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Case Report

Nutritional Counselling and Weight Reduction After Living-Donor Liver Transplantation: A Descriptive Case Report

Consejería nutricional y reducción de peso tras trasplante hepático de donante vivo: reporte descriptivo de caso

Urata Rexhepi[1,2]; Nderim Rexhepi[1,2]; Agron M. Rexhepi[1,2]*
Email addresses: Urata Rexhepi, urattaav@outlook.com; Nderim Rexhepi, nderimarexhepi@gmail.com; Agron M. Rexhepi, agronmrexhepi@gmail.com.
[1]Institute of Sports Anthropology, Prishtina, Kosovo; [2]QSFN Corpore Sano, Prishtina, Kosovo.

***Corresponding author:** Agron M. Rexhepi, 21 Sali Butka Street, 10000 Prishtina, Kosovo. Email: agronmrexhepi@gmail.com; Tel: +383 44 110 855.

ABSTRACT

Liver transplantation requires long-term multidisciplinary follow-up, and nutritional care may be incorporated to address body weight and metabolic risk, although intervention evidence in liver transplant recipients remains limited and heterogeneous. The objective was to describe anthropometric, biochemical and patient-reported changes in a liver transplant recipient who followed an individualised nutrition and physical-activity programme alongside standard post-transplant medical care. We describe a 53-year-old man who received a living-donor right-lobe liver transplant for decompensated cirrhosis on 8 November 2022 and attended a nutrition centre on 10 June 2024 while continuing transplant-team follow-up. Pre-counselling laboratory results from 20 May 2024 were compared with results from 25 November 2024. The programme comprised flexible food-based counselling, self-directed aerobic activity and light toning exercises; two commercially available supplements were used concomitantly. Medication information was obtained retrospectively from the patient; he reported no medication or dose changes during the observation period, although complete transplant records, contemporaneous imaging and renal-function data were unavailable. Self-reported adherence was discussed during five follow-

up consultations. The report follows the CARE reporting guideline. Body weight decreased from 93 to 88 kg and body mass index from 28.7 to 27.2 kg/m². Several liver-related biochemical markers decreased, although gamma-glutamyl transferase and alkaline phosphatase remained elevated and leukocytosis was present at follow-up. These changes were temporally associated with the observation period but cannot be attributed to nutritional counselling, physical activity or supplement use, because concurrent medical care, graft-related factors and the natural clinical course could not be excluded. This case illustrates the feasibility of incorporating flexible nutritional follow-up into multidisciplinary post-transplant care while emphasising the need for complete clinical documentation and objective follow-up measures.

Keywords: Liver Transplantation; Living Donors; Nutrition Therapy; Exercise; Weight Loss; Dietary Supplements; Case Reports

RESUMEN

El trasplante hepático requiere seguimiento multidisciplinario prolongado y la atención nutricional puede abordar el peso corporal y el riesgo metabólico, aunque la evidencia de intervención es limitada y heterogénea. El objetivo fue describir los cambios antropométricos, bioquímicos y referidos por el paciente en un receptor que siguió un programa individualizado de nutrición y actividad física junto con la atención postrasplante habitual. Se describe a un varón de 53 años trasplantado del lóbulo hepático derecho de donante vivo por cirrosis descompensada (8/11/2022), que acudió a un centro de nutrición el 10/06/2024 mientras continuaba el seguimiento del equipo de trasplante. Los resultados de laboratorio previos a la consejería (20/05/2024) se compararon con los del 25/11/2024. El programa incluyó orientación alimentaria flexible, actividad aeróbica autogestionada y ejercicios ligeros de tonificación; se utilizaron concomitantemente dos suplementos comerciales. La información farmacológica, obtenida retrospectivamente del paciente, no registró cambios de medicación ni de dosis, aunque no se dispuso de la historia completa del trasplante, estudios de imagen contemporáneos ni datos de función renal. La adherencia autodeclarada se abordó en cinco consultas. El reporte sigue la guía CARE. El peso corporal disminuyó de 93 a 88 kg y el índice de masa corporal de 28,7 a 27,2 kg/m². Varios marcadores bioquímicos hepáticos disminuyeron, aunque la gamma-glutamil transferasa y la fosfatasa alcalina permanecieron elevadas y se observó leucocitosis en el seguimiento. Estos cambios se asociaron temporalmente con el periodo observado, pero no pueden atribuirse a la consejería nutricional, la actividad física ni los suplementos, ya que no pudieron excluirse la atención médica concurrente, factores del injerto ni la evolución natural. El caso ilustra la viabilidad de incorporar seguimiento nutricional flexible a la atención multidisciplinaria postrasplante y subraya la necesidad de documentación clínica completa y medidas objetivas.

