Median	2	2	2	2	2
	IQR	2	2	2	2	2
	25th Pctile	1	1	1	1	1
	75th Pctile	3	3	3	3	3
	Min	1	1	1	1	1
	Max	4	4	4	4	4
EAT-10_V1	Count	90	30	60	32	28
	Mean	16,244	16,367	16,183	16,156	16,214
	SD	9,3452	9,7961	9,1956	9,4292	9,0936
	95% LCL Mean	14,287	12,709	13,808	12,757	12,688
	95% UCL Mean	18,202	20,025	18,559	19,556	19,74
	Median	16	17	16	15,5	17,5
	IQR	17,25	18,25	16,5	17,5	15,25
	25th Pctile	6	6	6,5	6,5	6,5
	75th Pctile	23,25	24,25	23	24	21,75
	Min	3	3	3	4	3
	Max	35	34	35	35	32
EAT-10_V2	Count	89	29	60	32	28
	Mean	13,169	13,931	12,8	12,563	13,071
	SD	8,39	8,1237	8,5585	8,736	8,5024
	95% LCL Mean	11,401	10,841	10,589	9,413	9,775
	95% UCL Mean	14,936	17,021	15,011	15,712	16,368
	Median	13	13	12	12	13,5
	IQR	14	17	12,25	14,25	10,5
	25th Pctile	5	4,5	5,25	4,5	5,5
	75th Pctile	19	21,5	17,5	18,75	16
	Min	0	2	0	1	0
	Max	35	26	35	35	31
EAT-10_V3	Count	90	30	60	32	28
	Mean	9,578	10,8	8,967	8,688	9,286
	SD	6,4703	6,7589	6,2895	6,567	6,0605
	95% LCL Mean	8,223	8,276	7,342	6,32	6,936
	95% UCL Mean	10,933	13,324	10,591	11,055	11,636
	Median	9,5	11	8,5	7,5	9,5
	IQR	11,25	11	10,75	11,75	9,75
	25th Pctile	3,75	5,25	3,25	2,25	4,25
	75th Pctile	15	16,25	14	14	14
	Min	0	0	0	0	0

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Max	26	21	26	26	24
EAT-10_V4	Count	90	30	60	32	28
	Mean	7,467	8,8	6,8	6,469	7,179
	SD	5,7693	5,9271	5,6202	6,0374	5,1858
	95% LCL Mean	6,258	6,587	5,348	4,292	5,168
	95% UCL Mean	8,675	11,013	8,252	8,645	9,189
	Median	7	10,5	6	5,5	7
	IQR	11	11,5	9,75	9,75	8,5
	25th Pctile	1	1,75	1	1	2,25
	75th Pctile	12	13,25	10,75	10,75	10,75
	Min	0	0	0	0	0
	Max	20	18	20	20	18
EAT-10_V5	Count	90	30	60	32	28
	Mean	4,167	6,633	2,933	2,625	3,286
	SD	4,2486	5,7624	2,5033	2,1213	2,8785
	95% LCL Mean	3,277	4,482	2,287	1,86	2,17
	95% UCL Mean	5,057	8,785	3,58	3,39	4,402
	Median	3	8	3	3	3
	IQR	7	10,5	4,75	4,5	4,75
	25th Pctile	0	0	0,25	0,25	0,25
	75th Pctile	7	10,5	5	4,75	5
	Min	0	0	0	0	0
	Max	18	18	9	7	9
EAT-10_V3-V1	Count	90	30	60	32	28
	Mean	-6,667	-5,567	-7,217	-7,469	-6,929
	SD	5,4834	5,5316	5,4215	4,5008	6,3882
	95% LCL Mean	-7,815	-7,632	-8,617	-9,091	-9,406
	95% UCL Mean	-5,518	-3,501	-5,816	-5,846	-4,451
	Median	-6	-4	-7	-7,5	-7
	IQR	7	9,25	6	5,75	7,5
	25th Pctile	-10	-10,25	-10	-10	-10,5
	75th Pctile	-3	-1	-4	-4,25	-3
	Min	-23	-17	-23	-17	-23
	Max	7	4	7	0	7
EAT-10_V5-V1	Count	90	30	60	32	28
	Mean	-12,078	-9,733	-13,25	-13,531	-12,929
	SD	7,6544	6,6433	7,9054	8,016	7,9112
	95% LCL Mean	-13,681	-12,214	-15,292	-16,421	-15,996
	95% UCL Mean	-10,475	-7,253	-11,208	-10,641	-9,861
	Median	-11	-7,5	-13	-12	-13,5

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	IQR	13	11,25	13,75	13,75	13
	25th Pctile	-18	-16,25	-19	-20	-18
	75th Pctile	-5	-5	-5,25	-6,25	-5
	Min	-32	-25	-32	-29	-32
	Max	0	0	-2	-2	-3
Rivermead_V1	Count	90	30	60	32	28
	Mean	2,767	2,833	2,733	2,625	2,857
	SD	1,9259	1,9134	1,9473	1,4973	2,3838
	95% LCL Mean	2,363	2,119	2,23	2,085	1,933
	95% UCL Mean	3,17	3,548	3,236	3,165	3,781
	Median	3	2,5	3	3	3
	IQR	2	3	1	1,75	1
	25th Pctile	1	1	2	1,25	2
	75th Pctile	3	4	3	3	3
	Min	1	1	1	1	1
	Max	14	8	14	7	14
Rivermead_V2	Count	90	30	60	32	28
	Mean	5,3	4,967	5,467	5,313	5,643
	SD	2,5416	2,4703	2,5807	2,3751	2,8312
	95% LCL Mean	4,768	4,044	4,8	4,456	4,545
	95% UCL Mean	5,832	5,889	6,133	6,169	6,741
	Median	6	5	6	6	6,5
	IQR	4	4	4	4	4
	25th Pctile	3	3	3	3	3
	75th Pctile	7	7	7	7	7
	Min	0	0	0	1	0
	Max	14	12	14	10	14
Rivermead_V3	Count	90	30	60	32	28
	Mean	8,089	7,967	8,15	8,281	8
	SD	3,0709	3,1675	3,0467	3,3335	2,7352
	95% LCL Mean	7,446	6,784	7,363	7,079	6,939
	95% UCL Mean	8,732	9,149	8,937	9,483	9,061
	Median	8	8	8	8,5	7
	IQR	4	4,25	4	5,5	3
	25th Pctile	6	5,75	6	6	7
	75th Pctile	10	10	10	11,5	10
	Min	2	3	2	2	3
	Max	14	14	14	14	14
Rivermead_V4	Count	90	30	60	32	28

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Mean	10	9,733	10,133	10,313	9,929
	SD	2,8952	3,005	2,8551	2,729	3,0298
	95% LCL Mean	9,394	8,611	9,396	9,329	8,754
	95% UCL Mean	10,606	10,855	10,871	11,296	11,103
	Median	10	10	10	10	10
	IQR	5	5,25	4	4,5	4,75
	25th Pctile	7	7	8	7,5	8
	75th Pctile	12	12,25	12	12	12,75
	Min	3	3	3	4	3
	Max	14	14	14	14	14
Rivermead_V5	Count	90	30	60	32	28
	Mean	10,933	10,033	11,383	11,906	10,786
	SD	2,6513	2,9998	2,3585	1,9734	2,6438
	95% LCL Mean	10,378	8,913	10,774	11,195	9,761
	95% UCL Mean	11,489	11,153	11,993	12,618	11,811
	Median	12	10,5	12	12	12
	IQR	2	3,25	2,75	4	2,75
	25th Pctile	10	8,75	10	10	9,25
	75th Pctile	12	12	12,75	14	12
	Min	2	2	3	7	3
	Max	15	14	15	15	15
Rivermead_V5-V1	Count	90	30	60	32	28
	Mean	8,167	7,2	8,65	9,281	7,929
	SD	2,7814	2,8089	2,6606	2,0672	3,0904
	95% LCL Mean	7,584	6,151	7,963	8,536	6,73
	95% UCL Mean	8,749	8,249	9,337	10,027	9,127
	Median	9	7,5	9	9	9
	IQR	3	3	3	3	4
	25th Pctile	7	6	7	8	6
	75th Pctile	10	9	10	11	10
	Min	-1	-1	0	5	0
	Max	14	11	14	13	14
Total protein_V1	Count	90	30	60	32	28
	Mean	64,425	65,519	63,878	63,654	64,134
	SD	6,3183	6,9058	5,9888	6,3758	5,619
	95% LCL Mean	63,101	62,94	62,331	61,355	61,955
	95% UCL Mean	65,748	68,097	65,425	65,953	66,312
	Median	63,94	64,78	63,78	63,89	63,68
	IQR	7,21	6,27	7,92	8,34	7,58
	25th Pctile	60,07	60,78	59,96	59,66	60,3
	75th Pctile	67,28	67,05	67,88	68	67,88

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Min	51,52	55,45	51,52	51,52	54,28
	Max	82,8	82,8	77	75,4	77
Total protein_V2	Count	90	30	60	32	28
	Mean	63,117	61,574	63,889	63,97	63,796
	SD	10,9617	13,4129	9,5401	4,5397	13,2364
	95% LCL Mean	60,821	56,566	61,424	62,333	58,664
	95% UCL Mean	65,413	66,583	66,353	65,607	68,929
	Median	64,77	62,93	65,88	64,63	66,46
	IQR	6,76	8,53	6,37	6,33	5,63
	25th Pctile	60,56	58,59	61,36	60,92	63,2
	75th Pctile	67,33	67,13	67,74	67,25	68,83
	Min	0	0	0	54,68	0
	Max	81,2	81,2	74,25	73	74,25
Total protein_V3	Count	90	30	60	32	28
	Mean	65,358	63,244	66,415	65,687	67,247
	SD	5,6829	6,047	5,2284	5,8163	4,4212
	95% LCL Mean	64,168	60,986	65,064	63,59	65,532
	95% UCL Mean	66,548	65,502	67,765	67,784	68,961
	Median	65,65	63,3	66,9	65,92	67,18
	IQR	7,3	6,94	6,43	6,16	5,71
	25th Pctile	61,7	59,32	63,52	62,43	64,51
	75th Pctile	69	66,25	69,95	68,59	70,23
	Min	46	51,05	46	46	55,45
	Max	80	78,1	80	80	75,15
Total protein_V5	Count	90	30	60	32	28
	Mean	66,577	64,202	67,765	67,884	67,629
	SD	4,9096	6,2633	3,5743	3,3923	3,83
	95% LCL Mean	65,549	61,863	66,842	66,661	66,144
	95% UCL Mean	67,606	66,541	68,688	69,107	69,114
	Median	66,65	62,9	67,35	67,35	67,4
	IQR	6,31	7,26	5,08	5,4	4,55
	25th Pctile	63,53	59,99	65,7	65,7	65,53
	75th Pctile	69,84	67,25	70,78	71,1	70,08
	Min	53,95	53,95	56,7	61,95	56,7
	Max	80	80	74,6	74	74,6
Total protein_V5-V1	Count	90	30	60	32	28
	Mean	2,153	-1,317	3,887	4,23	3,496
	SD	5,7843	4,3171	5,6683	6,5145	4,6027
	95% LCL Mean	0,941	-2,929	2,423	1,881	1,711
	95% UCL Mean	3,364	0,295	5,351	6,578	5,28

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Median	2,11	-1,6	3,96	4,79	2,96
	IQR	6,97	5,21	6,46	6,98	6,26
	25th Pctile	-1,54	-3,84	1,21	1,67	0,71
	75th Pctile	5,43	1,38	7,67	8,65	6,98
	Min	-12,25	-12,25	-12	-12	-7
	Max	14,97	10,4	14,97	13,79	14,97
Albumin_V1	Count	90	30	60	32	28
	Mean	38,399	38,852	38,173	37,929	38,452
	SD	4,3196	5,0537	3,929	4,173	3,6863
	95% LCL Mean	37,495	36,965	37,158	36,425	37,022
	95% UCL Mean	39,304	40,739	39,188	39,434	39,881
	Median	37,65	39,23	37,5	37,33	37,81
	IQR	6,47	7,18	5,24	6,19	5,12
	25th Pctile	35,53	35,17	35,76	35,21	35,88
	75th Pctile	42	42,35	41	41,39	41
	Min	26	26	29,5	29,5	31,2
	Max	48,24	48,24	46,3	46,3	46
Albumin_V2	Count	90	30	60	32	28
	Mean	37,38	36,003	38,069	38,174	37,949
	SD	6,8736	8,1453	6,1001	3,6829	8,1063
	95% LCL Mean	35,941	32,962	36,493	36,846	34,806
	95% UCL Mean	38,82	39,044	39,645	39,502	41,093
	Median	38,1	36,75	38,28	38,1	38,6
	IQR	4,6	6,1	3,91	4,74	4,49
	25th Pctile	35,49	33,53	36,63	35,5	36,76
	75th Pctile	40,09	39,63	40,54	40,24	41,26
	Min	0	0	0	31,17	0
	Max	49,25	46,5	49,25	45,8	49,25
Albumin_V3	Count	90	30	60	32	28
	Mean	39,021	37,301	39,88	39,136	40,73
	SD	4,3037	4,9602	3,6867	3,7112	3,533
	95% LCL Mean	38,119	35,449	38,928	37,798	39,36
	95% UCL Mean	39,922	39,153	40,833	40,474	42,1
	Median	39,25	36,6	39,53	39,5	39,88
	IQR	5,71	7,98	4,18	3,77	5,73
	25th Pctile	36,22	33,43	37,8	37,38	37,95
	75th Pctile	41,93	41,4	41,98	41,14	43,68
	Min	28	28,9	28	28	35,9
	Max	48,17	47	48,17	46,7	48,17
Albumin_V5	Count	90	30	60	32	28

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Mean	39,436	37,497	40,406	40,552	40,239
	SD	3,3702	3,9621	2,5593	2,5198	2,6399
	95% LCL Mean	38,73	36,018	39,745	39,644	39,215
	95% UCL Mean	40,142	38,977	41,067	41,461	41,262
	Median	39,8	37,2	40,6	40,95	40,3
	IQR	5,06	7,03	2,93	2,69	3,2
	25th Pctile	36,98	34,6	39,26	39,5	38,95
	75th Pctile	42,04	41,63	42,19	42,19	42,15
	Min	30,1	30,1	35	35	35,12
	Max	45,25	44	45,25	45	45,25
Albumin_V5-V1	Count	90	30	60	32	28
	Mean	1,037	-1,355	2,233	2,623	1,787
	SD	3,9045	3,6878	3,4569	4,001	2,7105
	95% LCL Mean	0,219	-2,732	1,34	1,18	0,736
	95% UCL Mean	1,855	0,022	3,126	4,065	2,838
	Median	1,53	-0,26	2,71	3,66	1,86
	IQR	4,7	5,12	3,85	4,51	1,94
	25th Pctile	-1,03	-4,4	0,78	0,91	0,78
	75th Pctile	3,68	0,72	4,63	5,41	2,72
	Min	-9	-8,4	-9	-9	-6
	Max	9,24	7,25	9,24	9,24	8
Lymphocytes_V1	Count	90	30	60	32	28
	Mean	1,609	1,597	1,614	1,563	1,672
	SD	0,5917	0,6391	0,572	0,5781	0,5698
	95% LCL Mean	1,485	1,359	1,466	1,355	1,451
	95% UCL Mean	1,732	1,836	1,762	1,772	1,893
	Median	1,58	1,55	1,58	1,4	1,71
	IQR	0,74	0,9	0,63	0,68	0,54
	25th Pctile	1,16	1,11	1,2	1,18	1,3
	75th Pctile	1,9	2,01	1,83	1,87	1,83
	Min	0,32	0,32	0,5	0,5	0,52
	Max	3,2	3,1	3,2	3,1	3,2
Lymphocytes_V2	Count	90	30	60	32	28
	Mean	1,702	1,583	1,762	1,748	1,777
	SD	0,6523	0,6696	0,6409	0,6621	0,6275
	95% LCL Mean	1,565	1,333	1,596	1,509	1,534
	95% UCL Mean	1,839	1,833	1,927	1,987	2,02
	Median	1,77	1,69	1,78	1,72	1,92
	IQR	0,99	0,93	0,87	0,92	0,95
	25th Pctile	1,12	1,05	1,26	1,16	1,29
	75th Pctile	2,1	1,98	2,13	2,08	2,24

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Min	0	0	0	0,93	0
	Max	3,79	2,95	3,79	3,79	2,79
Lymphocytes_V3	Count	90	30	60	32	28
	Mean	1,722	1,41	1,879	1,862	1,898
	SD	0,5352	0,5126	0,4781	0,471	0,4941
	95% LCL Mean	1,61	1,219	1,755	1,692	1,706
	95% UCL Mean	1,834	1,601	2,002	2,031	2,089
	Median	1,75	1,28	1,88	1,84	1,93
	IQR	0,7	0,66	0,47	0,54	0,44
	25th Pctile	1,31	1,06	1,65	1,58	1,69
	75th Pctile	2,01	1,72	2,12	2,12	2,12
	Min	0,76	0,76	0,92	1,08	0,92
	Max	3,1	2,85	3,1	3,1	2,93
Lymphocytes_V5	Count	90	30	60	32	28
	Mean	1,991	1,739	2,117	2,223	1,995
	SD	0,6905	0,7186	0,6457	0,7459	0,4933
	95% LCL Mean	1,846	1,471	1,95	1,955	1,803
	95% UCL Mean	2,135	2,007	2,283	2,492	2,186
	Median	1,98	1,55	2	2,01	1,99
	IQR	0,63	0,83	0,48	0,4	0,62
	25th Pctile	1,57	1,18	1,81	1,9	1,66
	75th Pctile	2,2	2,01	2,29	2,29	2,28
	Min	0,97	0,97	0,99	0,99	0,99
	Max	5,08	3,97	5,08	5,08	3,05
Lymphocytes_V5-V1	Count	90	30	60	32	28
	Mean	0,382	0,142	0,503	0,66	0,323
	SD	0,7157	0,6665	0,7143	0,7811	0,5927
	95% LCL Mean	0,232	-0,107	0,318	0,378	0,093
	95% UCL Mean	0,532	0,391	0,687	0,942	0,552
	Median	0,39	0,21	0,45	0,53	0,29
	IQR	0,86	0,87	0,73	0,61	0,94
	25th Pctile	-0,07	-0,24	0,12	0,28	-0,14
	75th Pctile	0,8	0,62	0,86	0,89	0,8
	Min	-1,56	-1,56	-0,88	-0,6	-0,88
	Max	3,61	1,47	3,61	3,61	1,35
PNI_V1	Count	90	30	60	32	28
	Mean	46,442	46,839	46,244	45,747	46,813
	SD	6,227	7,4728	5,5608	5,8151	5,3028
	95% LCL Mean	45,138	44,048	44,807	43,65	44,756
	95% UCL Mean	47,746	49,629	47,681	47,843	48,869

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Median	45,25	45,4	45,18	44,45	45,77
	IQR	9,03	10,99	6,45	5,48	8,37
	25th Pctile	42,04	40,97	42,53	42,53	42,38
	75th Pctile	51,08	51,95	48,98	48,01	50,75
	Min	30,9	30,9	34,41	34,41	39,88
	Max	63,7	63,7	59	58,5	59
PNI_V2	Count	90	30	60	32	28
	Mean	45,891	43,92	46,877	46,913	46,835
	SD	9,0318	10,5902	8,0599	5,8442	10,1358
	95% LCL Mean	43,999	39,965	44,795	44,806	42,905
	95% UCL Mean	47,783	47,874	48,959	49,02	50,765
	Median	46,83	45,19	47,18	46,08	48,6
	IQR	7,85	11,56	7,25	7,21	6,46
	25th Pctile	42,67	39,04	43,24	42,86	45,21
	75th Pctile	50,51	50,6	50,49	50,07	51,68
	Min	0	0	0	37,2	0
	Max	60,25	56,45	60,25	60,25	56,4
PNI_V3	Count	90	30	60	32	28
	Mean	47,632	44,351	49,273	48,444	50,22
	SD	5,9179	6,6839	4,7603	4,9722	4,4033
	95% LCL Mean	46,393	41,856	48,043	46,651	48,512
	95% UCL Mean	48,872	46,847	50,502	50,237	51,927
	Median	48,28	42,83	49,29	48,43	50,09
	IQR	8,14	11,84	6,88	6,57	6,48
	25th Pctile	43,3	38,25	46,21	44,61	47,11
	75th Pctile	51,43	50,09	53,09	51,17	53,59
	Min	34,45	34,45	37	37	40,5
	Max	58,95	57	58,95	58,65	58,95
PNI_V5	Count	90	30	60	32	28
	Mean	49,39	46,192	50,989	51,669	50,212
	SD	5,7958	6,6734	4,5806	4,6338	4,4746
	95% LCL Mean	48,176	43,7	49,806	49,999	48,477
	95% UCL Mean	50,604	48,684	52,172	53,34	51,947
	Median	49,56	45,05	50,9	51,01	50,28
	IQR	7,87	7,67	4,9	4,55	6,86
	25th Pctile	45,15	41,64	48,33	48,56	47,16
	75th Pctile	53,01	49,3	53,23	53,11	54,02
	Min	35	35	41,02	45,15	41,02
	Max	66,8	63,85	66,8	66,8	56,9
PNI_V3-V1	Count	90	30	60	32	28

