

# FROM AMPUTATION TO REINTEGRATION

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## Abstract

*The article discusses the program of rehabilitation and reintegration of patients with lower-limb amputation, who had undergone amputation at the Medical Clinical Center Maribor and were then, in regard to their functional state, referred to rehabilitation at the Institute for Rehabilitation, Republic of Slovenia. We retrospectively followed 58 patients. In our research 88% of included*

*patients were fitted with prostheses and were able to walk acceptable distance. The functional state of the patients at discharge was based on gait tests and the improved assessment of motor abilities on the Functional Independence Measure (FIM).*

*The follow up of amputee patients is important part of complete rehabilitation program. Their reintegration has to be followed and carefully stimulated by rehabilitation team.*

## INTRODUCTION

Most lower-limb amputations result from impaired peripheral arterial blood flow and consequential chronic critical ischemia. In general, the patients are elderly, they suffer from numerous comorbidities and frequently live in inadequate social conditions.

The goal of amputee's rehabilitation is to help patient return to the highest level of function, while improving the overall quality of life - physically, emotionally, and socially (1-3).

In our retrospective study patients who had lower limb amputation and concluded early rehabilitation program in Medical Clinical Centre Maribor, were then referred to complex rehabilitation program at the Institute for Rehabilitation, Republic of Slovenia.

The aim of our study was to find out how amputee patients finishing rehabilitation program were able to walk with prosthesis and return to active life.

## METHODS AND SUBJECTS

### Methods

After early rehabilitation in Maribor a group of amputee patients was included in complex rehabilitation program at the Institute for Rehabilitation in Ljubljana. The rehabilitation team, the physicians - PRM specialist, specialist in internal medicine, medical nurses, physiotherapist, occupational therapist, prosthetic engineer, social worker, psychologist and vocational counsellor according to patients needs help the patient to adapt to a new life-style.

The activity or disability level was regularly followed by the rehabilitation team using motor Functional Independence Measure (motor FIM) and walking tests.

### Subjects

115 lower-limb amputations were performed on 105 patients (aged from 17 to 95 years) in Medical Clinical Centre Maribor between May 1st 2006 and April 29th 2007.

67 of them were referred to Rehabilitation Institute in Ljubljana for rehabilitation, 9 did not respond. So 58 amputee patients (aged from 17 to 87 years) were admitted to rehabilitation. The causes of lower-limb amputation were: in 29 patients (50%) complications of diabetes, in 22 patients (38%) peripheral arterial disease, in 4 patients (7%) injury, in 2 (3%) osteomyelitis and in 1 patient (2%) carcinoma. The level of amputation: 64% trans-tibial (TT), 26% trans-femoral (TF), 3% bilateral TT, 3% bilateral TF and 3% bilateral, TT and TF amputation.

## RESULTS

51 amputee patients (88%) were fitted with prosthesis. In 7 patients (12%), prosthetic fitting was not performed due to their weak physical condition.

The average motor FIM at admission was 68 (from 21 to 84), at discharge 74 (from 30 to 84), it increased in average for 6 (from 0 to 21).

Walking tests were performed in 44 patients with appropriate physical condition. Walking speed was assessed as the time

needed to walk 10 meters with prosthesis. On average, the subjects needed 34 seconds to walk 10 meters (from 7 to 85 seconds). Walking endurance was assessed as the distance covered with prosthesis in 6 minutes. In that time, the subjects walked 132 meters on average (from 20 to 340m).

52 patients (90%) returned home, to their previous social environment, 6 patients (10%) were discharged into nursing home. The average period from the amputation to admission on rehabilitation was 112 days (from 40 to 348). The average period from admission to discharge from the Institute was 28 days.

## DISCUSSION

The functional level of amputee patients depends on the interaction between physical, mental, psychological and social factors (4-6).

We agree FIM score is not useful in predicting successful prosthetic rehabilitation in lower extremity amputee patients (7). The motor subscore accompanies the use of prosthesis.

We compared some demographic characteristics of our group with the analysis of the amputees in Croatia (8). The most common diseases that resulted in amputation were: diabetes mellitus and obstructive vascular diseases, trauma, osteomyelitis and tumors.

Average period from the amputation to admission for rehabilitation program was 112 days (from 40 to 348) in Slovenia and over 190 days in Croatia.

The average period from admission to discharge from the Institute was 28 days in Slovenia and about 40 days in Croatia.

## CONCLUSION

In amputee patients with normal stump healing the admission to the complex rehabilitation program should be done as soon as possible. Its goal is to help patient return to the highest level of function, while improving the overall quality of life - physically, emotionally, and socially.

The functional state of the patients at discharge from the rehabilitation program in our Institute was based on gait tests and the improved assessment of motor abilities on the Functional Independence Measure (FIM). After finishing the rehabilitation program most of the amputee patients observed in our study returned to their homes and their further reintegration will be followed-up at their regular outpatient controls.

## References:

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