Palabras clave: Trasplante de Hígado; Donadores Vivos; Terapia Nutricional; Ejercicio Físico; Pérdida de Peso; Suplementos Dietéticos; Informes de Casos

INTRODUCTION

Liver transplantation is a life-saving procedure, but it also marks the beginning of long-term medical and lifestyle follow-up. Nutritional status remains important before and after transplantation because it can influence recovery, metabolic health and longer-term outcomes [1-3].

After transplantation, patients may develop excess weight, dyslipidaemia, hypertension or diabetes. These complications are usually multifactorial and may reflect pre-existing metabolic risk, immunosuppressive treatment, dietary habits and reduced physical activity [4,5].

Although nutritional counselling and physical activity are widely encouraged, evidence from intervention studies in liver transplant recipients remains limited and heterogeneous [6-8]. Carefully documented clinical cases can therefore offer useful insight into how nutritional support is applied in everyday practice and how patients respond over time.

This report describes anthropometric, biochemical and patient-reported changes in a liver transplant recipient who followed an individualised nutrition and physical-activity programme alongside standard post-transplant medical care. This case report was prepared in accordance with the CARE reporting guideline [9]. The completed CARE checklist is provided as Supplementary File S1.

CASE REPORT

A 53-year-old man received a living-donor right-lobe liver transplant on 8 November 2022 for decompensated liver cirrhosis. The underlying aetiology of the cirrhosis was not available to the authors. According to information subsequently obtained from the patient and a later health-status report, the post-transplant course included suspected rejection requiring approximately 70 days of hospitalisation, intermittent infections during the early postoperative hospitalisation, and biliary complications requiring endoscopic or percutaneous procedures and stent/drainage management. On 27 June 2025, after the observation period reported here, an 8 Fr internal biliary drainage catheter was placed in the posterior liver division via percutaneous transhepatic cholangiography (PTC). The medical report planned PTC reassessment after three months, with catheter removal if appropriate or, if required, balloon dilatation, catheter replacement or endoscopic retrograde cholangiopancreatography (ERCP) stent placement. This later procedure is reported only to clarify the broader biliary history and could not have influenced the 2024 observations. The patient reported no diabetes, dyslipidaemia or persistent hypertension. Transient post-transplant hypertension was treated with amlodipine for approximately one month soon after transplantation and had resolved before the present observation period. At the initial nutrition assessment he remained overweight (body mass index 28.7 kg/m^2). Precise pre-

intervention graft-function assessments, renal-function results, rejection investigations, imaging, virological testing, biopsy findings and the transplant team's clinical interpretation of the abnormal May 2024 liver-related tests were not available to the nutrition centre.

Medication information was obtained retrospectively from the patient. During the May–November 2024 observation period, he reported taking tacrolimus (Prograf; 2 mg in the morning and 1 mg in the evening), levothyroxine (25 μg once daily), esomeprazole (Nexium; 40 mg once daily), ursodeoxycholic acid (Ursaktiv; 500 mg twice daily), a magnesium product (Magvital; labelled 365 mg twice daily) and low-dose acetylsalicylic acid (Ecopirin; 100 mg once daily). He reported no changes in medication type or dose during the observation period. Dose reductions were made by the treating transplant team only at the end of 2025, after the final assessment reported here, and therefore could not account for the changes observed between May and November 2024. The original prescription and tacrolimus trough concentrations were not available for independent verification.

Laboratory tests performed on 20 May 2024, 21 days before the first nutrition consultation, were used as the pre-counselling biochemical and haematological baseline. According to the patient, baseline and follow-up samples were analysed by the same laboratory; comparability of analytical methods was not independently verified. The markedly elevated aminotransferases, bilirubin, gamma-glutamyl transferase and alkaline phosphatase were clinically important in a transplant recipient and were reviewed within ongoing physician-led care. However, the nutrition-centre records did not contain the contemporaneous diagnostic work-up needed to distinguish biliary dysfunction, rejection, infection, drug-related injury, recurrent disease or another cause. Consequently, changes in these markers are reported descriptively and are not interpreted as effects of the nutrition programme. At the initial visit, the patient was 180 cm tall, weighed 93 kg and had a body mass index of 28.7 kg/m².