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Mean	1,19	-2,487	3,029	2,698	3,407
	SD	5,6245	4,7285	5,1398	5,8419	4,2736
	95% LCL Mean	0,012	-4,253	1,701	0,591	1,75
	95% UCL Mean	2,368	-0,722	4,356	4,804	5,064
	Median	1,53	-1,47	3,57	2,75	4,35
	IQR	6,45	5,87	6,19	5,76	6,67
	25th Pctile	-1,31	-5,54	0,51	0,93	0,12
	75th Pctile	5,14	0,33	6,69	6,69	6,78
	Min	-15,6	-13,2	-15,6	-15,6	-7,1
	Max	10,85	6,65	10,85	10,85	10,12
PNI_V5-V1	Count	90	30	60	32	28
	Mean	2,948	-0,646	4,745	5,923	3,399
	SD	5,726	5,5717	4,9341	5,343	4,1109
	95% LCL Mean	1,749	-2,727	3,471	3,996	1,805
	95% UCL Mean	4,147	1,434	6,02	7,849	4,993
	Median	3,84	0,16	4,65	6,59	4,33
	IQR	7,16	8,21	5,96	4,88	6,65
	25th Pctile	-0,4	-5,13	1,44	3,72	-0,26
	75th Pctile	6,76	3,09	7,4	8,6	6,39
	Min	-14,54	-14,54	-6,7	-6,7	-5,5
	Max	20,25	11,15	20,25	20,25	10,7
Creatinine_V1	Count	90	30	60	32	28
	Mean	84,473	81,584	85,918	86,369	85,402
	SD	20,8456	17,7923	22,2154	24,1961	20,1429
	95% LCL Mean	80,107	74,94	80,179	77,645	77,591
	95% UCL Mean	88,839	88,228	91,656	95,092	93,212
	Median	81,38	79,81	81,38	81,38	82,33
	IQR	29,45	23,99	30,25	34,72	26,99
	25th Pctile	70,75	68,36	71,45	68,78	72,01
	75th Pctile	100,2	92,34	101,7	103,5	99
	Min	43	55,55	43	43	52
	Max	132	116,48	132	132	130,77
Creatinine_V2	Count	90	30	60	32	28
	Mean	81,823	77,33	84,07	83,419	84,814
	SD	22,401	20,2494	23,2382	21,0125	25,9233
	95% LCL Mean	77,132	69,769	78,067	75,843	74,762
	95% UCL Mean	86,515	84,891	90,073	90,995	94,866
	Median	79,48	78,95	81,62	81,7	81,14
	IQR	30,33	19,46	34,36	35,74	32,85
	25th Pctile	69	67,79	69,16	66,23	72,86
	75th Pctile	99,33	87,25	103,53	101,97	105,7

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Min	0	0	0	51	0
	Max	130,42	110	130,42	120,12	130,42
Creatinine_V3	Count	90	30	60	32	28
	Mean	83,922	81,154	85,305	83,96	86,843
	SD	18,433	13,9503	20,2743	20,1659	20,657
	95% LCL Mean	80,061	75,945	80,068	76,689	78,833
	95% UCL Mean	87,782	86,363	90,543	91,23	94,853
	Median	81,52	81,06	81,52	82,49	80,63
	IQR	26,2	17,02	32,76	34,42	26,37
	25th Pctile	69,59	70,02	68,5	66,88	74,89
	75th Pctile	95,79	87,03	101,26	101,29	101,26
	Min	53	59	53	53	53
	Max	139	112,65	139	120,17	139
Creatinine_V5	Count	90	30	60	32	28
	Mean	84,281	82,402	85,221	82,482	88,35
	SD	17,6207	16,3443	18,2858	17,4962	18,9776
	95% LCL Mean	80,591	76,299	80,497	76,174	80,991
	95% UCL Mean	87,972	88,505	89,944	88,79	95,709
	Median	81,57	80,32	83,55	79,75	86,5
	IQR	30,48	23,11	32,7	31,83	27,84
	25th Pctile	69,17	72,04	68,37	67	74,79
	75th Pctile	99,65	95,15	101,06	98,83	102,63
	Min	48	48	52	52	61
	Max	128	120,15	128	118,34	128
Creatinine_V5-V1	Count	90	30	60	32	28
	Mean	-0,192	0,818	-0,697	-3,887	2,948
	SD	10,1694	8,0404	11,1106	12,2026	8,5413
	95% LCL Mean	-2,322	-2,184	-3,567	-8,286	-0,364
	95% UCL Mean	1,938	3,821	2,173	0,513	6,26
	Median	-0,2	-0,1	-0,2	-5,18	1,59
	IQR	11,98	11,65	12,31	13,1	12,28
	25th Pctile	-6,73	-5,01	-7,54	-9,59	-2,53
	75th Pctile	5,25	6,65	4,76	3,51	9,75
	Min	-40	-14,08	-40	-40	-14,98
	Max	22	22	20	20	19
Hand Grip strength_V1	Count	69	20	49	26	23
	Mean	20,319	20,3	20,327	21,154	19,391
	SD	10,5335	8,8917	11,2201	12,1283	10,2856
	95% LCL Mean	17,788	16,139	17,104	16,255	14,943

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	95% UCL Mean	22,849	24,461	23,549	26,053	23,839
	Median	18	20	17	17,5	16
	IQR	13	14,75	13	19	13
	25th Pctile	12	12,5	12	12,5	12
	75th Pctile	25	27,25	25	31,5	25
	Min	3	5	3	5	3
	Max	47	35	47	42	47
Hand grip strength_V3	Count	85	25	60	32	28
	Mean	22,541	21,96	22,783	23,25	22,25
	SD	10,9529	9,4051	11,6023	13,1517	9,7473
	95% LCL Mean	20,179	18,078	19,786	18,508	18,47
	95% UCL Mean	24,904	25,842	25,781	27,992	26,03
	Median	22	22	22	20	22,5
	IQR	16	16	16,5	21,25	13,25
	25th Pctile	13,5	14,5	13	13	14,25
	75th Pctile	29,5	30,5	29,5	34,25	27,5
	Min	3	10	3	3	7
	Max	46	42	46	46	45
Hand grip strength_V3-V1	Count	69	20	49	26	23
	Mean	2,449	0,2	3,367	3,654	3,043
	SD	5,2763	6,4612	4,466	3,5882	5,3554
	95% LCL Mean	1,182	-2,824	2,085	2,205	0,728
	95% UCL Mean	3,717	3,224	4,65	5,103	5,359
	Median	4	1	4	4,5	3
	IQR	7	7,75	4,5	4,5	6
	25th Pctile	-1	-3	1,5	1,5	1
	75th Pctile	6	4,75	6	6	7
	Min	-14	-14	-10	-3	-10
	Max	15	10	15	10	15
EQ5D3L TTO_V1	Count	90	30	60	32	28
	Mean	-0,008	0,006	-0,015	-0,079	0,057
	SD	0,4448	0,4367	0,4523	0,452	0,4497
	95% LCL Mean	-0,101	-0,157	-0,132	-0,242	-0,117
	95% UCL Mean	0,085	0,169	0,102	0,084	0,232
	Median	-0,05	-0,05	-0,05	-0,05	-0,05
	IQR	0,78	0,83	0,8	0,59	0,91
	25th Pctile	-0,5	-0,5	-0,5	-0,5	-0,32
	75th Pctile	0,28	0,33	0,3	0,09	0,58
	Min	-0,5	-0,5	-0,5	-0,5	-0,5
	Max	0,93	0,7	0,93	0,77	0,93

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
EQ5D3L TTO_V3	Count	90	30	60	32	28
	Mean	0,619	0,529	0,664	0,632	0,701
	SD	0,3611	0,4009	0,3339	0,3676	0,2931
	95% LCL Mean	0,544	0,38	0,578	0,5	0,587
	95% UCL Mean	0,695	0,679	0,75	0,765	0,814
	Median	0,77	0,75	0,77	0,77	0,77
	IQR	0,34	0,56	0,17	0,46	0,15
	25th Pctile	0,5	0,25	0,7	0,43	0,7
	75th Pctile	0,85	0,81	0,88	0,89	0,86
	Min	-0,5	-0,5	-0,19	-0,19	-0,05
	Max	1	1	1	1	1
EQ5D3L TTO_V5	Count	90	30	60	32	28
	Mean	0,79	0,661	0,855	0,875	0,833
	SD	0,226	0,3004	0,141	0,1051	0,1727
	95% LCL Mean	0,743	0,548	0,819	0,837	0,766
	95% UCL Mean	0,837	0,773	0,891	0,912	0,9
	Median	0,82	0,81	0,89	0,89	0,86
	IQR	0,16	0,29	0,18	0,15	0,16
	25th Pctile	0,77	0,56	0,78	0,81	0,77
	75th Pctile	0,93	0,85	0,96	0,96	0,93
	Min	-0,19	-0,19	0,12	0,64	0,12
	Max	1	0,93	1	1	1
EQ5D3L TTO_V5-V1	Count	90	30	60	32	28
	Mean	0,798	0,655	0,87	0,953	0,775
	SD	0,4714	0,4149	0,4847	0,4858	0,4741
	95% LCL Mean	0,7	0,5	0,745	0,778	0,591
	95% UCL Mean	0,897	0,81	0,995	1,129	0,959
	Median	0,85	0,74	0,96	1,04	0,91
	IQR	0,93	0,67	0,83	0,72	0,93
	25th Pctile	0,34	0,21	0,49	0,68	0,19
	75th Pctile	1,27	0,88	1,31	1,4	1,12
	Min	-0,07	0,04	-0,07	-0,07	0
	Max	1,5	1,4	1,5	1,5	1,5
EQ5D3L VAS_V1	Count	90	30	60	32	28
	Mean	33,333	33,833	33,083	29,844	36,786
	SD	13,5124	14,3649	13,1836	14,5627	10,4717
	95% LCL Mean	30,503	28,469	29,678	24,593	32,725
	95% UCL Mean	36,163	39,197	36,489	35,094	40,846
	Median	35	32,5	35	30	37,5
	IQR	16,25	21,25	15	20	17,5

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	25th Pctile	25	23,75	25	20	30
	75th Pctile	41,25	45	40	40	47,5
	Min	5	5	10	10	10
	Max	60	60	60	60	50
EQ5D3L VAS_V3	Count	90	30	60	32	28
	Mean	54,778	51	56,667	54,219	59,464
	SD	18,6317	20,5275	17,4828	19,3903	14,866
	95% LCL Mean	50,875	43,335	52,15	47,228	53,7
	95% UCL Mean	58,68	58,665	61,183	61,21	65,229
	Median	57,5	52,5	60	55	62,5
	IQR	30	31,25	25	35	23,75
	25th Pctile	40	33,75	45	35	46,25
	75th Pctile	70	65	70	70	70
	Min	20	20	20	20	30
	Max	100	100	90	90	80
EQ5D3L VAS_V5	Count	90	30	60	32	28
	Mean	67,111	58,167	71,583	72,031	71,071
	SD	16,7932	15,6736	15,6089	16,1075	15,2969
	95% LCL Mean	63,594	52,314	67,551	66,224	65,14
	95% UCL Mean	70,628	64,019	75,616	77,839	77,003
	Median	70	60	70	70	72,5
	IQR	30	20	18,75	15	20
	25th Pctile	50	50	61,25	65	60
	75th Pctile	80	70	80	80	80
	Min	30	30	30	30	45
	Max	100	85	100	100	95
EQ5D3L VAS_V5-V1	Count	90	30	60	32	28
	Mean	33,778	24,333	38,5	42,188	34,286
	SD	20,4899	18,4173	19,964	20,8271	18,3946
	95% LCL Mean	29,486	17,456	33,343	34,679	27,153
	95% UCL Mean	38,069	31,21	43,657	49,696	41,418
	Median	30	22,5	40	40	30
	IQR	30	30	25	28,75	23,75
	25th Pctile	20	10	30	30	21,25
	75th Pctile	50	40	55	58,75	45
	Min	-20	-15	-20	-20	0
	Max	75	55	75	75	70
MASA index_V1	Count	90	30	60	32	28
	Mean	154,1	156,367	152,967	154,969	150,679
	SD	21,1883	25,7969	18,6065	17,5287	19,8383

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	95% LCL Mean	149,662	146,734	148,16	148,649	142,986
	95% UCL Mean	158,538	165,999	157,773	161,289	158,371
	Median	161	167	158	161,5	156
	IQR	35,25	37	33,75	31	34,5
	25th Pctile	135,75	137,5	135	137,75	133,25
	75th Pctile	171	174,5	168,75	168,75	167,75
	Min	93	93	94	115	94
	Max	183	183	179	179	176
MASA index_V3	Count	90	30	60	32	28
	Mean	173,467	171,7	174,35	174,406	174,286
	SD	14,8386	18,3494	12,8166	12,5438	13,3524
	95% LCL Mean	170,359	164,848	171,039	169,884	169,108
	95% UCL Mean	176,575	178,552	177,661	178,929	179,463
	Median	176	177,5	175,5	175	176,5
	IQR	23	33,25	22,75	22,5	21,5
	25th Pctile	162	154,75	162,25	162,5	162,25
	75th Pctile	185	188	185	185	183,75
	Min	136	136	145	145	151
	Max	200	196	200	196	200
MASA index_V3-V1	Count	90	30	60	32	28
	Mean	19,367	15,333	21,383	19,438	23,607
	SD	13,2711	15,5349	11,6038	9,5679	13,398
	95% LCL Mean	16,587	9,533	18,386	15,988	18,412
	95% UCL Mean	22,146	21,134	24,381	22,887	28,802
	Median	20	15	21,5	21,5	21,5
	IQR	18	19	17	16,5	17
	25th Pctile	10	4,75	12	11,25	12,75
	75th Pctile	28	23,75	29	27,75	29,75
	Min	-24	-24	2	2	6
	Max	67	51	67	35	67
Bartell index_V1	Count	90	30	60	32	28
	Mean	22,944	25	21,917	22,031	21,786
	SD	19,9845	19,2533	20,4212	19,7916	21,4827
	95% LCL Mean	18,759	17,811	16,641	14,896	13,456
	95% UCL Mean	27,13	32,189	27,192	29,167	30,116
	Median	15	20	12,5	12,5	12,5
	IQR	30	32,5	28,75	27,5	30
	25th Pctile	10	10	6,25	10	5
	75th Pctile	40	42,5	35	37,5	35
	Min	0	0	0	0	0

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	Max	100	60	100	85	100
Bartell index_V2	Count	90	30	60	32	28
	Mean	45,611	40,833	48	46,875	49,286
	SD	27,3741	28,3477	26,7949	27,0528	26,9332
	95% LCL Mean	39,878	30,248	41,078	37,121	38,842
	95% UCL Mean	51,345	51,419	54,922	56,629	59,729
	Median	50	47,5	55	50	55
	IQR	51,25	50	50	53,75	51,25
	25th Pctile	15	10	20	20	17,5
	75th Pctile	66,25	60	70	73,75	68,75
	Min	0	0	5	5	5
	Max	100	100	100	95	100
Bartell index_V3	Count	90	30	60	32	28
	Mean	65,889	60	68,833	67,5	70,357
	SD	23,9684	25,5626	22,7806	25,4951	19,5755
	95% LCL Mean	60,869	50,455	62,948	58,308	62,767
	95% UCL Mean	70,909	69,545	74,718	76,692	77,948
	Median	70	70	70	70	72,5
	IQR	35	32,5	30	35	25
	25th Pctile	50	47,5	55	55	60
	75th Pctile	85	80	85	90	85
	Min	10	10	10	10	30
	Max	100	95	100	100	100
Bartell index_V5	Count	90	30	60	32	28
	Mean	83,611	75,667	87,583	87,969	87,143
	SD	16,5072	19,0613	13,5763	14,5834	12,5778
	95% LCL Mean	80,154	68,549	84,076	82,711	82,266
	95% UCL Mean	87,068	82,784	91,09	93,227	92,02
	Median	85	80	90	95	90
	IQR	17,5	21,25	20	20	18,75
	25th Pctile	78,75	68,75	80	80	81,25
	75th Pctile	96,25	90	100	100	100
	Min	20	20	50	50	60
	Max	100	95	100	100	100
Bartell index_V3-V1	Count	90	30	60	32	28
	Mean	42,944	35	46,917	45,469	48,571
	SD	25,855	22,8186	26,5389	29,0539	23,7603
	95% LCL Mean	37,529	26,479	40,061	34,994	39,358
	95% UCL Mean	48,36	43,521	53,772	55,944	57,785
	Median	45	37,5	47,5	47,5	47,5

Variable	Statistic	All patients	Control Group	Study Group		
				All Group	Subgroup 1 (full)	Subgroup 2 (part)
	IQR	45	40	40	55	38,75
	25th Pctile	20	15	25	20	26,25
	75th Pctile	65	55	65	75	65
	Min	-10	-10	-10	-10	0
	Max	100	75	100	90	100
Bartell index_V5-V1	Count	90	30	60	32	28
	Mean	60,667	50,667	65,667	65,938	65,357
	SD	25,2982	23,479	24,8635	25,5405	24,53
	95% LCL Mean	55,368	41,899	59,244	56,729	55,845
	95% UCL Mean	65,965	59,434	72,09	75,146	74,869
	Median	62,5	50	70	70	65
	IQR	45	31,25	43,75	45	38,75
	25th Pctile	40	38,75	46,25	45	50
	75th Pctile	85	70	90	90	88,75
	Min	0	5	0	15	0
	Max	100	90	100	100	100

14. Statistical study Summary

During the statistical study of the performance indicators, the following summary results were obtained:

Table 10 Summary of the statistical study results, quantitative variables, by groups

Variable	By group			
	Study (S)	Control (C)	Δ (S-C)	P (Δ ≠0)
	M ± SD	M ± SD	M (95% CI)	
Weight calculated_V5-V1	-0,58 ± 2,904	-2,14 ± 2,693	1,55 (0,295 - 2,811)	0,0182
Weight measured_V5-V1	-0,32 ± 1,917	-1,9 ± 2,41	1,58 (0,537 - 2,613)	0,0015
SHRM_V5-V1	-2,35 ± 1,313	-2,2 ± 0,961	-0,15 (-0,636 - 0,336)	0,5801
EAT-10_V3-V1	-7,22 ± 5,422	-5,57 ± 5,532	-1,65 (-4,11 - 0,81)	0,1799
EAT-10_V5-V1	-13,25 ± 7,905	-9,73 ± 6,643	-3,52 (-6,68 - -0,353)	0,0392
Rivermead_V5-V1	8,65 ± 2,661	7,2 ± 2,809	1,45 (0,213 - 2,687)	0,0189
Total protein_V5-V1	3,89 ± 5,668	-1,32 ± 4,317	5,2 (3,061 - 7,347)	<0,001
Albumin_V5-V1	2,23 ± 3,457	-1,35 ± 3,688	3,59 (1,968 - 5,206)	<0,001
Lymphocytes_V5-V1	0,5 ± 0,714	0,14 ± 0,667	0,36 (0,056 - 0,666)	0,0233
PNI_V3-V1	3,03 ± 5,14	-2,49 ± 4,728	5,52 (3,34 - 7,692)	<0,001
PNI_V5-V1	4,75 ± 4,934	-0,65 ± 5,572	5,39 (2,983 - 7,8)	<0,001
Creatinine_V5-V1	-0,7 ± 11,111	0,82 ± 8,04	-1,52 (-5,603 - 2,572)	0,5082
Hand grip strength_V3-V1	3,37 ± 4,466	0,2 ± 6,461	3,17 (-0,075 - 6,409)	0,0225
EQ5D3L TTO_V5-V1	0,87 ± 0,485	0,65 ± 0,415	0,22 (0,019 - 0,411)	0,0404
EQ5D3L VAS_V5-V1	38,5 ± 19,964	24,33 ± 18,417	14,17 (5,699 - 22,634)	0,0016
MASA_V3-V1	21,38 ± 11,604	15,33 ± 15,535	6,05 (-0,408 - 12,508)	0,0408
Bartell_V3-V1	46,92 ± 26,539	35 ± 22,819	11,92 (1,149 - 22,684)	0,0386
Bartell_V5-V1	65,67 ± 24,863	50,67 ± 23,479	15 (4,292 - 25,708)	0,0073

Table 11 Summary of the statistical study results, quantitative variables, by subgroups

Variable	By subgroup of the study group			
	Subgroup 1 (full) (F)	Subgroup 2 (part) (P)	Δ (F-P)	P (Δ ≠0)
	M ± SD	M ± SD	M (95% CI)	
Weight calculated_V5-V1	-0,34 ± 2,517	-0,88 ± 3,347	0,53 (-1,062 - 2,131)	0,4907
Weight measured_V5-V1	-0,5 ± 1,889	-0,12 ± 1,966	-0,38 (-1,423 - 0,653)	0,4592
SHRM_V5-V1	-2,44 ± 1,435	-2,25 ± 1,175	-0,19 (-0,862 - 0,487)	0,5853
EAT-10_V3-V1	-7,47 ± 4,501	-6,93 ± 6,388	-0,54 (-3,448 - 2,367)	0,7037
EAT-10_V5-V1	-13,53 ± 8,016	-12,93 ± 7,911	-0,6 (-4,727 - 3,522)	0,7711
Rivermead_V5-V1	9,28 ± 2,067	7,93 ± 3,09	1,35 (-0,034 - 2,739)	0,0486
Total protein_V5-V1	4,23 ± 6,514	3,5 ± 4,603	0,73 (-2,157 - 3,625)	0,6209
Albumin_V5-V1	2,62 ± 4,001	1,79 ± 2,71	0,84 (-0,914 - 2,586)	0,3544
Lymphocytes_V5-V1	0,66 ± 0,781	0,32 ± 0,593	0,34 (-0,019 - 0,694)	0,0674
PNI_V3-V1	2,7 ± 5,842	3,41 ± 4,274	-0,71 (-3,336 - 1,916)	0,5979
PNI_V5-V1	5,92 ± 5,343	3,4 ± 4,111	2,52 (0,075 - 4,972)	0,0472
Creatinine_V5-V1	-3,89 ± 12,203	2,95 ± 8,541	-6,83 (-12,233 - -1,437)	0,0161
Hand grip strength_V3-V1	3,65 ± 3,588	3,04 ± 5,355	0,61 (-2,062 - 3,283)	0,638
EQ5D3L TTO_V5-V1	0,95 ± 0,486	0,78 ± 0,474	0,18 (-0,07 - 0,427)	0,1569
EQ5D3L VAS_V5-V1	42,19 ± 20,827	34,29 ± 18,395	7,9 (-2,234 - 18,038)	0,1272

MASA_V3-V1	19,44 ± 9,568	23,61 ± 13,398	-4,17 (-10,292 - 1,952)	0,1669
Bartell_V3-V1	45,47 ± 29,054	48,57 ± 23,76	-3,1 (-16,76 - 10,555)	0,6553
Bartell_V5-V1	65,94 ± 25,541	65,36 ± 24,53	0,58 (-12,375 - 13,536)	0,929

Categorical variables

Table 12 Summary of the statistical study results, categorical variables, by groups

Appetite V1-V3	**Group**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Study	34	18	52,9%	0,5730
	Control	20	9	45,0%	
Appetite V1-V5	**Group**	**With deviation at V1**	**Improved to V5**	**Proportions**	**p**
	Study	34	20	58,8%	0,0909
	Control	20	7	35,0%	
Aspiration MASA_V1-V3	**Group**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Study	22	21	95,5%	0,0300
	Control	9	6	66,7%	
Dysphagia MASA V1-V3	**Group**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Study	43	23	53,5%	0,1283
	Control	16	5	31,3%	
Dependence by Bartell V1-V3	**Group**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Study	59	7	11,9%	0,1835
	Control	30	1	3,3%	
Dependence by Bartell V1-V5	**Group**	**With deviation at V1**	**Improved to V5**	**Proportions**	**p**
	Study	59	27	45,8%	0,0002
	Control	30	2	6,7%	

Table 13 Summary of the statistical study results, categorical variables, by subgroups

Appetite V1-V3	**Subgroup**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Subgroup 1 (full)	18	8	44,4%	0,2924
	Subgroup 2 (part)	16	10	62,5%	
Appetite V1-V5	**Subgroup**	**With deviation at V1**	**Improved to V5**	**Proportions**	**p**
	Subgroup 1 (full)	18	10	55,6%	0,6813
	Subgroup 2 (part)	16	10	62,5%	
Aspiration MASA_V1-V3	**Subgroup**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Subgroup 1 (full)	10	9	90,0%	0,2622
	Subgroup 2 (part)	12	12	100,0%	
Dysphagia MASA V1-V3	**Subgroup**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Subgroup 1 (full)	22	12	54,5%	0,8869
	Subgroup 2 (part)	21	11	52,4%	
Dependence by Bartell V1-V3	**Subgroup**	**With deviation at V1**	**Improved to V3**	**Proportions**	**p**
	Subgroup 1 (full)	32	5	15,6%	0,3308
	Subgroup 2 (part)	27	2	7,4%	
Dependence by Bartell V1-V5	**Subgroup**	**With deviation at V1**	**Improved to V5**	**Proportions**	**p**
	Subgroup 1 (full)	32	17	53,1%	0,2166
	Subgroup 2 (part)	27	10	37,0%	

15. Efficacy

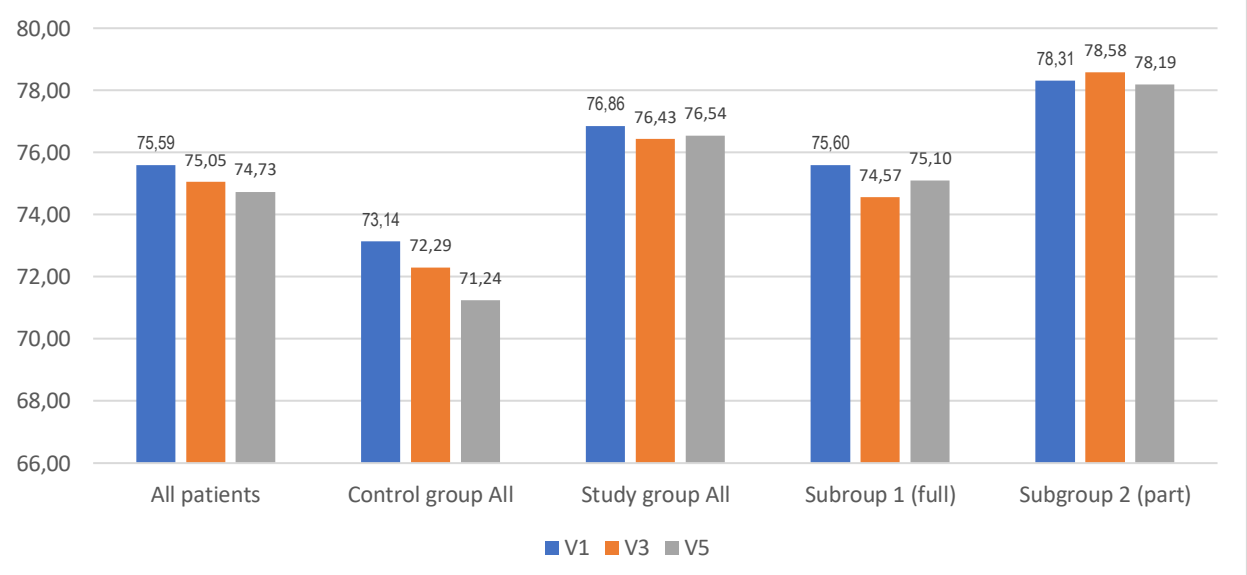
15.1. Weight

Patients' weight was assessed at visits 1, 3, 5. Considering that the study included patients after stroke, it was decided to simultaneously use two methods of weight recording: 1) based on weight measurement (when possible) and 2) based on weight calculation using an algorithm based on height, hip and waist circumference measurements, taking into account the patient's gender (Lorenz MW, Graf M, Henke C, Hermans M, Ziemann U, Sitzer M, Foerch C. Anthropometric approximation of body weight in unresponsive stroke patients. J Neurol Neurosurg Psychiatry. 2007 Dec;78(12):1331-6. doi: 10.1136/jnnp.2007.117150. Epub 2007 May 10. PMID: 17494978; PMCID: PMC2095625.). The results obtained are described in detail in the statistical analysis.

Table 14 Weight measured, mean (kg)

	V1	V3	V5
All patients	75,59	75,05	74,73
Control group	73,14	72,29	71,24
Study group All	76,86	76,43	76,54
Subgroup 1 (full)	75,60	74,57	75,10
Subgroup 2 (part)	78,31	78,58	78,19

Figure 4 Weight measured, mean (kg)



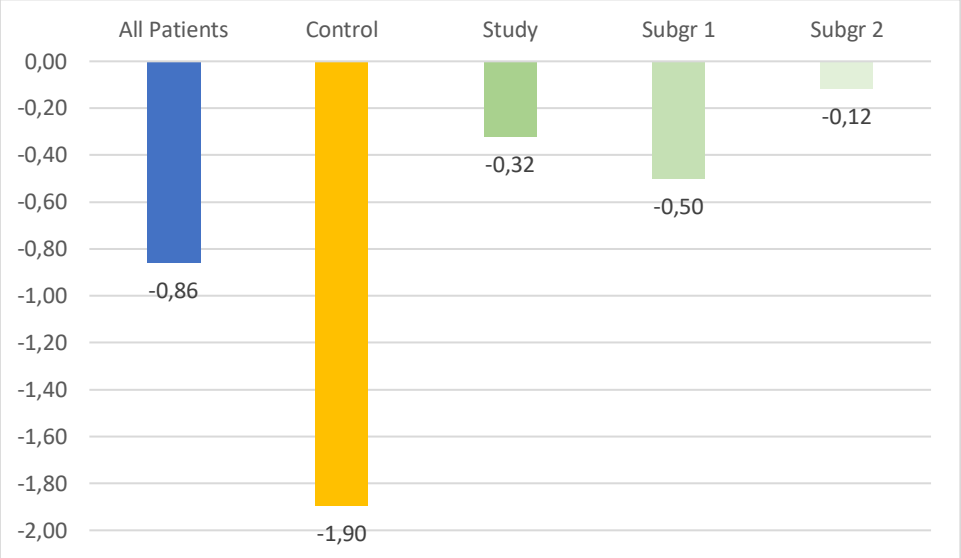
To assess the differences between the groups, the change in the average weight of patients in the groups and in the subgroups between V5 and V1 was calculated. The following results were obtained.

Table 15 Change in weight V5-V1 (measured weight, kg) by groups and subgroups

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	85	29	56	30	26
Mean	-0,86	-1,90	-0,32	-0,50	-0,12
SD	2,22	2,41	1,92	1,89	1,97

Median	-1,00	-2,00	0,00	0,00	0,00
Q25	-2,00	-4,00	-1,00	-1,00	-1,00
Q75	0,00	0,00	1,00	0,00	1,00
Min	-7	-6	-7	-7	-4
Max	6	5	6	3	6

Figure 5 Change in weight V5-V1 (measured weight, kg) by groups and subgroups



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.90.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Table 16 Weight calculated, mean (kg)

	V1	V3	V5
All patients	74,53	73,54	73,43
Control group	70,23	68,13	68,10
Study group All	76,67	76,24	76,09
Subgroup 1 (full)	74,89	74,00	74,55
Subgroup 2 (part)	78,87	79,01	77,99

Figure 6 Weight calculated, mean (kg)

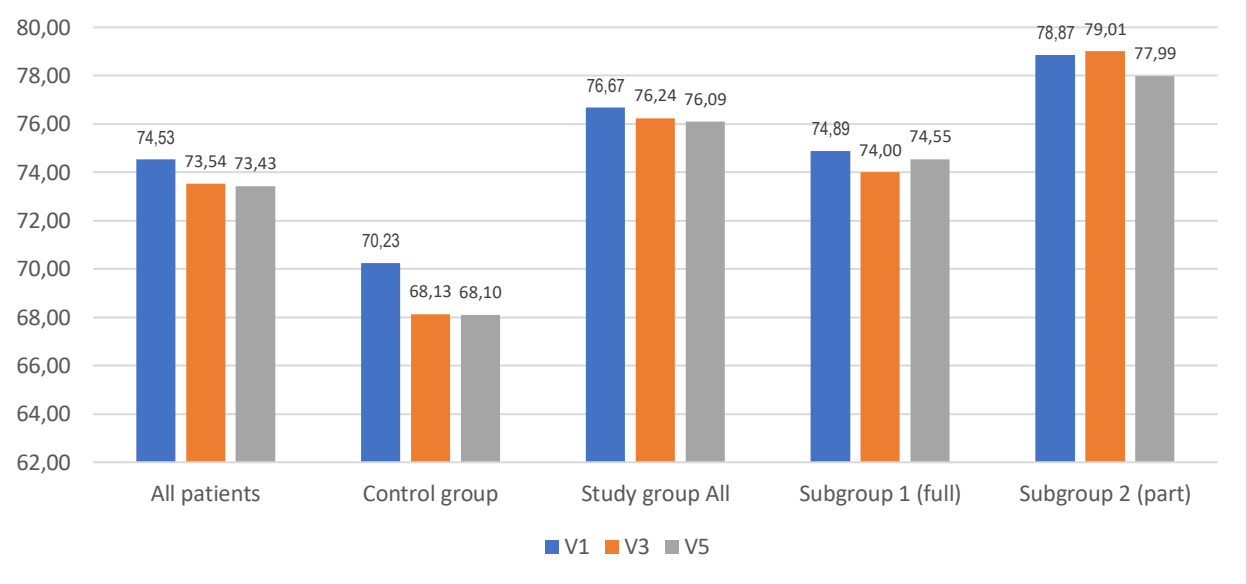
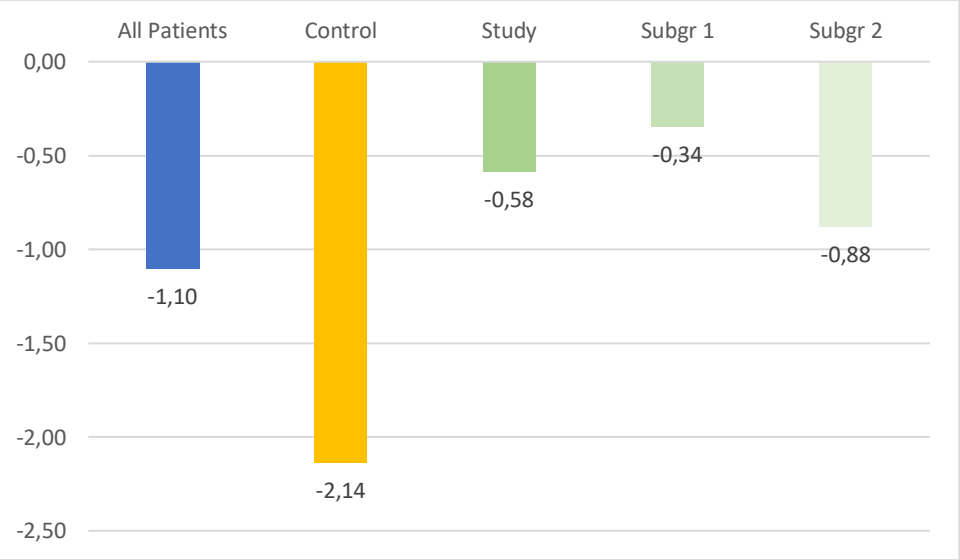


Table 17 Change in weight V5-V1 (calculated weight, kg) by groups and subgroups

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	87	29	58	32	26
Mean	-1,10	-2,14	-0,58	-0,34	-0,88
SD	2,91	2,69	2,90	2,52	3,35
Median	-1,18	-2,32	-1,09	-1,02	-1,18
Q25	-2,75	-3,92	-2,35	-2,09	-2,47
Q75	0,59	-0,39	1,01	1,14	0,63
Min	-7	-7	-7	-5	-7
Max	9	4	9	5	9

Figure 7 Change in weight V5-V1 (calculated weight, kg) by groups and subgroups

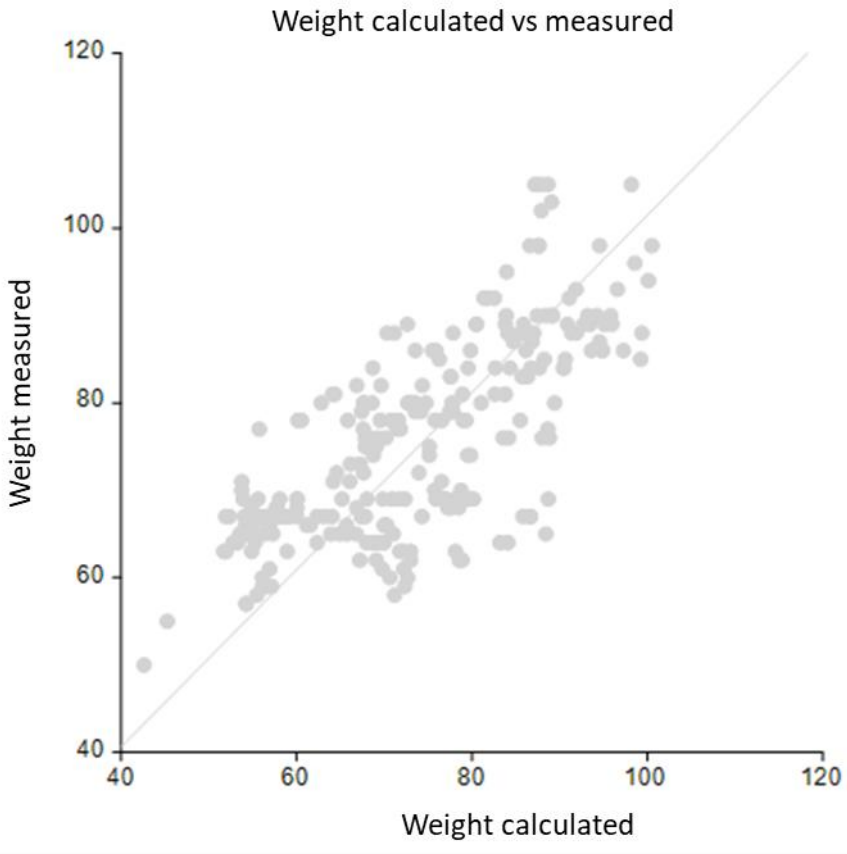


Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.66.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Additionally, a regression-correlation analysis of the "Calculated weight" and "Measured weight" indicators was performed in the study patients. The correlation coefficient was 0.9929, which indicates a high comparability of the weight measurement methods used.

Figure 8 Results of distribution of measured and calculated weight, kg



Conclusion for the section

In both study groups, patients lost weight during the 3 months of observation. However, in the group of patients receiving nutritional support, the weight loss was significantly lower than in the group of patients on a standard diet in the hospital or at home. There was also a difference between the subgroups: in the subgroup of patients receiving nutritional support during the entire observation period (90 days), the weight loss was less pronounced. However, this later difference did not withstand statistical testing.

15.2. SHRM (Rehabilitation Routing Scale)

The rehabilitation routing scale (SHRM) was filled in by doctors at visits 1, 2, 3, 5. The change in the indicator characterizes the change in the patient's condition, taking into account the course of the underlying disease.

- Score 0-1 - does not require rehabilitation.
- Score 2-3 - a course of treatment in the conditions of the medical rehabilitation department of the day hospital.
- Score 4-5-6 - a course of treatment in the conditions of the medical rehabilitation department of the 24-hour stay

To assess changes during the study, the difference between the values at V5 and V1 was calculated. The following results were obtained. A decrease in the result indicates a greater improvement in the patient's condition.

Table 18 SHRM score, mean

	V1	V2	V3	V5
All patients	4,26	3,43	2,79	1,96
Control group	4,27	3,40	2,80	2,07
Study group All	4,25	3,45	2,78	1,90
Subgroup 1 (full)	4,22	3,69	2,88	1,78
Subgroup 2 (part)	4,29	3,18	2,68	2,04

Figure 9 SHRM score, mean

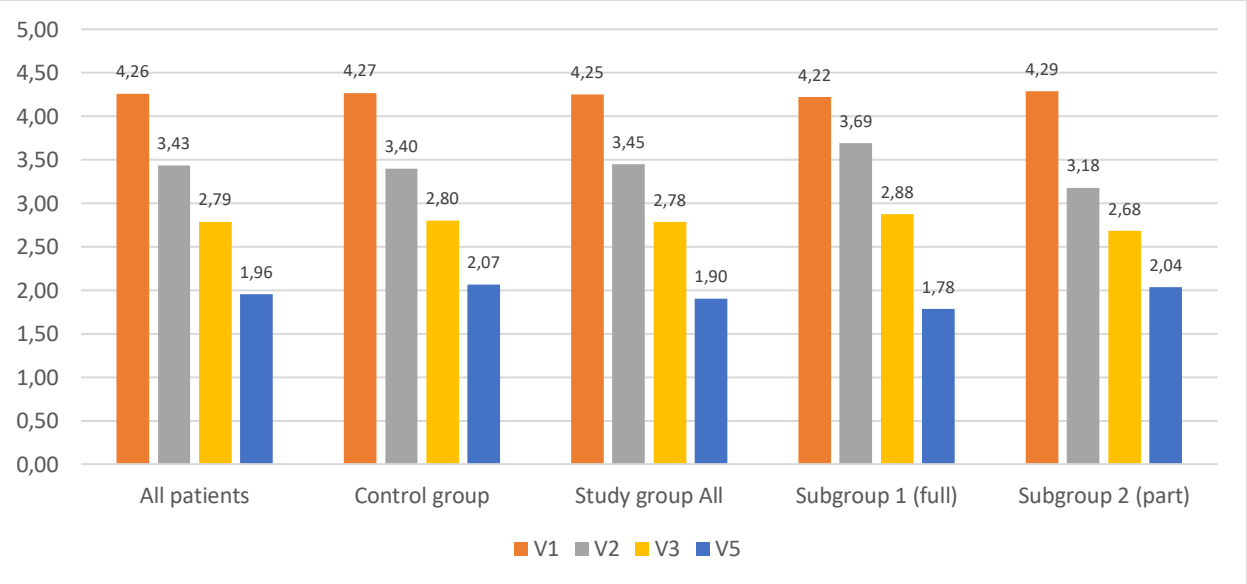
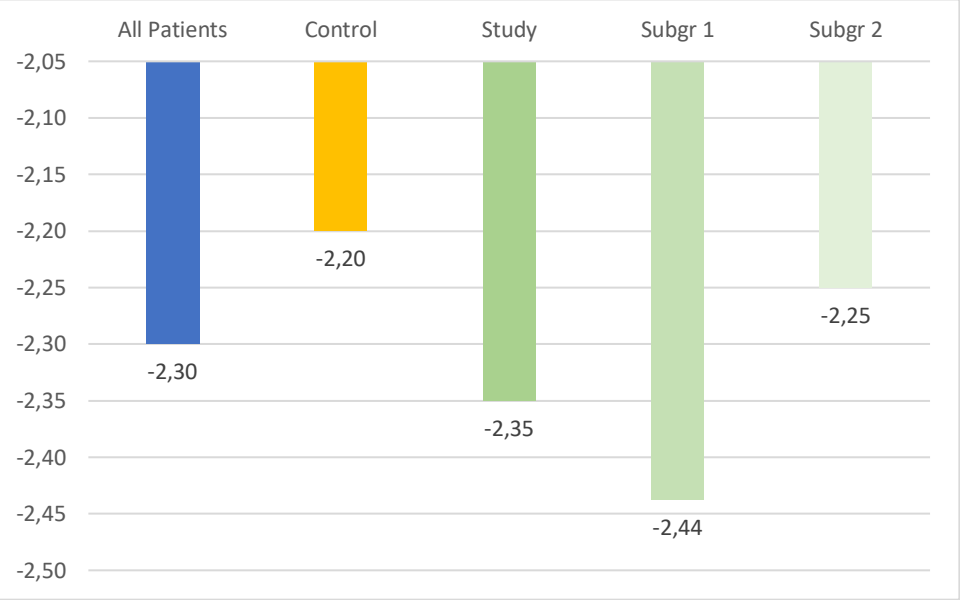


Table 19 Change of SHRM score V5-V1

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	-2,30	-2,20	-2,35	-2,44	-2,25
SD	1,20	0,96	1,31	1,44	1,17
Median	-2,00	-2,00	-2,00	-3,00	-2,00
Q25	-3,00	-3,00	-3,00	-4,00	-3,00
Q75	-1,00	-1,25	-1,00	-1,00	-1,00
Min	-5	-4	-5	-5	-5

Max	1	-1	1	1	-1

Figure 10 Change of SHRM score V5-V1



Differences between groups and subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods did not confirm statistical significance of differences ($p>0.05$).