The programme was intended to support gradual weight reduction, metabolic risk management and sustainable dietary re-education over 6–9 months. A fixed gram-based menu was not prescribed. Instead, flexible, food-based nutritional counselling and anthropometric assessments were provided by a medical doctor with an MSc in Kinesiology and a PhD in Medicine. Requirements were estimated from baseline body weight. Guidance emphasised regular meals, portion awareness, adequate hydration, minimally processed foods, avoidance of alcohol, reduced refined carbohydrates and sugar-sweetened drinks, and limited fatty or processed animal products. The counselling targets and their practical application are summarised in Table I.

Physical activity guidance focused on walking, stationary cycling or cross-trainer exercise, with light muscle-toning exercises. Maximum heart rate was estimated using 220 minus age (167 beats/min), giving a target of approximately 100–109 beats/min at 60–65% of the estimated maximum heart rate. Sessions of 30–40 minutes once or twice daily were

recommended according to tolerance. No formal exercise test, validated pre-participation screening tool or objective activity monitor was used at the nutrition centre. The patient later reported performing these activities once or twice daily, but actual frequency, duration and intensity were not independently verified.

Two CaliVita products, marketed by the manufacturer as dietary supplements rather than medicinal treatments, were used concomitantly: Liquid Chlorophyll, 2.5 mL once daily (equivalent to 7.5 mg chlorophyllin according to the label), and Mega B-Complex, one tablet daily. According to the product information supplied by the authors, 5 mL of Liquid Chlorophyll contained 15 mg chlorophyllin (sodium-copper-chlorophyllin from alfalfa), purified water, spearmint oil, potassium sorbate and citric acid. Each Mega B-Complex tablet contained vitamin B1 100 mg, vitamin B2 100 mg, vitamin B6 100 mg, inositol 100 mg, choline 100 mg, niacin 100 mg, para-aminobenzoic acid 100 mg, pantothenic acid 100 mg, folic acid 125 μg, vitamin B12 100 μg and biotin 100 μg. These products are reported solely as concomitant exposures and not as evidence-based treatments for graft dysfunction. The patient reported that the overall programme had been discussed with his transplant physician, but written product-specific approval was not available. No established benefit of either product after liver transplantation was assumed. Because tacrolimus has clinically important food and supplement interactions and because the vitamin B6 content was high, supplement use requires particular caution [10,11]. Adverse events were discussed informally at follow-up; no new problems were reported, but no structured adverse-event instrument or laboratory safety protocol specific to the supplements was used. Their effects cannot be separated from diet, activity, medical care or the natural clinical course.

Following the initial assessment on 10 June 2024, five counselling contacts were recorded on 21 July, 24 August, 25 September, 22 October and 25 November 2024. The final reassessment occurred approximately five and a half months after the initial visit; the planned 6–9-month programme was therefore still ongoing rather than completed early. Only baseline and final laboratory measurements were available for this report. A CARE-style chronology is shown in Table II.

At follow-up, body weight had decreased to 88 kg and body mass index to 27.2 kg/m², a reduction of 5 kg (5.4%). At each consultation, implementation was discussed verbally with the patient and his wife, who prepared meals at home. The patient was encouraged to continue careful food choices; the principal recommendations were reinforced rather than materially changed during follow-up. They reported consistent adherence to the dietary guidance, and the patient reported that physical activity had become part of his routine. These statements represent self-reported adherence only; no food diary, dietary recall, validated adherence scale, structured questionnaire or wearable activity monitor was used. Anthropometric findings at baseline and follow-up are summarised in Table III.

Table I.

Nutritional counselling targets and practical guidance

Domain	Target	Practical application
Energy	25–30 kcal/kg/day (approximately 2325–2790 kcal/day at 93 kg)	Portion control and minimally processed foods; no fixed weighed menu
Protein	1.0–1.2 g/kg/day (approximately 93–112 g/day)	Lean protein sources distributed across meals
Carbohydrate	45–50% of total energy	Complex sources; minimise added sugars and sugar-sweetened drinks
Fat	25–30% of total energy	Avoid trans fats; favour olive oil, nuts and other unsaturated sources
Fibre	30–35 g/day	Vegetables, fruit, legumes and whole grains as tolerated
Sodium	<2000 mg/day	Limit processed and highly salted foods
Fluid	30 mL/kg/day (approximately 2.8 L/day), subject to medical advice	Water as the principal source
Food safety	Post-transplant precautions	Cook meat thoroughly; use pasteurised products; wash produce carefully
Avoidance	Alcohol; grapefruit, pomelo and pomegranate	Avoid potential interaction with tacrolimus and other post-transplant risks

Table II.