Conclusion for the section

In both groups, the investigators noted an improvement in the patients' condition according to the SRM scale, and there were small advantages in the study group compared to the control group, as well as in the full nutritional support subgroup compared to the partial nutritional support subgroup. However, statistical significance was not confirmed for both differences. This is probably due to the wide definition step in the range of 2-3 points and the fact that all patients somehow achieved an improvement in their condition thanks to qualified medical care.

15.3. EAT-10

The Eating Attitude Assessment Scale-10 (EAT-10) is a dysphagia screening tool developed in 2008 to identify individuals at high risk of swallowing disorders. The EAT-10 is currently used in clinical settings worldwide and has been translated into dozens of languages and successfully validated. Each question has a scale corresponding to 5 levels of difficulty from “no problem” to “severe problem” with a total score from 0 to 40. The EAT-10 has good internal consistency and intraclass correlation. The tool has been shown to be useful for screening dysphagia in the oropharyngeal and esophageal phases, as well as for identifying swallowing disorders in healthy individuals. Among other things, the questionnaire has been successfully used to assess dysphagia in patients after stroke.

Physicians filled out the EAT-10 scale at visits 1, 2, 3, 4, 5. A decrease in the total score indicates improvement. To assess the changes, the difference in the total score for V3-V1 and V5-V1 was calculated. The following results were obtained.

Table 20 EAT-10 scores, mean

	V1	V2	V3	V4	V5
All patients	16,24	13,17	9,58	7,47	4,17
Control group	16,37	13,93	10,80	8,80	6,63
Study group All	16,18	12,80	8,97	6,80	2,93
Subgroup 1 (full)	16,16	12,56	8,69	6,47	2,63
Subgroup 2 (part)	16,21	13,07	9,29	7,18	3,29

Figure 11 EAT-10 scores, mean

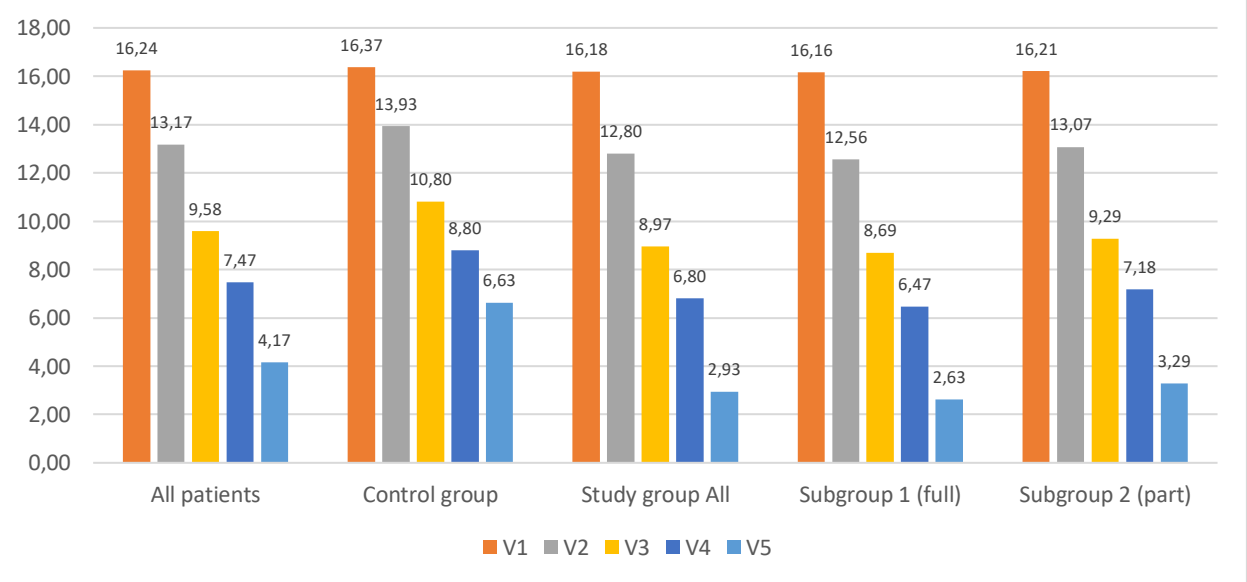
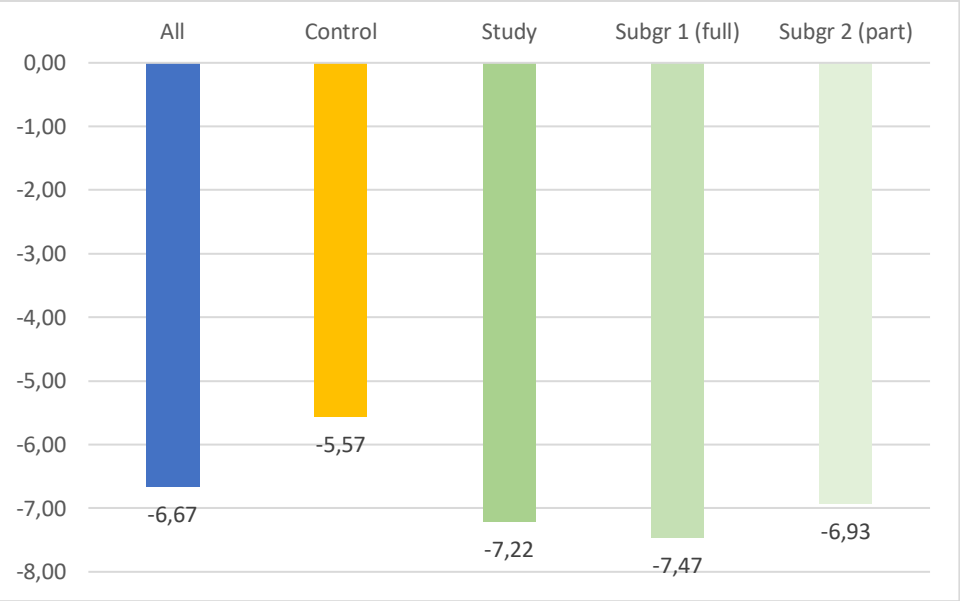


Table 21 Change of mean EAT-10 V3-V1

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	-6,67	-5,57	-7,22	-7,47	-6,93
SD	5,48	5,53	5,42	4,50	6,39
Median	-6,00	-4,00	-7,00	-7,50	-7,00
Q25	-10,00	-9,75	-10,00	-10,00	-9,50

Q75	-3,00	-1,25	-4,00	-4,75	-3,00
Min	-23	-17	-23	-17	-23
Max	7	4	7	0	7

Figure 12 Change of mean EAT-10 V3-V1

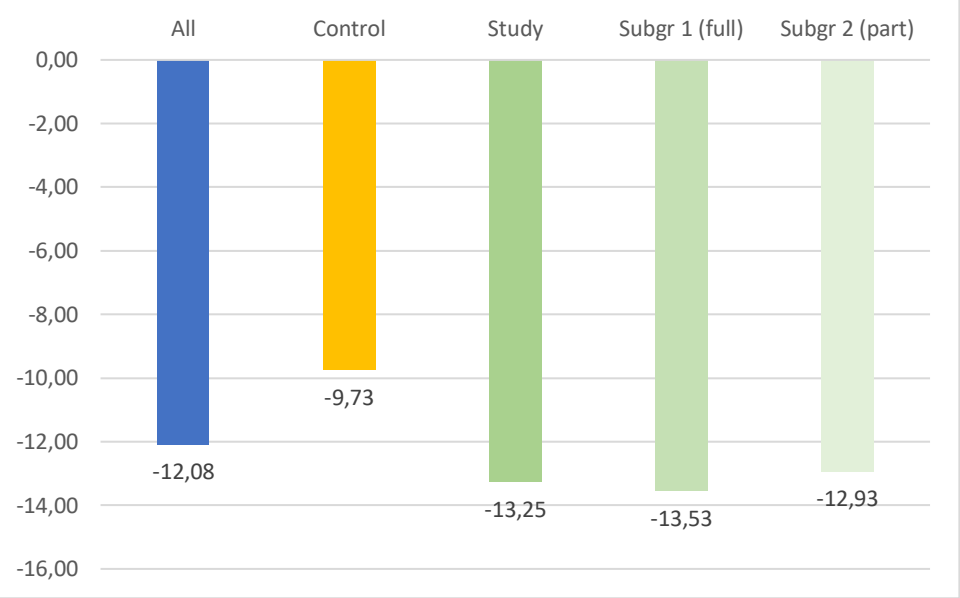


Differences between groups and subgroups at visit 3 were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods did not confirm statistical significance of differences (p>0.05) despite some advantages of the study group in relation to the control group.

Table 22 Change of mean EAT-10 V5-V1

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	-12,08	-9,73	-13,25	-13,53	-12,93
SD	7,65	6,64	7,91	8,02	7,91
Median	-11,00	-7,50	-13,00	-12,00	-13,50
Q25	-18,00	-15,00	-19,00	-20,00	-18,00
Q75	-5,00	-5,00	-5,75	-6,75	-5,00
Min	-32	-25	-32	-29	-32
Max	0	0	-2	-2	-3

Figure 13 Change of mean EAT-10 V5-V1



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.54.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$)).

Conclusion for the section

In both groups, the investigators noted a decrease in the severity of dysphagia according to the EAT-10 scale both by the date of discharge from the hospital and at the end of the observations. However, statistically significant differences in the reduction in the severity of dysphagia between the groups (control and study) were achieved by day 90. Longer use of thickeners at all stages of the early recovery period contributed to a more significant decrease in the severity of dysphagia.

15.4. Rivermead mobility index

The Rivermead Mobility Index was developed as a means of quantifying mobility impairments in stroke survivors. The RMI is clinically meaningful when testing functional abilities such as gait, balance, and transfer. Physicians recorded Rivermead scores at visits 1, 2, 3, 4, and 5. The difference between V5 and V1 scores was calculated to assess change. An increase in the value indicates an increase in patient mobility. The minimum value is 0, and the maximum value of the index is 15. The following results were obtained.

Table 23 Rivermead score (means)

	B1	B2	B3	B4	B5
All patients	2,77	5,30	8,09	10,00	10,93
Control group	2,83	4,97	7,97	9,73	10,03
Study group All	2,73	5,47	8,15	10,13	11,38
Subgroup 1 (full)	2,63	5,31	8,28	10,31	11,91
Subgroup 2 (part)	2,86	5,64	8,00	9,93	10,79

Figure 14 Rivermead score (means)

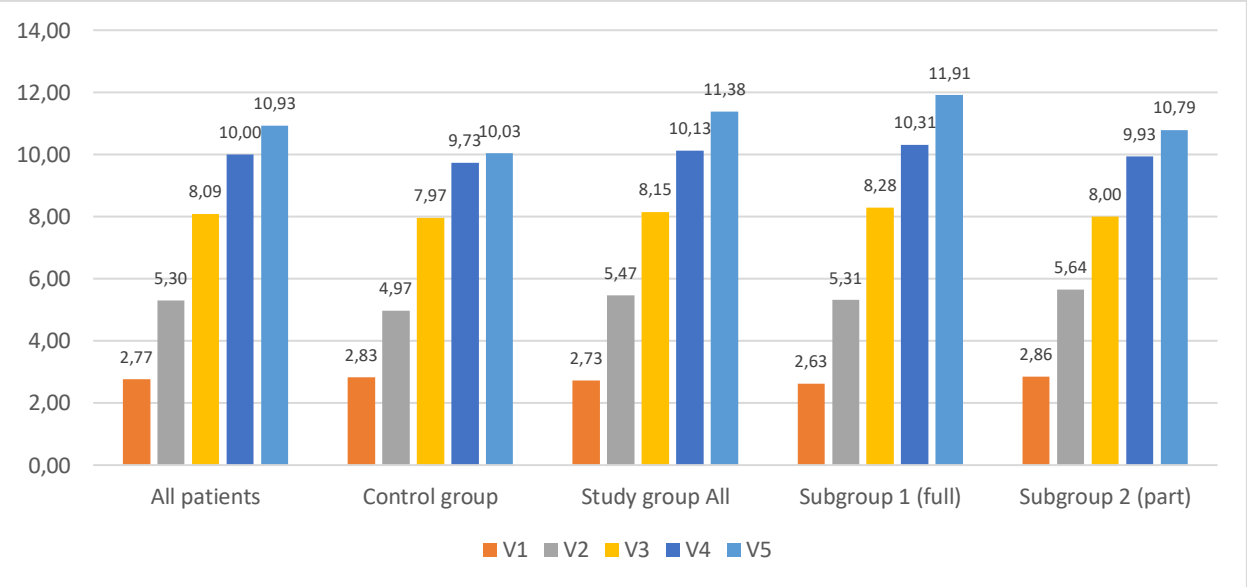
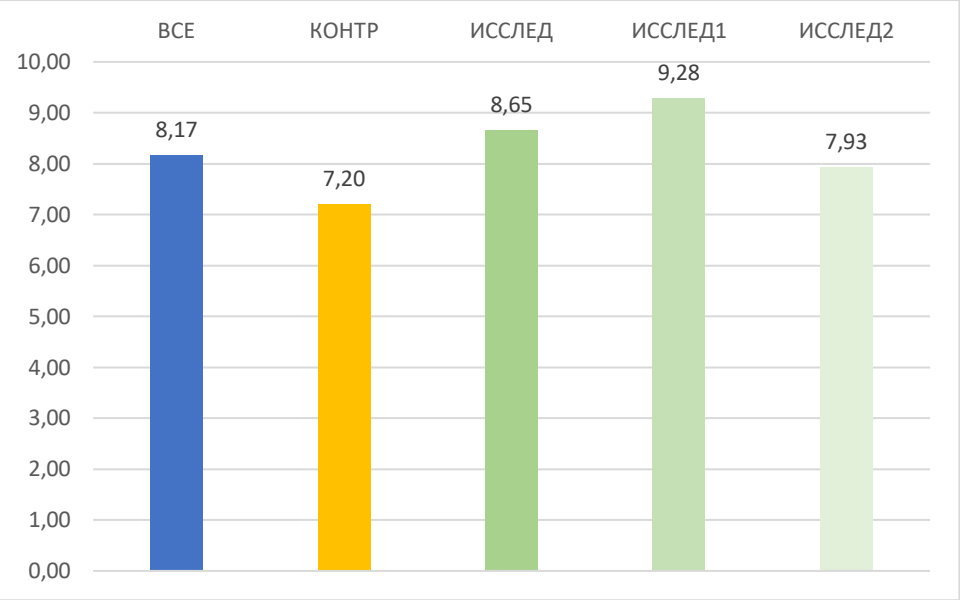


Table 24 Change of Rivermead score (V5-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	8,17	7,20	8,65	9,28	7,93
SD	2,78	2,81	2,66	2,07	3,09
Median	9,00	7,50	9,00	9,00	9,00
Q25	7,00	6,00	7,00	8,00	6,00
Q75	10,00	9,00	10,00	11,00	10,00
Min	-1	-1	0	5	0
Max	14	11	14	13	14

Figure 15 Change of Rivermead score (V5-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.65.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was achieved ($p<0.05$), power 0.51 using the Equal-Variance T-Test. The results of other methods showed a p-value of about 0.05-0.06, indicating a trend.

Conclusion on the section

In both groups, the researchers noted an improvement in the Rivermead Mobility Index. The differences in mean scores between groups demonstrated statistical significance at the end of observation. The most significant changes in the Rivermead Index were achieved by day 90 in the study group vs. the control group ($p<0.05$). And the differences between subgroups indicated a trend indicating the hypothesis of the advantage of longer-term use of nutritional support.

15.5. Blood

Blood parameters: total protein, serum albumin, absolute lymphocytes were measured at visits 1, 2, 3, 5. At the outpatient stage, blood was collected from patients at home. To assess the changes, the difference between the indicator at V5 and V1 was calculated. Next, a complex indicator PNI was calculated - a prognostic nutritional index using the formula [serum albumin (g / l)] + 5 × [total lymphocyte count (10 ^ 9 / l)]. The following results were obtained.

Total Protein

Table 25 Total protein, means (g/l)

	V1	V2	V3	V5
All patients	64,43	63,12	65,36	66,58
Control group	65,52	61,57	63,24	64,20
Study group All	63,88	63,89	66,42	67,77
Subgroup 1 (full)	63,65	63,97	65,69	67,88
Subgroup 2 (part)	64,13	63,80	67,25	67,63

Normal values in adults – 65–85 g/l

Figure 16 Total protein, means (g/l)

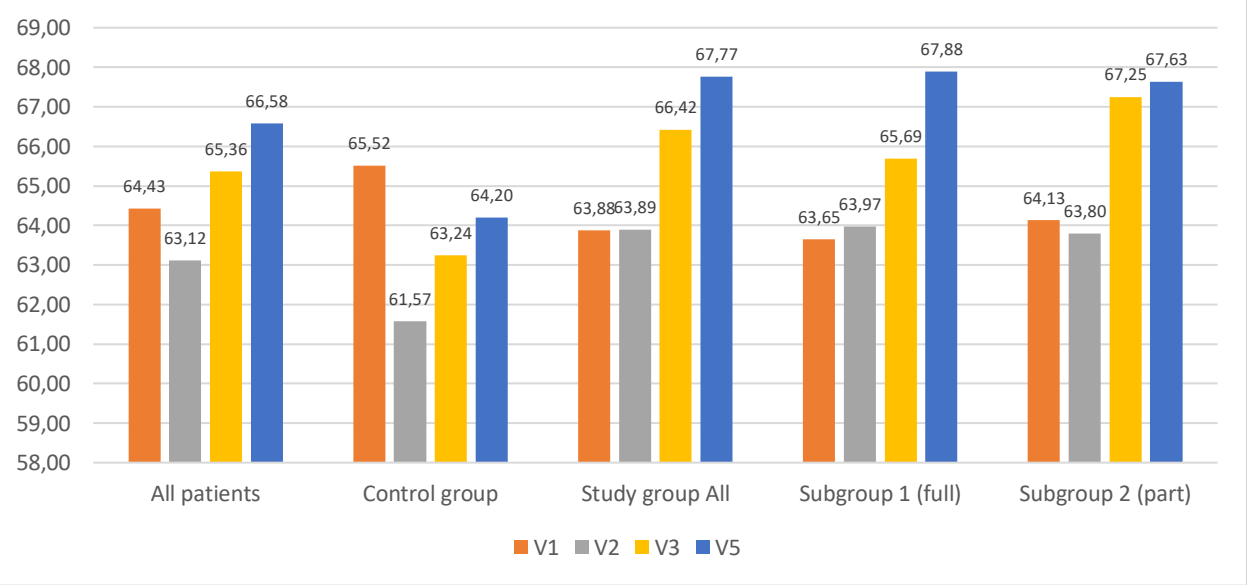
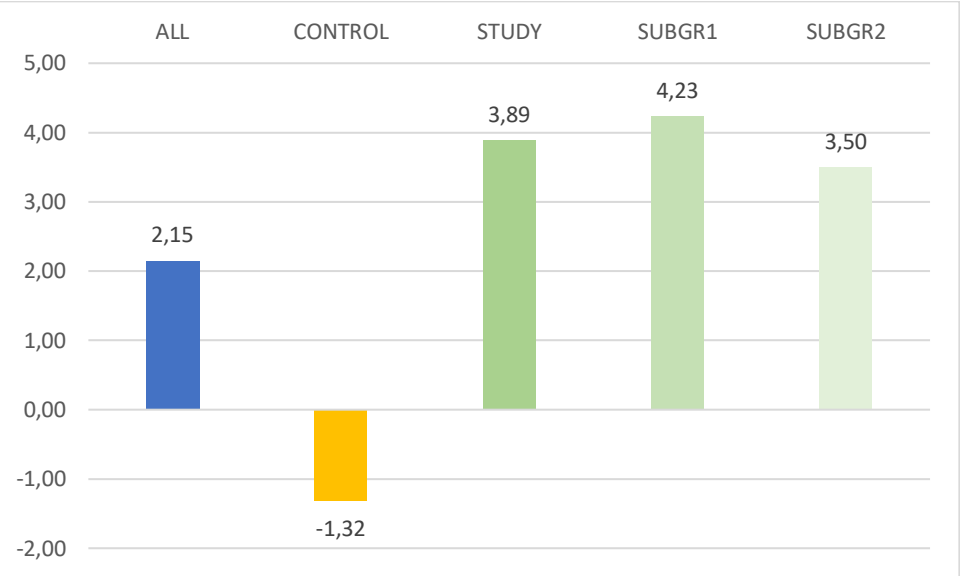


Table 26 Change of total protein (V5-V1, g/l)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	2,15	-1,32	3,89	4,23	3,50
SD	5,78	4,32	5,67	6,51	4,60
Median	2,11	-1,60	3,96	4,79	2,96
Q25	-1,44	-3,79	1,25	1,89	0,90
Q75	5,34	1,14	7,56	8,04	5,93
Min	-12	-12	-12	-12	-7
Max	15	10	15	14	15

Figure 17 Change of total protein (V5-V1, g/l)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.01$), power 0.99.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Serum albumin

Table 27 Serum albumin, means (g/l)

	V1	V2	V3	V5
All patients	38,40	37,38	39,02	39,44
Control group	38,85	36,00	37,30	37,50
Study group All	38,17	38,07	39,88	40,41
Subgroup 1 (full)	37,93	38,17	39,14	40,55
Subgroup 2 (part)	38,45	37,95	40,73	40,24

Figure 18 Serum albumin, means (g/l)

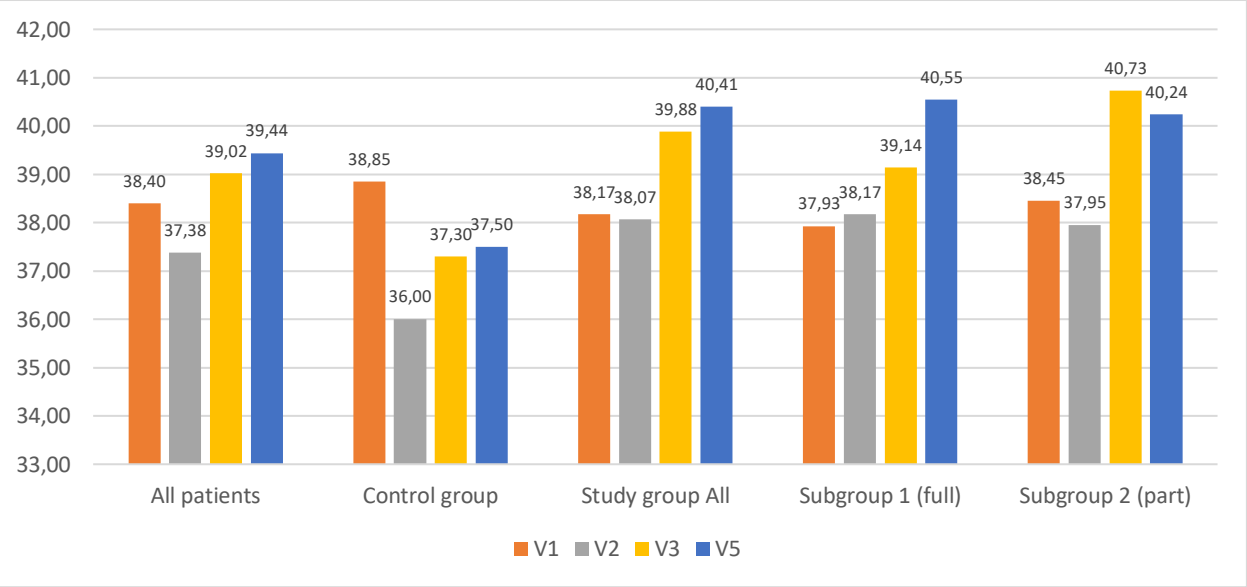
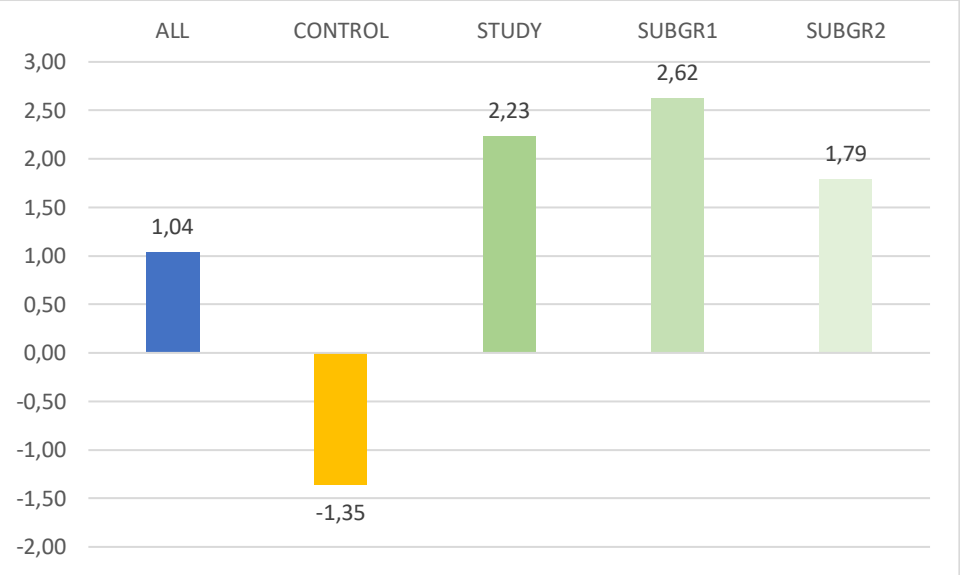


Table 28 Change of serum albumin (V5-V1, g/l)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	1,04	-1,35	2,23	2,62	1,79
SD	3,90	3,69	3,46	4,00	2,71
Median	1,53	-0,26	2,71	3,66	1,86
Q25	-0,79	-4,28	0,79	1,60	0,79
Q75	3,61	0,64	4,54	5,32	2,71
Min	-9	-8	-9	-9	-6
Max	9	7	9	9	8

Figure 19 Change of serum albumin (V5-V1, g/l)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.01$), power 0.99.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not proven ($p>0.05$).

Absolute lymphocytes

Table 29 Absolute lymphocytes, means (10^9/l)

	V1	V2	V3	V5
All patients	1,61	1,70	1,72	1,99
Control group	1,60	1,58	1,41	1,74
Study group All	1,61	1,76	1,88	2,12
Subgroup 1 (full)	1,56	1,75	1,86	2,22
Subgroup 2 (part)	1,67	1,78	1,90	2,00

Figure 20 Absolute lymphocytes, means (10^9/l)

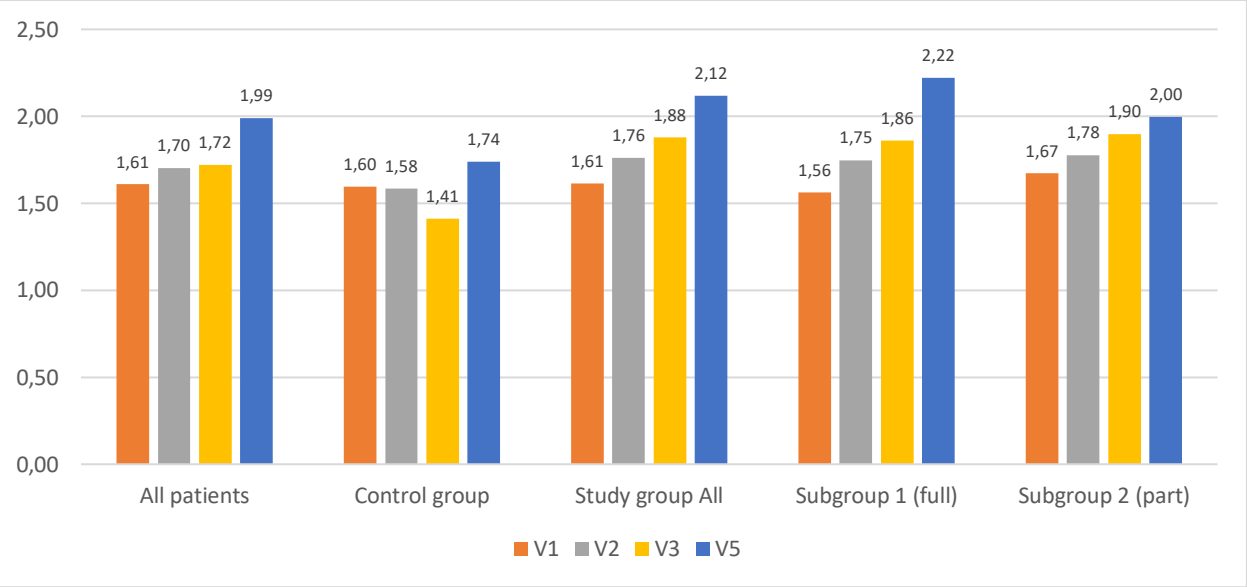
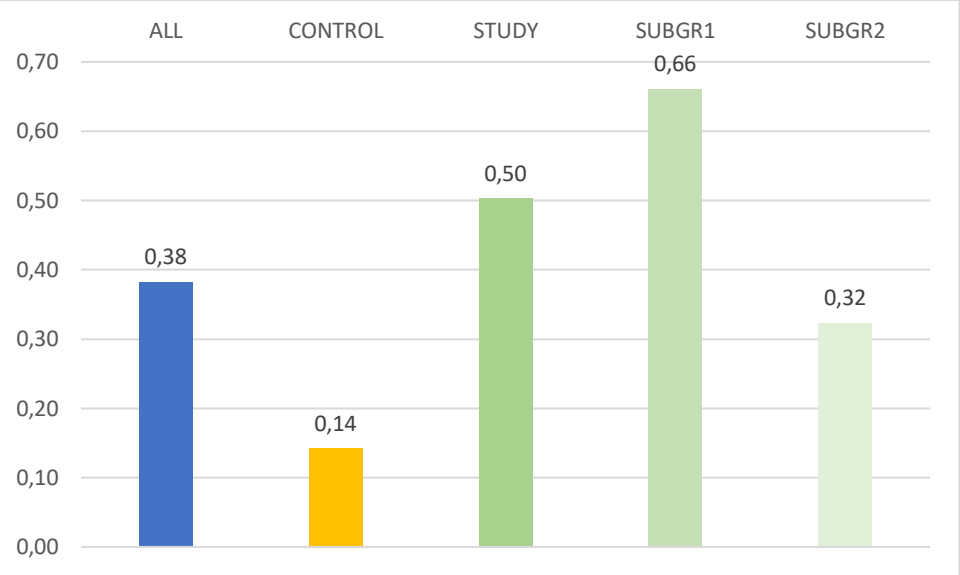


Table 30 Change of absolute lymphocytes (V5-V1) 10^9/l

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	0,38	0,14	0,50	0,66	0,32
SD	0,72	0,67	0,71	0,78	0,59
Median	0,39	0,21	0,45	0,53	0,29
Q25	-0,05	-0,20	0,15	0,29	-0,13
Q75	0,79	0,57	0,85	0,87	0,72
Min	-2	-2	-1	-1	-1
Max	4	1	4	4	1

Figure 21 Change of absolute lymphocytes (V5-V1) 10^9/l



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.63.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not proven ($p>0.05$). However, we can talk about a trend, given that the p-value was approx. 0.06

Prognostic Nutritional Index (PNI)

Table 31 PNI, means

	V1	V2	V3	V5
All patients	46,44	45,89	47,63	49,39
Control group	46,84	43,92	44,35	46,19
Study group All	46,24	46,88	49,27	50,99
Subgroup 1 (full)	45,75	46,91	48,44	51,67
Subgroup 2 (part)	46,81	46,84	50,22	50,21

Figure 22 PNI, means

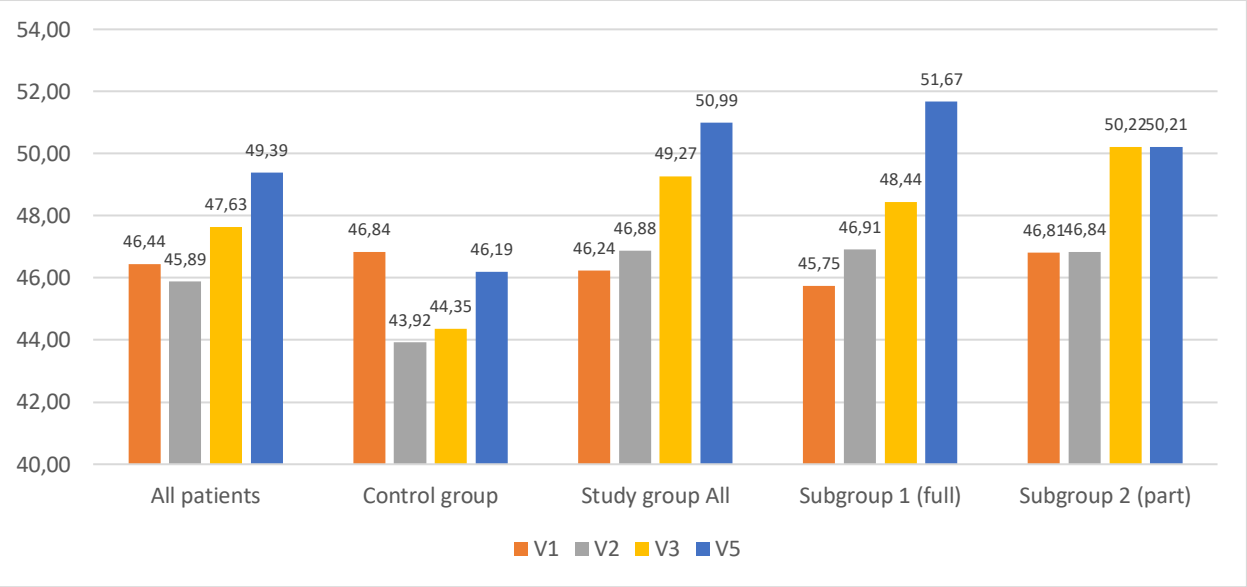
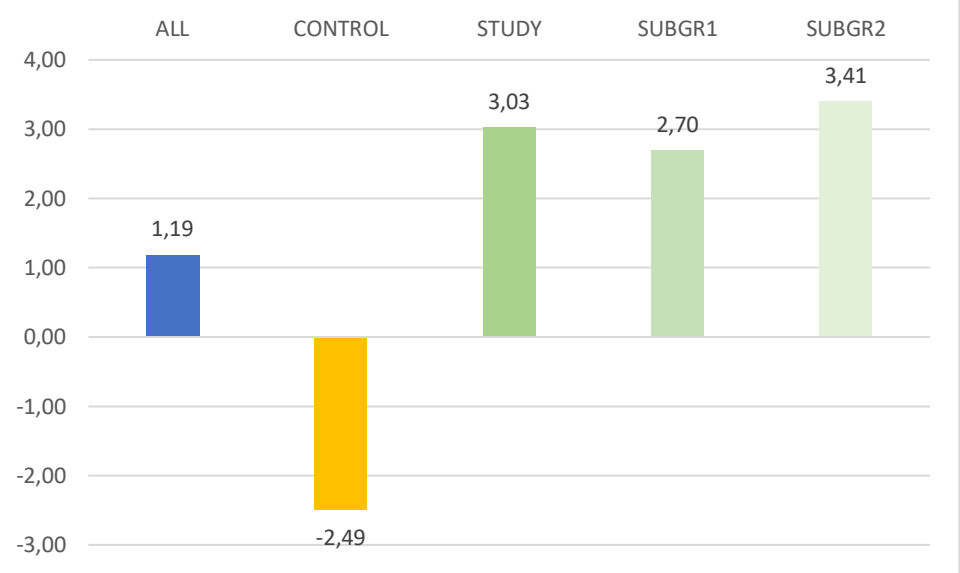


Table 32 Change of PNI (V3-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	1,19	-2,49	3,03	2,70	3,41
SD	5,62	4,73	5,14	5,84	4,27
Median	1,53	-1,47	3,57	2,75	4,35
Q25	-1,18	-5,15	0,58	1,16	0,35
Q75	5,09	0,11	6,68	6,68	6,44
Min	-16	-13	-16	-16	-7
Max	11	7	11	11	10

Figure 23 Change of PNI (V3-V1)



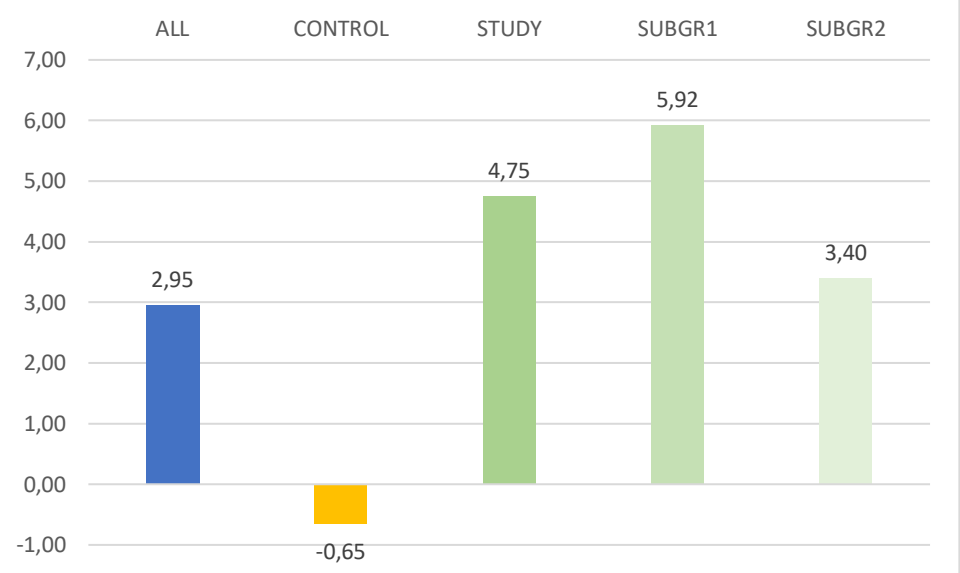
Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.0001$), power 0.998.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not proven ($p>0.05$).

Table 33 Change of PNI (V5-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	2,95	-0,65	4,75	5,92	3,40
SD	5,73	5,57	4,93	5,34	4,11
Median	3,84	0,16	4,65	6,59	4,33
Q25	-0,39	-4,73	1,60	3,95	-0,07
Q75	6,71	2,71	7,39	8,40	6,07
Min	-15	-15	-7	-7	-6
Max	20	11	20	20	11

Figure 24 Change of PNI (V5-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.0001$), power 0.996.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was achieved ($p<0.05$), power 0,53

Serum creatinine

Table 34 Serum creatinine, means (mcmol/l)

	V1	V2	V3	V5
All patients	84,47	81,82	83,92	84,28
Control group	81,58	77,33	81,15	82,40
Study group All	85,92	84,07	85,31	85,22
Subgroup 1 (full)	86,37	83,42	83,96	82,48
Subgroup 2 (part)	85,40	84,81	86,84	88,35

Figure 25 Serum creatinine, means (mcmol/l)

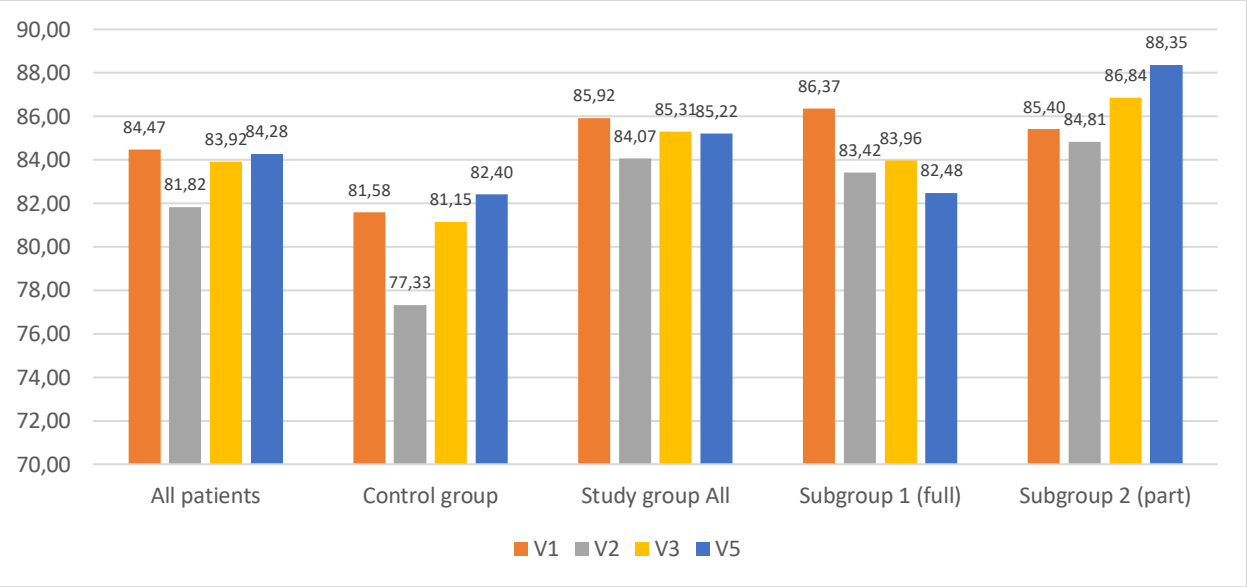
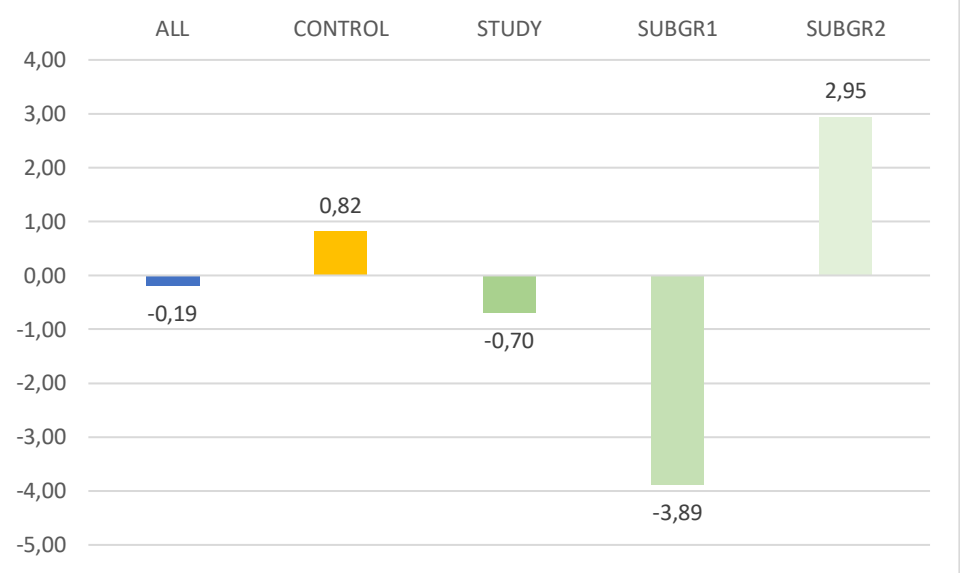


Table 35 Change of serum creatinine (V5-V1) mcmol/l

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	-0,19	0,82	-0,70	-3,89	2,95
SD	10,17	8,04	11,11	12,20	8,54
Median	-0,20	-0,10	-0,20	-5,18	1,59
Q25	-6,54	-4,81	-7,53	-8,87	-2,18
Q75	4,95	6,10	4,29	3,07	9,25
Min	-40	-14	-40	-40	-15
Max	22	22	20	20	19

Figure 26 Change of serum creatinine (V5-V1), mcmol/l



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. None of the methods showed statistical significance of differences ($p>0.05$).