CARE-style clinical and follow-up timeline

Date/period	Event
8 November 2022	Living-donor right-lobe liver transplantation for decompensated cirrhosis
Early post-transplant period	Inpatient treatment for suspected rejection; intermittent infections; transient hypertension treated for approximately one month; biliary complications managed by the transplant team
20 May 2024	Baseline laboratory assessment
10 June 2024	Initial nutrition consultation and anthropometric assessment
21 July, 24 August, 25 September and 22 October	Follow-up nutritional counselling contacts

Date/period	Event
May–November 2024	No patient-reported medication or dose changes
25 November 2024	Final reported consultation, anthropometric reassessment, laboratory assessment and informal patient perspective
23 April 2025	Retrospective case-report ethics approval and written patient consent for use of clinical data and publication

Table III.
Anthropometric data at baseline and follow-up

Parameter	10 Jun 2024	25 Nov 2024
Body height (cm)	180	180
Body weight (kg)	93	88
Body mass index (kg/m²)	28.7	27.2
Change in body weight (%)	—	–5.4

Haematological and biochemical findings are presented in Tables IV and V. Reference intervals are those provided by the laboratory. According to the patient, both assessments were performed at the same laboratory, although analytical comparability was not independently verified.

Table IV.
Haematological findings before and after counselling

Parameter	20 May 2024	25 Nov 2024	Reference interval
Erythrocytes (×10¹²/L)	5.47	5.22	4.00–6.20
Haemoglobin (g/dL)	15.8	15.9	12.0–18.0
Haematocrit (%)	47.3	44.8	40.0–55.0
Neutrophils (%)	34.9 (low)	45.3	45.0–75.0
Lymphocytes (%)	45.8	38.8	25.0–50.0
Monocytes (%)	11.1 (high)	9.7	2.0–10.0
Eosinophils (%)	6.8 (high)	5.8 (high)	0.0–5.0
Platelets (×10³/μL)	344	281	150–400
Leukocytes (×10³/μL)	7.84	11.36 (high)	4.00–10.00

Note: 'High' and 'low' indicate values outside the laboratory-provided reference intervals.

Table V.
Biochemical findings before and after counselling

Parameter	20 May 2024	25 Nov 2024	Reference interval
Glucose (mmol/L)	6.68 (high)	6.37	3.60–6.40
Alanine aminotransferase (U/L)	142 (high)	39	<45
Aspartate aminotransferase (U/L)	91 (high)	30	<35
Total bilirubin (μmol/L)	38.1 (high)	18.4	5.1–20.5
Direct bilirubin (μmol/L)	22.8 (high)	4.77	<5.1
Gamma-glutamyl transferase (U/L)	241.0 (high)	72.7 (high)	<55.0
Alkaline phosphatase (U/L)	591.2 (high)	255.0 (high)	53.0–128.0
C-reactive protein (mg/L)	6.65 (high)	1.84	0.00–6.00

Note: 'High' and 'low' indicate values outside the laboratory-provided reference intervals.

Percentage change was calculated as ((follow-up value – baseline value) / baseline value) × 100. Alanine aminotransferase decreased by 72.5%, aspartate aminotransferase by 67.0%, total bilirubin by 51.7%, direct bilirubin by 79.1%, gamma-glutamyl transferase by 69.8%, alkaline phosphatase by 56.9% and C-reactive protein by 72.3%. At follow-up, glucose, both aminotransferases and both bilirubin fractions were within the laboratory reference intervals. Gamma-glutamyl transferase and alkaline phosphatase decreased but remained elevated. Mild eosinophilia persisted and the leukocyte count increased above the reference interval. The patient reported that these findings were reviewed by his treating physician and described to him as non-serious and transient; the underlying evaluation was unavailable to the authors. Infection, allergy, medication reaction and persistent biliary dysfunction therefore could not be independently excluded.