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Unlike between-group differences, statistical significance of differences between subgroups was achieved ($p<0.05$), power 0.68.

It should be noted that the result obtained is paradoxical.

Conclusion on the section

During the study, logical and statistically significant differences were found between the control and study groups in the Total Protein, Serum Albumin and Absolute Lymphocyte Count data, indicating the benefits of nutritional support during the 90-day observation period. No significant differences were found in the subgroups of the study group, despite the obvious trend and the proximity of the differences to the threshold value.

Based on the obtained data on albumin and absolute lymphocyte count, the Prognostic Nutritional Index was calculated, characterizing the general condition of the body from the standpoint of nutritional adequacy and allowing one to predict the nutritional status. It is noteworthy that significant differences in the PNI index between the groups, indicating the benefits of nutritional support, began to be observed already by V3, 30 days after the start of the study. And by V5, 90 days after the start of observation, significant differences began to be observed in the subgroups as well. The results obtained for creatinine are puzzling, being completely opposite to what could be expected. At the same time, the differences between the groups were not confirmed, but there were significant differences between the subgroups.

15.6. Hand grip strength

At the hospital stage, patients, if they had the physical ability, were offered to undergo a wrist force dynamometry test. To assess the dynamics, the difference between the results on V3 and V1 was calculated. The following was obtained.

Table 36 Hand grip strength (DaN)

	V1	V3
All patients	20,32	22,54
Control group	20,30	21,96
Study group All	20,33	22,78
Subgroup 1 (full)	21,15	23,25
Subgroup 2 (part)	19,39	22,25

Figure 27 Hand grip strength (DaN)

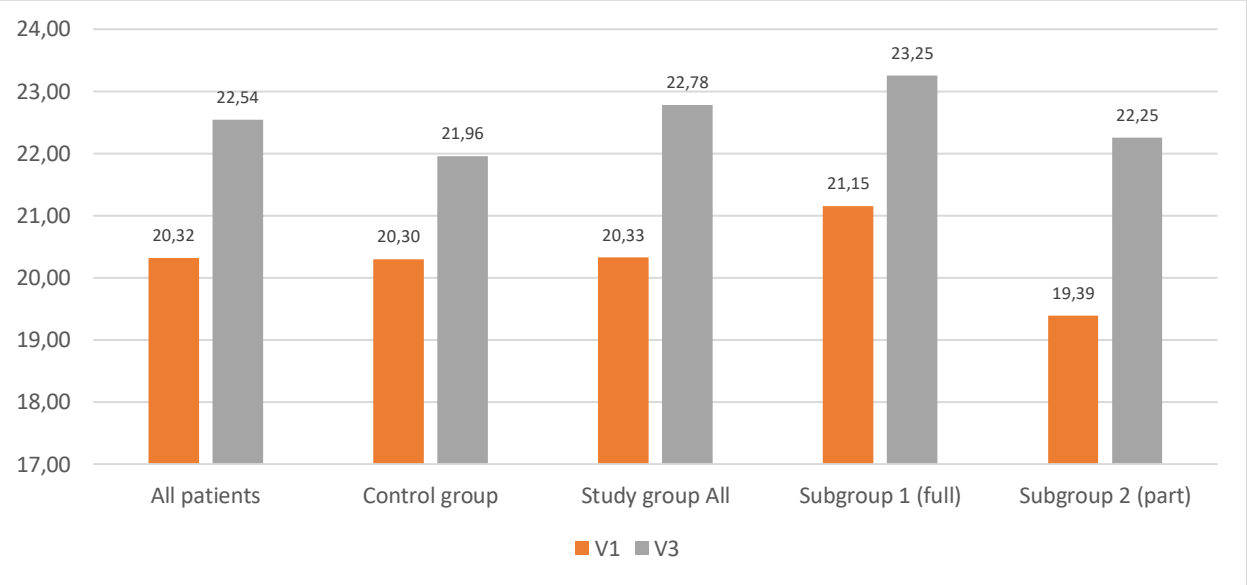
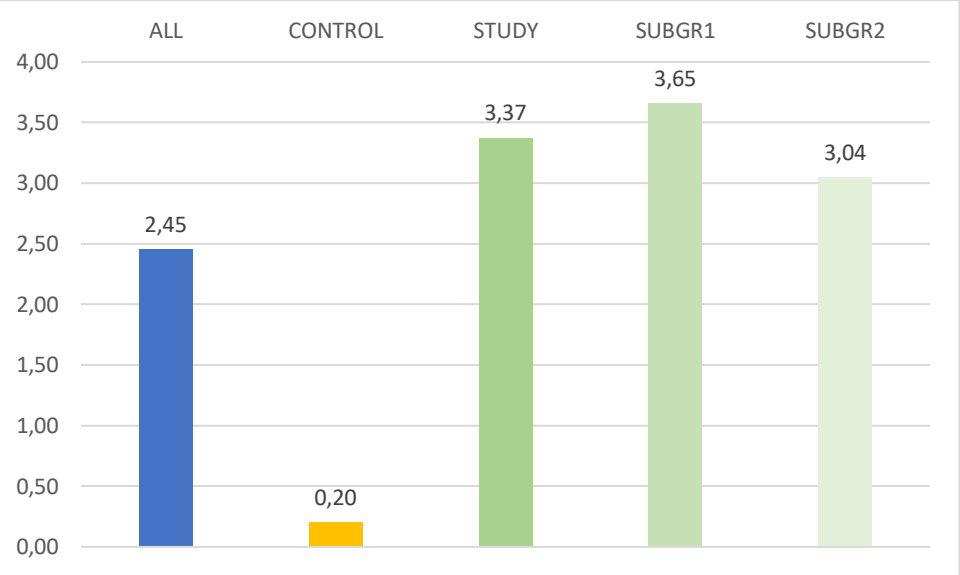


Table 37 Change of hand grip strength (V3-V1), DaN

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	69	20	49	26	23
Mean	2,45	0,20	3,37	3,65	3,04
SD	5,28	6,46	4,47	3,59	5,36
Median	4,00	1,00	4,00	4,50	3,00
Q25	-1,00	-3,00	2,00	2,00	1,50
Q75	6,00	4,25	6,00	6,00	6,50
Min	-14	-14	-10	-3	-10
Max	15	10	15	10	15

Figure 28 Change of hand grip strength (V3-V1), DaN



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences ($p<0.05$), power 0.63 was achieved only by the Equal-Variance T-Test. Other methods showed a result of about 0.05-0.06, indicating a trend.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Conclusion on the section

The limited recognition of the reliability of differences between the groups was, in our opinion, due to the relatively short period of rehabilitation after which the control measurement was carried out (30 days) and a significant spread of data indicating a difference in the dynamics of physical recovery of patients. At the same time, the dynamics and trend look quite obvious, indicating the benefits of nutritional support. Differences in the subgroups of the study group could not be detected, since all patients in the study group received the same nutritional support by the date of the 3rd visit.

15.7. Quality of life scale EQ-5D-3L

The quality of life scale was filled in by the researchers from the patient's words at visits 1, 3 and 5 (by phone). To assess changes in the indicator, the difference between the results at B5 and B1 was calculated. For indexing, the parameters of the hybrid model for the Russian Federation were used according to Omelyanovskiy V, Musina N, Ratushnyak S, Bezdenezhnykh T, Fediaeva V, Roudijk B, Purba FD. Valuation of the EQ-5D-3L in Russia. Qual Life Res. 2021 Jul;30(7):1997-2007. doi: 10.1007/s11136-021-02804-6. Epub 2021 Mar 13. PMID: 33713323; PMCID: PMC8233249.

The following results were obtained.

Table 38 EQ-5D-3L index, means

	V1	V3	V5
All patients	-0,01	0,62	0,79
Control group	0,01	0,53	0,66
Study group All	-0,02	0,66	0,86
Subgroup 1 (full)	-0,08	0,63	0,88
Subgroup 2 (part)	0,06	0,70	0,83

Figure 29 EQ-5D-3L index, means

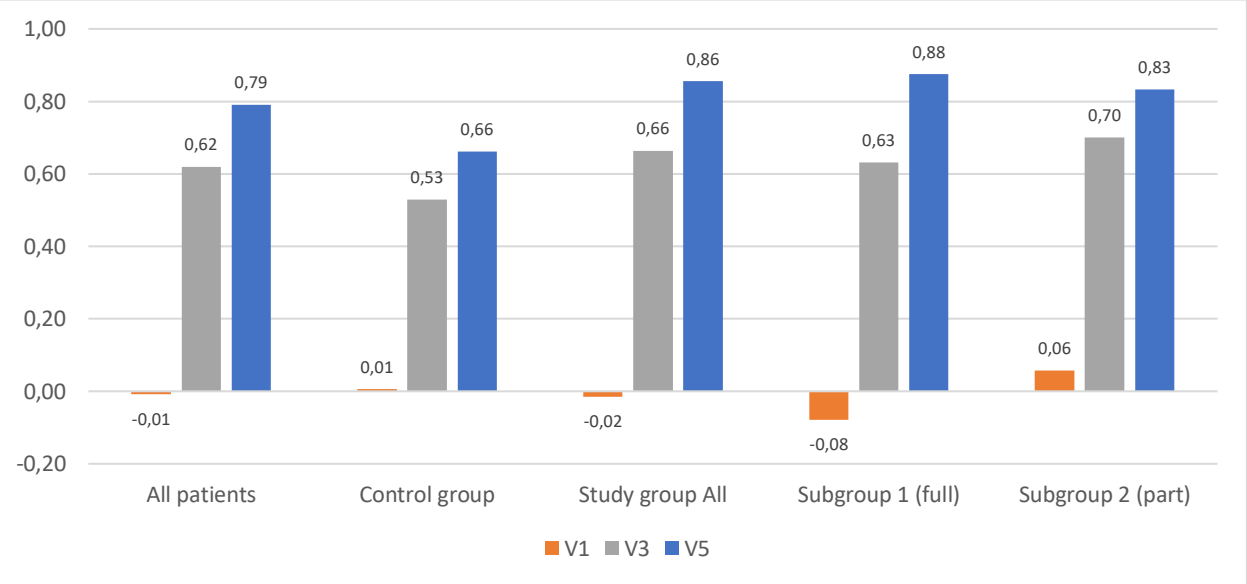
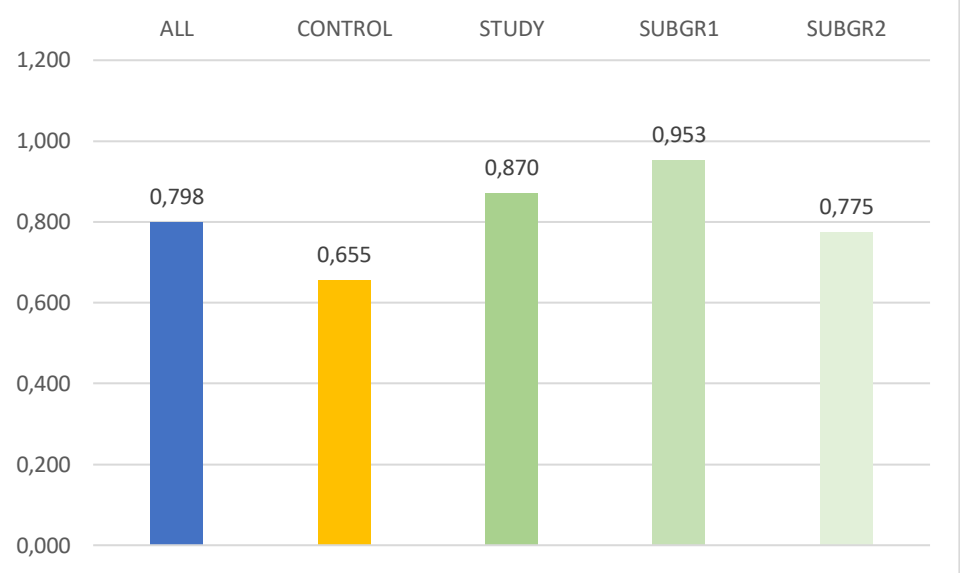


Table 39 Change of EQ-5D-3L index (V5-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	0,798	0,655	0,870	0,953	0,775
SD	0,471	0,415	0,485	0,486	0,474
Median	0,849	0,741	0,957	1,040	0,905
Q25	0,382	0,236	0,539	0,731	0,203
Q75	1,238	0,870	1,304	1,395	1,091
Min	-0,066	0,041	-0,066	-0,066	0,000
Max	1,502	1,395	1,502	1,502	1,502

Figure 30 Change of EQ-5D-3L index (V5-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.54.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Table 40 VAS scale of EQ-5D-3L, means

	V1	V3	V5
All patients	33,33	54,78	67,11
Control group	33,83	51,00	58,17
Study group All	33,08	56,67	71,58
Subgroup 1 (full)	29,84	54,22	72,03
Subgroup 2 (part)	36,79	59,46	71,07

Figure 31 VAS scale of EQ-5D-3L, means

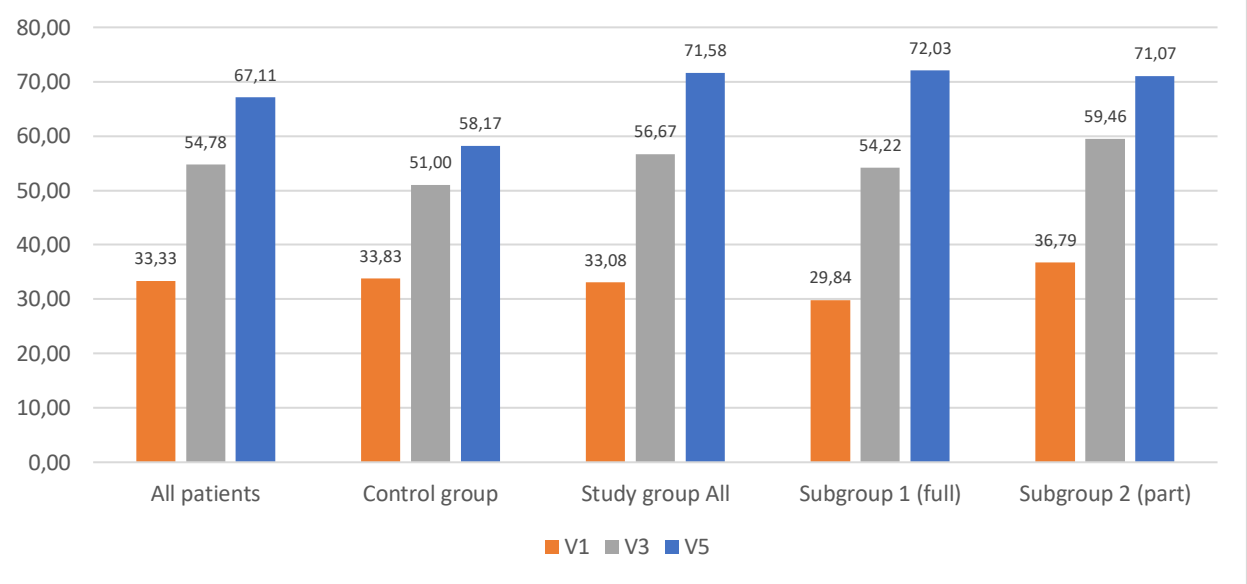
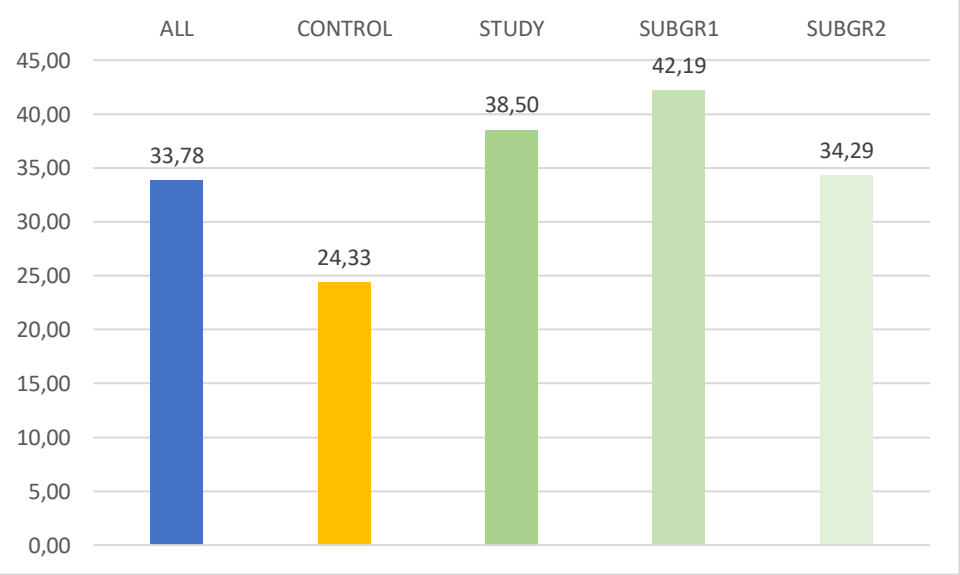


Table 41 Change of VAS scale of EQ-5D-3L (V5-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	33,8	24,3	38,5	42,2	34,3
SD	20,5	18,4	20,0	20,8	18,4
Median	30,0	22,5	40,0	40,0	30,0
Q25	20,0	12,5	30,0	30,0	23,8
Q75	50,0	38,8	55,0	56,3	45,0
Min	-20,0	-15,0	-20,0	-20,0	0,0
Max	75,0	55,0	75,0	75,0	70,0

Figure 32 Change of VAS scale of EQ-5D-3L (V5-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. All methods achieved statistical significance of differences ($p<0.05$), power 0.90.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Conclusion for the section

The quality of life of patients increased in both groups with a faster increase in the study group. The differences between the groups are reliable, indicating the benefits of nutritional support. Differences are also observed in the subgroups of the study group, with an advantage in the subgroup of longer-term nutritional support. However, statistical significance of differences in subgroups was not achieved.

15.8. MASA The Mann Assessment of Swallowing Ability

The MASA scale questions were answered by the researchers at visits 1 and 3. Due to the complexity of filling it out and the impossibility of filling it out over the phone, data were not filled out at visit 5. To assess the effectiveness, the difference between the values at V3 and V1 was calculated. The following results were obtained.

Table 42 MASA index, means

	V1	V3
All patients	154,10	173,47
Control group	156,37	171,70
Study group All	152,97	174,35
Subgroup 1 (full)	154,97	174,41
Subgroup 2 (part)	150,68	174,29

Figure 33 MASA index, means

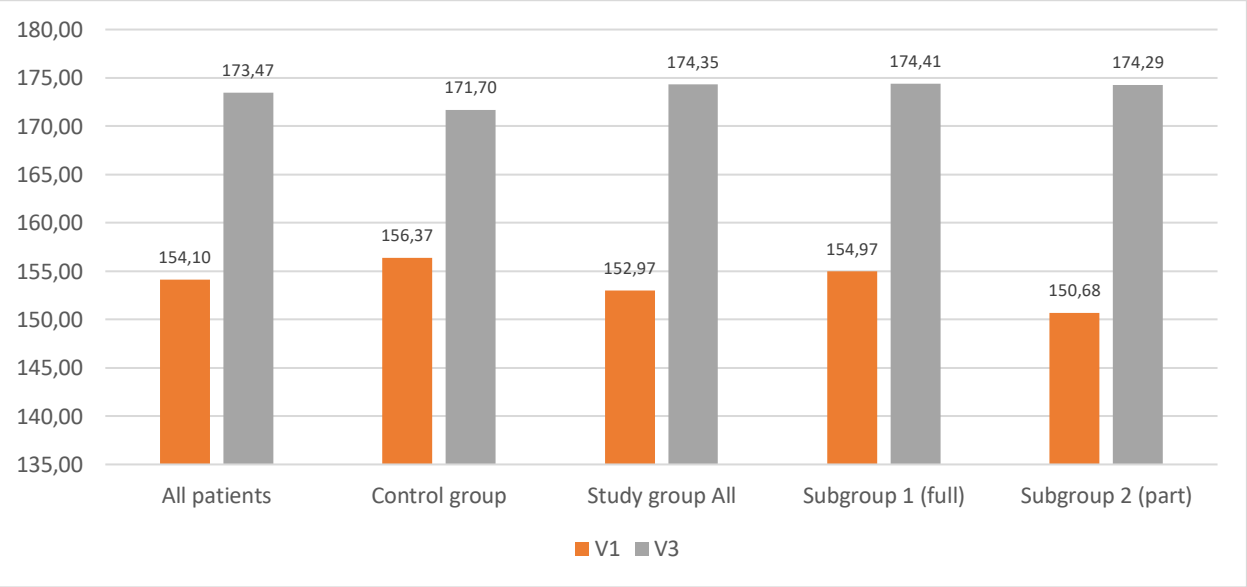
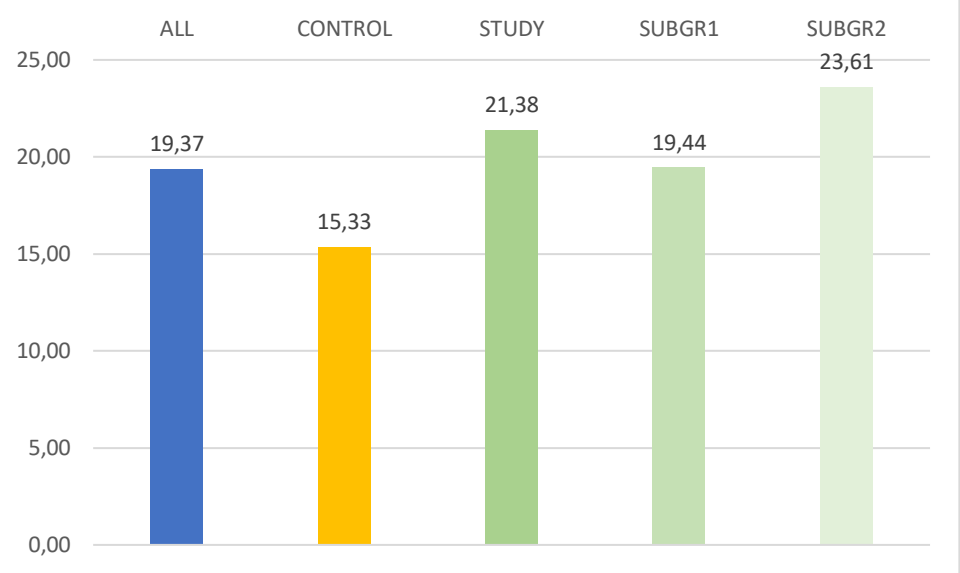


Table 43 Change of MASA index (V3-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	19,4	15,3	21,4	19,4	23,6
SD	13,3	15,5	11,6	9,6	13,4
Median	20,0	15,0	21,5	21,5	21,5
Q25	10,0	5,8	12,0	11,8	14,3
Q75	28,0	22,8	29,0	27,3	29,3
Min	-24,0	-24,0	2,0	2,0	6,0
Max	67,0	51,0	67,0	35,0	67,0

Figure 34 Change of MASA index (V3-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences ($p<0.05$), power 0.54 was achieved using the Equal-Variance T-Test and Mann-Whitney U or Wilcoxon Rank-Sum Test.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

The MASA scale also allows determining the degree of dysphagia and aspiration based on validated intervals of numerical values of the index. The following results were obtained.

Table 44 MASA scale of dysphagia and aspiration (% of patients)

Group / subgroup	Level	DYSPHAGIA				ASPIRATION			
		V1		V3		V1		V3	
		N	%	N	%	N	%	N	%
ALL PATIENTS	No pathology detected	7	7,78%	40	44,44%	26	28,89%	58	64,44%
	Mild	24	26,67%	18	20,00%	33	36,67%	27	30,00%
	Moderate	35	38,89%	30	33,33%	7	7,78%	3	3,33%
	Severe	24	26,67%	2	2,22%	24	26,67%	2	2,22%
CONTROL GROUP	No pathology detected	6	20,00%	15	50,00%	13	43,33%	18	60,00%
	Mild	8	26,67%	3	10,00%	8	26,67%	8	26,67%
	Moderate	8	26,67%	10	33,33%	1	3,33%	2	6,67%
	Severe	8	26,67%	2	6,67%	8	26,67%	2	6,67%
STUDY GROUP	No pathology detected	1	1,67%	25	41,67%	13	21,67%	40	66,67%
	Mild	16	26,67%	15	25,00%	25	41,67%	19	31,67%
	Moderate	27	45,00%	20	33,33%	6	10,00%	1	1,67%
	Severe	16	26,67%	0	0,00%	16	26,67%	0	0,00%
SUBGROUP 1 (FULL)	No pathology detected	1	3,13%	14	43,75%	6	18,75%	22	68,75%
	Mild	9	28,13%	8	25,00%	16	50,00%	9	28,13%

Group / subgroup	Level	DYSPHAGIA				ASPIRATION			
		V1		V3		V1		V3	
		N	%	N	%	N	%	N	%
	Moderate	14	43,75%	10	31,25%	2	6,25%	1	3,13%
	Severe	8	25,00%	0	0,00%	8	25,00%	0	0,00%
SUBGROUP 2 (PART)	No pathology detected	0	0,00%	11	39,29%	7	25,00%	18	64,29%
	Mild	7	25,00%	7	25,00%	9	32,14%	10	35,71%
	Moderate	13	46,43%	10	35,71%	4	14,29%	0	0,00%
	Severe	8	28,57%	0	0,00%	8	28,57%	0	0,00%

To conduct statistical analysis at binary levels, levels were coded according to scales.:

	Initial level	**Deviation detected**
Dysphagia MASA	No pathology detected	No
Dysphagia MASA	Mild	No
Dysphagia MASA	Moderate	Yes
Dysphagia MASA	Severe	Yes
Aspiration MASA	No pathology detected	No
Aspiration MASA	Mild	No
Aspiration MASA	Moderate	Yes
Aspiration MASA	Severe	Yes

The analysis was performed using the two-tailed Wald Chi-Square method. It was shown that the difference between the groups reached statistical significance by V3 only for the categorical indicator "Aspiration" ($p<0.05$). Significance was not achieved for the indicator "Dysphagia". Differences between the subgroups of the study group were not statistically confirmed by visit 3 ($p>0.05$).

Conclusion on the section

Due to its complexity to fill out and the impossibility of using the scale without direct contact between the doctor and the patient, the MASA scale was filled out only at visits 1 and 3, i.e. during hospital observation. It was shown that by V3, there were preferential improvements in the study group for the total score index of the scale and for the categorical variable "Aspiration". Differences between the subgroups of the study group were not confirmed.

15.9. Bartell index

Due to its simplicity, the Barthel scale was completed by the investigators at visits 1, 2, 3, and 5 (by telephone). To assess differences, the difference between the scores at V3 and V1, and V5 and V1, was calculated. The following results were obtained.

Table 45 Bartell index, means

	V1	V2	V3	V5
All patients	22,94	45,61	65,89	83,61
Control group	25,00	40,83	60,00	75,67
Study group All	21,92	48,00	68,83	87,58
Subgroup 1 (full)	22,03	46,88	67,50	87,97
Subgroup 2 (part)	21,79	49,29	70,36	87,14

Figure 35 Bartell index, means

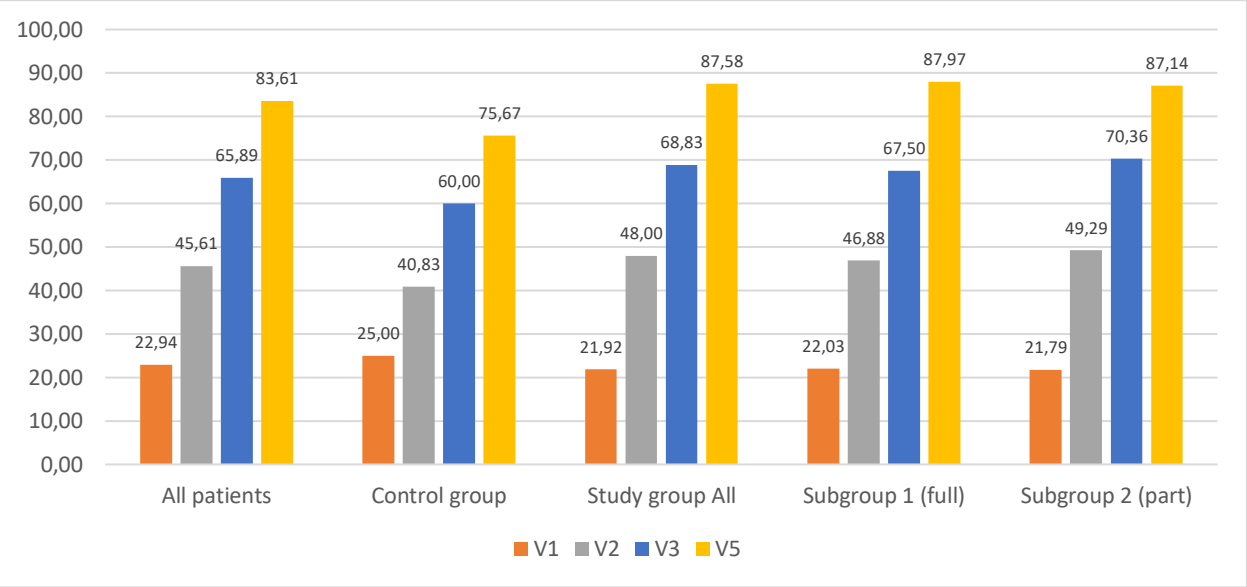
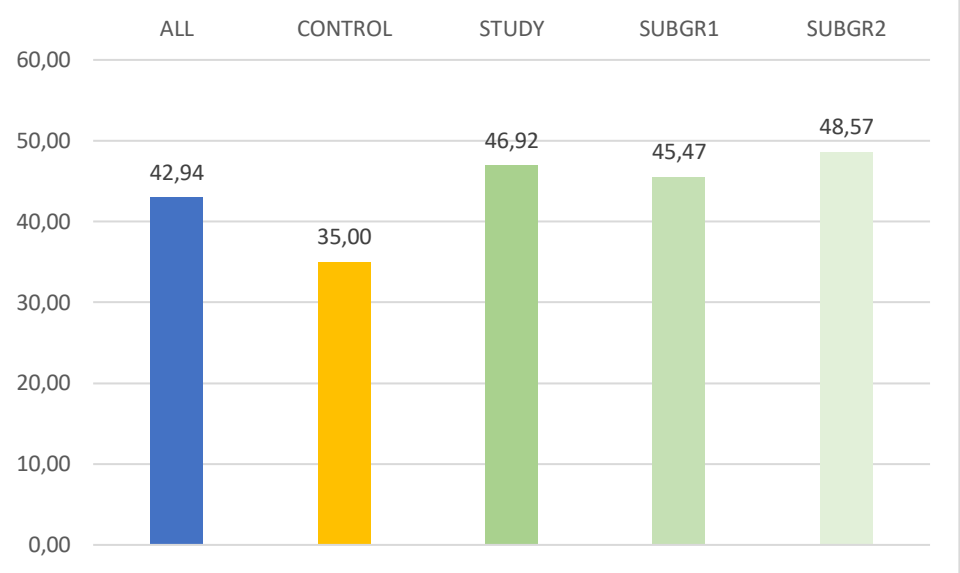


Table 46 Change of Bartell index (V3-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	42,9	35,0	46,9	45,5	48,6
SD	25,9	22,8	26,5	29,1	23,8
Median	45,0	37,5	47,5	47,5	47,5
Q25	20,0	16,3	25,0	20,0	28,8
Q75	65,0	52,5	65,0	75,0	65,0
Min	-10,0	-10,0	-10,0	-10,0	0,0
Max	100,0	75,0	100,0	90,0	100,0

Figure 36 Change of Bartell index (V3-V1)



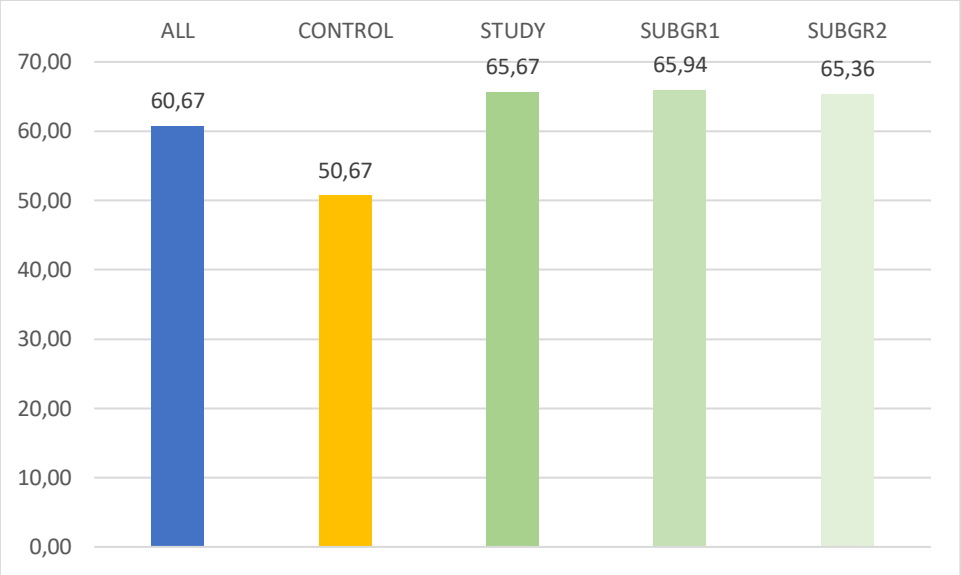
Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences ($p<0.05$), power 0.55 was achieved by all methods.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

Table 47 Change of Bartell index (V5-V1)

	All patients	Control Group	Study Group		
			All Group	Subgroup 1 (full)	Subgroup 2 (part)
n	90	30	60	32	28
Mean	60,7	50,7	65,7	65,9	65,4
SD	25,3	23,5	24,9	25,5	24,5
Median	62,5	50,0	70,0	70,0	65,0
Q25	41,3	40,0	48,8	45,0	50,0
Q75	83,8	68,8	90,0	90,0	86,3
Min	0,0	5,0	0,0	15,0	0,0
Max	100,0	90,0	100,0	100,0	100,0

Figure 37 Change of the Bartell index (V5-V1)



Differences between groups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences ($p<0.05$), power 0.78 was achieved by all methods.

Differences between subgroups were tested using the Equal-Variance T-Test, Aspin-Welch Unequal-Variance T-Test, Mann-Whitney U or Wilcoxon Rank-Sum Test. Statistical significance of differences was not achieved ($p>0.05$).

The Barthel scale also allows to determine the degree of patient dependence on external assistance based on validated intervals of numerical values of the index. The following results were obtained.

Table 48 Level of patient dependence by the Bartell scale (V5-V1)

Group / Subgroup	Dependence level	PROPORTION OF PATIENTS (%)							
		V1		V2		V3		V5	
		N	%	N	%	N	%	N	%
ALL PATIENTS	No	1	1,11%	2	2,22%	7	7,78%	22	24,44%
	Mild	0	0,00%	1	1,11%	2	2,22%	8	8,89%
	Moderate	1	1,11%	24	26,67%	48	53,33%	48	53,33%
	Severe	32	35,56%	36	40,00%	26	28,89%	10	11,11%
	Full	56	62,22%	27	30,00%	7	7,78%	2	2,22%
CONTROL GROUP	No	0	0,00%	1	3,33%	0	0,00%	0	0,00%
	Mild	0	0,00%	0	0,00%	1	3,33%	2	6,67%
	Moderate	0	0,00%	5	16,67%	16	53,33%	22	73,33%
	Severe	12	40,00%	13	43,33%	9	30,00%	4	13,33%
	Full	18	60,00%	11	36,67%	4	13,33%	2	6,67%
STUDY GROUP	No	1	1,67%	1	1,67%	7	11,67%	22	36,67%
	Mild	0	0,00%	1	1,67%	1	1,67%	6	10,00%
	Moderate	1	1,67%	19	31,67%	32	53,33%	26	43,33%
	Severe	20	33,33%	23	38,33%	17	28,33%	6	10,00%
	Full	38	63,33%	16	26,67%	3	5,00%	0	0,00%

Group / Subgroup	Dependence level	PROPORTION OF PATIENTS (%)							
		V1		V2		V3		V5	
		N	%	N	%	N	%	N	%
SUBGROUP 1 (FULL)	No	0	0,00%	0	0,00%	4	12,50%	14	43,75%
	Mild	0	0,00%	1	3,13%	1	3,13%	3	9,38%
	Moderate	1	3,13%	11	34,38%	15	46,88%	12	37,50%
	Severe	11	34,38%	11	34,38%	9	28,13%	3	9,38%
	Full	20	62,50%	9	28,13%	3	9,38%	0	0,00%
SUBGROUP 2 (PART)	No	1	3,57%	1	3,57%	3	10,71%	8	28,57%
	Mild	0	0,00%	0	0,00%	0	0,00%	3	10,71%
	Moderate	0	0,00%	8	28,57%	17	60,71%	14	50,00%
	Severe	9	32,14%	12	42,86%	8	28,57%	3	10,71%
	Full	18	64,29%	7	25,00%	0	0,00%	0	0,00%

To perform statistical analysis at binary levels, levels were coded according to scales:

	Initial level	**Deviation detected**
Dependence by Bartell scale	No	No
Dependence by Bartell scale	Mild	No
Dependence by Bartell scale	Moderate	Yes
Dependence by Bartell scale	Severe	Yes
Dependence by Bartell scale	Full	Yes

The analysis was performed using two-tailed Pearson's Chi-Square, Yates' Cont. Correction and Fisher's Exact methods. It was shown that the differences between the groups reached statistical significance only at B5, 90 days after the start of nutritional support ($p<0.05$). Differences between the subgroups of the study group were not statistically confirmed ($p>0.05$).

Figure 38 Proportion of patients with "dependence" improvement (Bartell scale) by visit 3 in groups

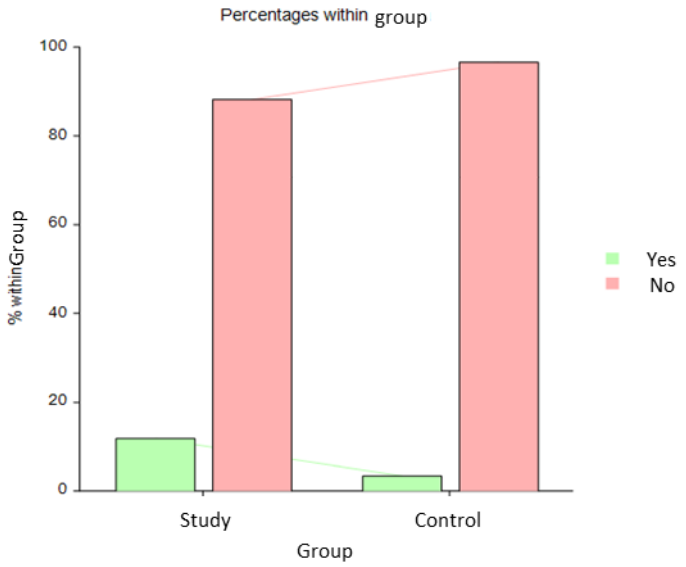
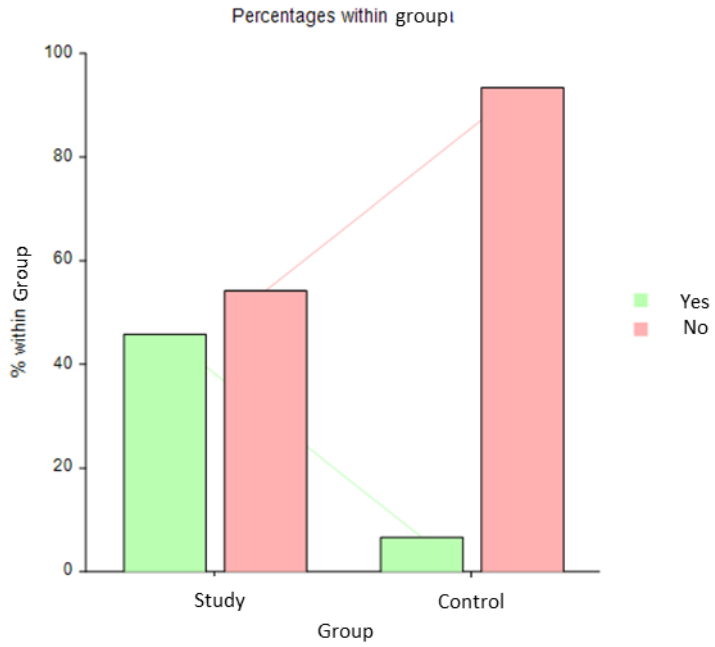


Figure 39 Proportion of patients with "dependence" improvement (Bartell scale) by visit 5 in groups



Conclusion on the section

Improvement of the patient's dependence indicators according to the Barthel scale were observed in both groups. However, in the study group, the dynamics of improvement demonstrated an advance by the 3rd visit according to the total index of the scale and by the 5th visit according to the categorical indicator (dependence category).