PATIENT PERSPECTIVE

At the follow-up visit, the patient reported greater energy, improved general well-being and an easier return to normal daily activities, stating that he felt like "a completely different person, full of energy". He and his wife reported no new health problems during the observation period. This perspective was collected informally during routine clinical conversation and was not measured with a validated quality-of-life, fatigue, physical-function or well-being instrument; recall, expectation and social-desirability bias are therefore possible.

DISCUSSION

Over approximately five and a half months, body weight decreased by 5.4% and several liver-related biochemical markers decreased. These are clinically relevant descriptive observations, but their temporal concurrence with nutritional follow-up does not demonstrate that counselling, physical activity or supplements produced the changes. Persistent elevation of gamma-glutamyl transferase and alkaline phosphatase, new leukocytosis and continuing eosinophilia also caution against interpreting the laboratory profile as uniform recovery.

Nutritional assessment and lifestyle support are recognised components of care across the liver-transplant pathway [1-3]. Post-transplant metabolic risk reflects interacting influences including the underlying disease, graft and biliary status, immunosuppressive treatment, body weight, diet and activity [4,5]. Intervention evidence remains limited and heterogeneous [6-8]. In this case, flexible counselling was feasible in a home-food environment and family involvement may have supported implementation; however, adherence and activity were self-reported and the intervention was not sufficiently standardised to establish efficacy.

Family involvement and repeated consultations were practical strengths, but they do not provide objective verification. The patient perspective adds clinical context but was collected informally and should not be interpreted as a quantified improvement in quality of life or physical function.

Important limitations remain. This is a single uncontrolled case with only two laboratory time points. Medication information, laboratory location, physician review and adherence were reported retrospectively by the patient and were not fully verified against contemporaneous transplant records. Although no medication changes were reported during May–November 2024, complete graft assessments, renal-function data, imaging, biliary evaluation, viral testing, biopsy findings and tacrolimus concentrations were unavailable. The reason for the markedly abnormal baseline tests therefore cannot be established, and concurrent medical care, graft or biliary factors, spontaneous resolution of a transient event and other unmeasured influences cannot be excluded. No fixed meal plan, weighed food record, validated adherence measure, objective activity monitoring, body-composition reassessment or validated patient-reported outcome was used. Supplement-specific approval and structured adverse-event monitoring were also unavailable. Accordingly, neither the biochemical changes nor the patient-reported improvement can be attributed to any component of the programme.

Within these constraints, the case illustrates the practical feasibility of incorporating flexible nutritional counselling, family support and tolerable physical-activity guidance into multidisciplinary post-transplant follow-up. It should be viewed as an observational description that identifies documentation requirements for future prospective case series, including complete transplant and medication records, repeated clinical and laboratory

assessments, objective adherence and activity measures, validated patient-reported outcomes, and prespecified supplement-safety monitoring.

DATA AVAILABILITY STATEMENT

All relevant de-identified data supporting the findings of this case report are included within the article. The underlying clinical records are not publicly available because they contain confidential and potentially identifiable patient information. Additional de-identified information may be made available by the corresponding author on reasonable request, subject to patient consent and applicable ethical and privacy safeguards.

CONCLUSIONS

In this liver transplant recipient, nutritional counselling, self-reported physical activity, concomitant supplement use and ongoing medical care were followed temporally by modest weight loss and changes in several laboratory markers. The observations do not establish causality, and unresolved abnormalities and incomplete transplant documentation preclude attributing the findings to the nutritional programme. The case illustrates the feasibility of incorporating flexible nutritional follow-up into multidisciplinary care and the importance of complete clinical documentation and objective outcome assessment.

Ethical Aspects

The protocol for this retrospective case report was approved by the Ethics Committee of the Institute of Sports Anthropology (INASP), Prishtina, Kosovo (Protocol No. 139/2025, 23 April 2025). The nutritional counselling, clinical follow-up and measurements conducted in 2024 formed part of routine care and were not initiated for research purposes. Written informed consent was obtained from the patient in April 2025 for the use of his clinical data and publication of this anonymised case report. All clinical information was coded and de-identified before preparation of the manuscript, and no information that could disclose the patient's identity is presented.

Declaration on the Use of Artificial Intelligence Tools

During preparation of this manuscript, ChatGPT (OpenAI) was used to support language editing and stylistic refinement. The authors critically reviewed and revised all AI-assisted text and take full responsibility for the final content. No AI-assisted tool was used to generate, modify or analyse the clinical data.

Conflict of Interest

The authors declare no conflict of interest.

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