Reliable differences in the subgroups of the study group were not found.

15.10. Appetite and available feeding

As an additional observational measure, the patients' available (given their condition) food and appetite were monitored during visits 1, 2, 3, 4 and 5. The following results were obtained.

Table 49 Distribution of patient nutrition intensity during visits (%)

Group / Subgroup	Nutrition	PROPORTION OF PATIENTS (%)				
		B1	B2	B3	B4	B5
ALL PATIENTS	Three times a day and more	72,22%	81,82%	98,89%	98,89%	98,89%
	Two times a day	1,11%	0,00%	0,00%	1,11%	1,11%
	One time a day	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	18,18%	1,11%	0,00%	0,00%
CONTROL GROUP	Three times a day and more	73,33%	72,41%	96,67%	100,00%	100,00%
	Two times a day	0,00%	0,00%	0,00%	0,00%	0,00%
	One time a day	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	27,59%	3,33%	0,00%	0,00%
STUDY GROUP	Three times a day and more	71,67%	86,44%	100,00%	98,33%	98,33%
	Two times a day	1,67%	0,00%	0,00%	1,67%	1,67%
	One time a day	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	13,56%	0,00%	0,00%	0,00%
SUBGROUP 1 (FULL)	Three times a day and more	75,00%	84,38%	100,00%	96,88%	100,00%
	Two times a day	3,13%	0,00%	0,00%	3,13%	0,00%
	One time a day	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	21,88%	15,63%	0,00%	0,00%	0,00%
SUBGROUP 2 (PART)	Three times a day and more	67,86%	88,89%	100,00%	100,00%	96,43%
	Two times a day	0,00%	0,00%	0,00%	0,00%	3,57%
	One time a day	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	32,14%	11,11%	0,00%	0,00%	0,00%

Table 50 Distribution of patients' appetite by visits (%)

Group / Subgroup	Appetite	PROPORTION OF PATIENTS (%)				
		B1	B2	B3	B4	B5
ALL PATIENTS	Asks for more	0,00%	0,00%	4,44%	5,56%	4,44%
	Good appetite (eats the whole portion)	13,33%	35,23%	41,11%	45,56%	40,00%
	Average appetite (about half a portion)	38,89%	34,09%	34,44%	36,67%	48,89%
	Poor appetite (about a quarter of a serving)	21,11%	12,50%	18,89%	12,22%	6,67%
	Refuses food	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	18,18%	1,11%	0,00%	0,00%
CONTROL GROUP	Asks for more	0,00%	0,00%	0,00%	3,33%	0,00%
	Good appetite (eats the whole portion)	6,67%	24,14%	36,67%	43,33%	30,00%
	Average appetite (about half a portion)	43,33%	34,48%	36,67%	33,33%	56,67%

Group / Subgroup	Appetite	PROPORTION OF PATIENTS (%)				
		B1	B2	B3	B4	B5
	Poor appetite (about a quarter of a serving)	23,33%	13,79%	23,33%	20,00%	13,33%
	Refuses food	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	27,59%	3,33%	0,00%	0,00%
STUDY GROUP	Asks for more	0,00%	0,00%	6,67%	6,67%	6,67%
	Good appetite (eats the whole portion)	16,67%	40,68%	43,33%	46,67%	45,00%
	Average appetite (about half a portion)	36,67%	33,90%	33,33%	38,33%	45,00%
	Poor appetite (about a quarter of a serving)	20,00%	11,86%	16,67%	8,33%	3,33%
	Refuses food	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	26,67%	13,56%	0,00%	0,00%	0,00%
SUBGROUP 1 (FULL)	Asks for more	0,00%	0,00%	6,25%	6,25%	9,38%
	Good appetite (eats the whole portion)	21,88%	43,75%	43,75%	53,13%	40,63%
	Average appetite (about half a portion)	31,25%	31,25%	37,50%	34,38%	50,00%
	Poor appetite (about a quarter of a serving)	25,00%	9,38%	12,50%	6,25%	0,00%
	Refuses food	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	21,88%	15,63%	0,00%	0,00%	0,00%
SUBGROUP 2 (PART)	Asks for more	0,00%	0,00%	7,14%	7,14%	3,57%
	Good appetite (eats the whole portion)	10,71%	37,04%	42,86%	39,29%	50,00%
	Average appetite (about half a portion)	42,86%	37,04%	28,57%	42,86%	39,29%
	Poor appetite (about a quarter of a serving)	14,29%	14,81%	21,43%	10,71%	7,14%
	Refuses food	0,00%	0,00%	0,00%	0,00%	0,00%
	Not applicable (tube or parenteral nutrition)	32,14%	11,11%	0,00%	0,00%	0,00%

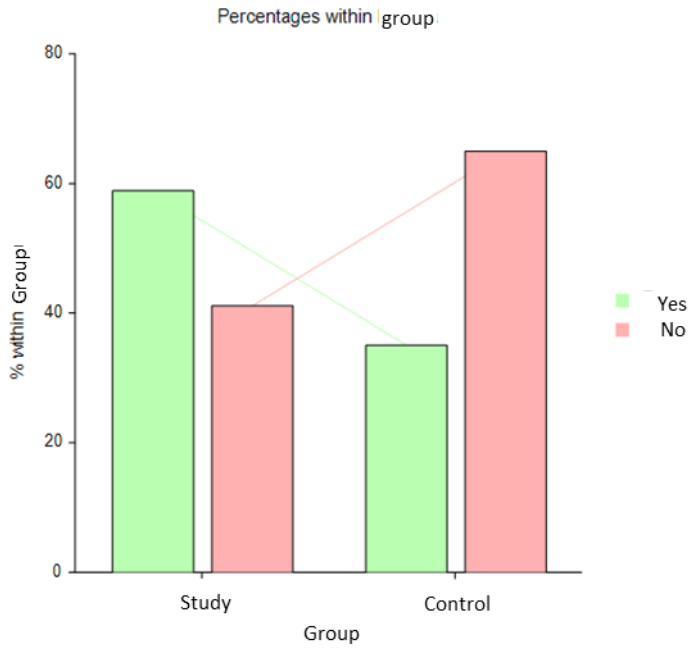
To perform statistical analysis at binary levels, levels were coded according to scales

	Initial level	**Deviation detected**
Appetite	Asks for more	No
Appetite	Good appetite (eats the whole portion)	No
Appetite	Average appetite (about half a portion)	Yes
Appetite	Poor appetite (about a quarter of a serving)	Yes
Appetite	Refuses food	Yes

Conclusion on the section

During the analysis, no statistically significant differences in appetite changes were found in either groups or subgroups of the study group. At the same time, it should be noted that there is a certain tendency for appetite to improve predominantly in the study group by B5 after 90 days of observation (p=0.09, Wald Chi-Square method)

Figure 40 Proportion of patients with improved appetite by visit 5 by groups



16. Safety

The study included 90 patients. No adverse reaction reports related to the use of nutritional support products were generated during the study. No patients died during the study.

However, there were 4 adverse event reports generated during the study, including:

Table 51 Listing of adverse event reports

Patient ID	Group	Adverse event
11226	Study	COVID-19
11226	Study	Pulmonary embolism
11226	Study	Acute thrombosis of the left popliteal vein
11226	Study	Hospital-acquired bilateral polysegmental pneumonia of congestive nature, DN0

The dosage of nutritional support was not changed. Patient 11226 survived and successfully completed the study.

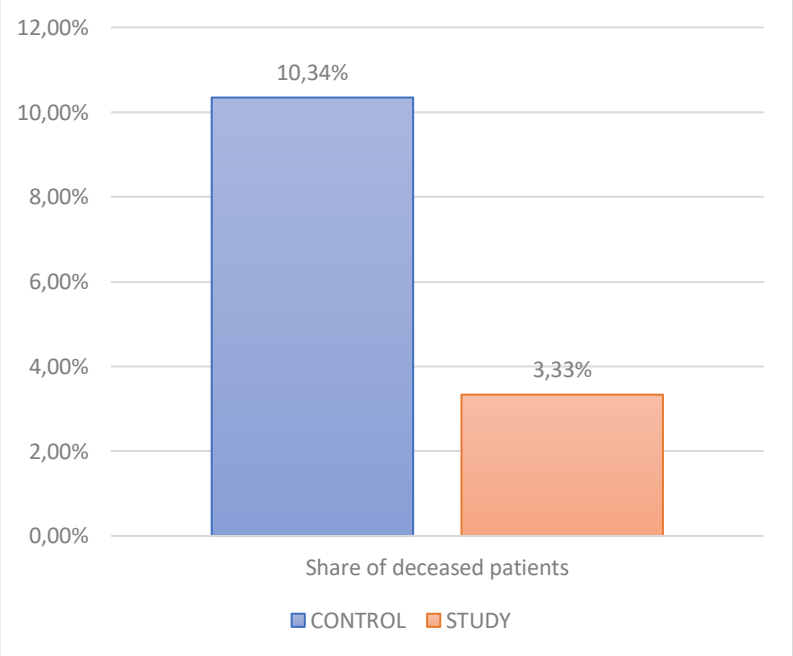
17. Additional data

At the request of the Study Organizer, in the period from 27.01 to 03.02.2025, approximately 2 months after the last visit of the last patient, the research physicians conducted a telephone survey of patients/relatives of patients in order to determine the state of health and the presence of recurrent strokes. The following data were obtained:

Table 52 Information on patient deaths after completion of the study

	N	%
ALL PATIENTS	89	100,00%
Alive	84	94,38%
Deceased	5	5,62%
CONTROL GROUP	29	100,00%
Alive	26	89,66%
Deceased	3	10,34%
STUDY GROUP	60	100,00%
Alive	58	96,67%
Deceased	2	3,33%
SUBGROUP 1 (FULL)	32	100,00%
Alive	30	93,75%
Deceased	2	6,25%
SUBGROUP 2 (PART)	28	100,00%
Alive	28	100,00%
Deceased	0	0,00%

Figure 41 Proportion of deceased patients after completion of the study (%) by group

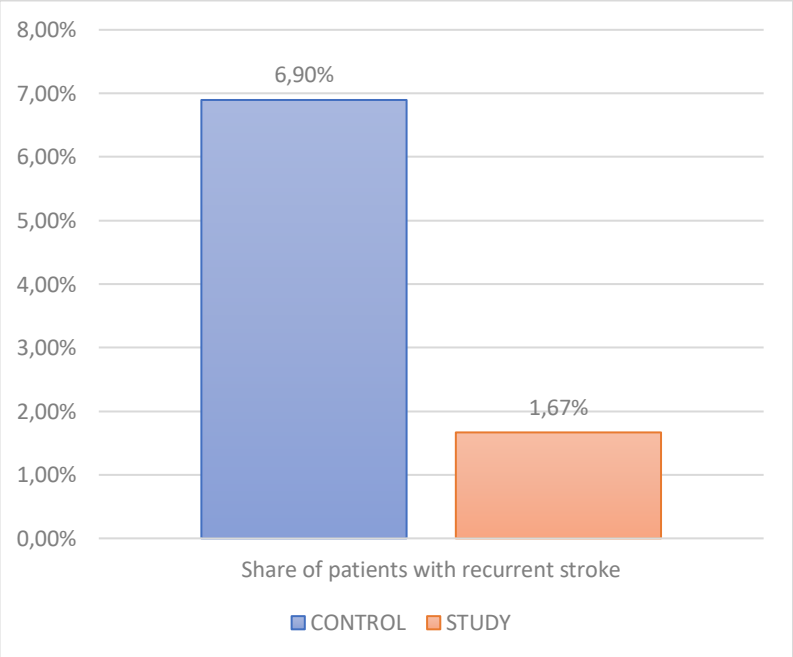


Statistical testing of differences in the proportions of deceased patients by groups and subgroups was performed using the Chi-squared test; the significance of differences between groups and between subgroups was not achieved (p>0.05).

Table 53 Information on recurrent strokes in patients after completion of the study

	N	%
ALL PATIENTS	89	100,00%
Recurrent stroke	3	3,37%
No	86	96,63%
CONTROL GROUP	29	100,00%
Recurrent stroke	2	6,90%
No	27	93,10%
STUDY GROUP	60	100,00%
Recurrent stroke	1	1,67%
No	59	98,33%
SUBGROUP 1 (FULL)	32	100,00%
Recurrent stroke	1	3,13%
No	31	96,88%
SUBGROUP 2 (PART)	28	100,00%
Recurrent stroke	0	0,00%
No	28	100,00%

Figure 42 Proportion of patients who had a recurrent stroke after completion of the study (%) by group



Statistical testing of differences in the proportions of patients who suffered a recurrent stroke by groups and subgroups was performed using the Chi-squared test; the significance of differences between groups and between subgroups was not achieved (p>0.05).

Physicians were also asked about the tube feeding products used and the diet during the hospital stay of the control group patients, and patients/relatives were asked about the products and diet of home nutrition in the control group patients and subgroup 2 of the study group. The table below lists the types of diet/products in descending order of frequency of mention in the questionnaire.

Table 54 Frequency of mentioning food products in the control group

	N
Tube feeding	
Fresubin (Fresenius)	11
Blended food (gentle diet)	11
Nutrition, nutritional support	
Maloezhka (Abbott)	14
Basic diet, home or hospital	13
Nutrien (Infaprim)	5
Baby food (random)	5
Nutricomp (B. Brown)	3
Whey protein (Scitech)	1
Optimum (Nestle)	1
Thickeners	
Resource Tiken Up Klia (Nestlé)	1
Nutilis (Nutricia)	1

18. Discussion

Malnutrition is associated with increased mortality and poor functional recovery after stroke. Most stroke rehabilitation guidelines strongly recommend nutritional screening to identify nutritional malnutrition in patients.

Some studies have suggested that routine nutritional support for stroke patients, regardless of their nutritional status, does not correlate with improved functional outcomes.

The FOOD trial included three well-designed, large randomized controlled trials of nutritional support for stroke patients [5, 6, 7]. As mentioned above, the FOOD trial provided robust evidence that nutritional status after stroke is associated with long-term outcomes, supporting the recommendation of nutritional supplementation for stroke patients with malnutrition and those at risk for malnutrition. However, routine oral nutrition for stroke patients in hospital was not found to correlate with improved functional outcomes 6 months after stroke. Additionally, routine oral feeding in non-malnourished patients has been found to cause hyperglycemia [7]. A 2012 Cochrane review reported no significant differences in mortality between the use of enteral nutritional supplements in patients with acute and subacute stroke [8].

However, the ESPEN Guideline Clinical Nutrition in Neurology (2018) does not recommend routine use in patients with acute stroke without dysphagia who are adequately fed on admission (Grade of Recommendation: GPP - strong consensus (100% agreement)). For patients with stroke who are able to feed themselves and who are identified as malnourished or at risk of malnutrition, oral nutritional supplements (ONS) are recommended (Grade of Recommendation: GPP - strong consensus (100% agreement)).

Some studies have provided evidence for the effectiveness of nutritional support in patients after stroke. For example, Ha et al. [8] analyzed the effectiveness of individualized nutritional interventions compared with usual care in patients with acute stroke. Patients who received individualized nutritional support treatment showed significantly less weight loss, higher quality of life, and handgrip strength.

Another recent study noted the value of individualized nutritional support during a stroke rehabilitation program [9]. Among 454 stroke patients admitted to rehabilitation units, nutritional management (high-calorie, high-protein diet for malnourished patients and calorie restriction with appropriate protein diet for obese patients), nutritional screening, and assessment were provided. Multivariate analysis showed that nutritional support was associated with improved skeletal muscle mass, motor function, and dysphagia, as well as a reduction in the length of hospital stay after stroke. The CENTRIS study included patients with ischemic stroke in a moderate state with dysphagia. The observation period covered the hospital stage, including hospital rehabilitation (approx. up to 30 days) and the outpatient period (60 days), during which the patients stayed at home. All patients were randomly divided into two groups. Patients in the control group (N=30) received a standard hospital diet during the hospital stage and a usual home diet during the outpatient stage. All patients in the study group (N=60) received nutritional support with NUTRIDRINK or NUTRISON PROTEIN ADVANCE products, as well as the thickener NUTILIS CLEAR as needed during the hospital stage. Upon discharge, patients in the study group were randomly divided into two subgroups. One subgroup (N=32) received nutritional support with the same products at home. The second subgroup, after discharge, switched to a home-based diet (with the addition of NUTILIS CLEAR if dysphagia was present).

Compelling evidence of the benefit of nutritional support when comparing between groups (study group vs control) was obtained for the following variables:

- Estimated weight_B5-B1
- Measured weight_B5-B1
- EAT-10_B5-B1
- Rivermead_B5-B1
- Total protein_B5-B1
- Albumin_B5-B1
- Abs. lymphocyte_B5-B1

- PNI_B3-B1
- PNI_B5-B1
- Dynamometry_B3-B1
- EQ5D3LTTO_B5-B1
- EQ5D3LVAS_B5-B1
- MASA_B3-B1
- Barthel index_B3-B1
- Barthel index_B5-B1

And for categorical variables:

- Aspiration MASA_B1-B3
- Dependence on the scale Bartel_B1-B5

For the indicator SRM, statistical significance of differences was not achieved, in our opinion, due to the wide scale step and the use of the scale in the official reporting of the medical organization as the basis for transferring the patient or his discharge.

For Serum Creatinine, contradictory results were obtained.

In the subgroups of the study group, statistically significant differences were achieved only for the following parameters:

- Rivermead_B5-B1
- Abs.lymphocyte_B5-B1
- PNI_B5-B1

However, for all variables in the subgroups, logical differences were observed with the advantage of full nutritional support, which, apparently, required a larger sample of observations.

Thus, based on the results of the CENTRIS study, it can be argued that the hypothesis of the advantages of nutritional support for patients after moderate ischemic stroke with dysphagia is confirmed. Most parameters demonstrated the significance of long-term 90-day nutritional support using specialized enteral nutrition products (tube, sipping and thickeners), which included in this study: Nutrison Protein Advance, Nutridrink, Nutrison Advanced Nutridrink and Nutilis Clear. The absence of statistically significant differences in the impact of nutritional support at the outpatient stage for some measured indicators was associated, in our opinion, with an insufficient sample against the background of improved prognostic nutritional status at the hospital stage in all patients of the study group.

19. REFERENCES

1. Метаболический мониторинг и нутритивная поддержка при проведении длительной искусственной вентиляции легких. Методические рекомендации, 2021. РФ https://www.mediasphera.ru/issues/anesteziologiya-i-reanimatologiya/2022/5/1020175632022051006

2. ESPEN practical and partially revised guideline: Clinical nutrition in the intensive care unit, 2023. https://www.espen.org/files/ESPEN-Guidelines/ESPEN_practical_and_partially_revised_guideline_Clinical_nutrition_in_the_intensive_care_unit.pdf

3. ESPEN guideline on hospital nutrition, 2021, ttps://www.espen.org/files/ESPEN-Guidelines/ESPEN_guideline_on_hospital_nutrition.pdf

4. ESPEN practical guideline: Home enteral nutrition, 2022 https://www.espen.org/files/ESPEN-Guidelines/ESPEN_practical_guideline_Home_enteral_nutrition.pdfDennis M, Lewis S, Cranswick G, Forbes J FOOD Trial Collaboration. FOOD: a multicentre randomised trial evaluating feeding policies in patients admitted to hospital with a recent stroke. Health Technol Assess. 2006;10:iii–iiv. ix–x, 1–120. doi: 10.3310/hta10020.

5. Dennis MS, Lewis SC, Warlow C FOOD Trial Collaboration. Effect of timing and method of enteral tube feeding for dysphagic stroke patients (FOOD): a multicentre randomised controlled trial. Lancet. 2005;365:764–772. doi: 10.1016/S0140-6736(05)17983-5.

6. Dennis MS, Lewis SC, Warlow C FOOD Trial Collaboration. Routine oral nutritional supplementation for stroke patients in hospital (FOOD): a multicentre randomised controlled trial. Lancet. 2005;365:755–763. doi: 10.1016/S0140-6736(05)17982-3.

7. Geeganage C, Beavan J, Ellender S, Bath PM. Interventions for dysphagia and nutritional support in acute and subacute stroke. Cochrane Database Syst Rev. 2012;10:CD000323. doi: 10.1002/14651858.CD000323.pub2.

8. Ha L, Hauge T, Spenning AB, Iversen PO. Individual, nutritional support prevents undernutrition, increases muscle strength and improves QoL among elderly at nutritional risk hospitalized for acute stroke: a randomized, controlled trial. Clin Nutr. 2010;29:567–573. doi: 10.1016/j.clnu.2010.01.011.

9. Shimazu S, Yoshimura Y, Kudo M, Nagano F, Bise T, Shiraishi A, Sunahara T. Frequent and personalized nutritional support leads to improved nutritional status, activities of daily living, and dysphagia after stroke. Nutrition. 2021;83:111091. doi: 10.1016/j.nut.2020.111091