



# Nursing Care in Liver Transplantation

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## Abstract

**Introduction:** Transplantation is a surgical procedure in which occurs the replacement of a diseased organ by a healthy organ. Liver transplantation is the treatment of choice when clinical and surgical treatment alternatives are exhausted for patients affected with some liver pathology, it seeks a better quality of life. Among the professionals who work with these patients, nurses are important in this process, from outpatient follow-up before the procedure to postoperative liver transplantation.

**Objectives:** To understand the role of nursing care in the postoperative period of liver transplantation. Methodology: na modalidade exploratória descritiva, através da revisão integrativa da literatura científica, para assim atingir os objetivos estabelecidos. Expected results: After the integrative review in full, we expect to achieve the proposed objectives of the research.

**Conclusion:** With this work we expect to identify how is the performance of nursing care in the postoperative hospital liver transplantation.

**Keywords:** Health; Surgical Treatment; Nursing Care

**Abbreviations:** UNOS: United Network for Organ Sharing; PVT: Portal Vein Thrombosis; IR: Integrative Review.

## Introduction

Liver transplantation is the treatment of choice when clinical and surgical treatment alternatives are exhausted for patients affected with some liver pathology, it seeks a better quality of life. Under these conditions, the patient's health is severely compromised and the prognosis of liver failure must be evaluated in relation to postoperative complications. The follow-up of the multiprofessional team is extremely important because of the numerous complications that can occur after transplantation, such as infection and organ rejection [1,2].

Professionals who work with liver transplant patients need to develop qualified skills to safely perform their activities, since it is a complex and specific procedure that

requires a specialized multidisciplinary team to assist them and perform their duties. Among these professionals, nurses are important members of the multidisciplinary team who work in this process, from outpatient follow-up before the procedure to postoperative liver transplantation. In the postoperative period, the nursing team aims to evaluate, detect and intervene in possible post-surgical complications. Thus, the nurse is extremely important for the assistance and better quality of care from him/her and the nursing team [1,2].

Therefore, with this research we seek to highlight the role of nurses and their actions aimed at nursing care in post-liver transplantation.

## General Objective

- To understand the nurse's role in the postoperative period of liver transplantation.

- Specific objectives
- To understand the role of nurses in the planning of care to the patient in the postoperative period of liver transplantation;
- To understand the nurse's communication with the nursing team and activities developed by them;
- To identify the main difficulties faced by nurses in caring for patients after liver transplantation.

## Discussion

Liver transplantation is performed when conventional treatments do not result in improvement for acute or chronic liver disease. After liver transplantation, it can result in interference in various functions of the body, so its realization should be accompanied by a highly trained multidisciplinary team, maximum infrastructure and nursing care trained specifically for these cases [3].

Usually the liver donor is brain-dead (cadaveric transplant) or a living donor volunteers to donate part of his liver knowing that the organ has the ability to regenerate over time.

The living donor in the surgical procedure that takes out part of the liver has that part regenerated later (around 8 weeks) and returns to normal size. Some risks for the liver donor include surgical infection and bile leak, but these situations are atypical. In the post-operative period of the living donor, laboratory and X-ray evaluations must be done, and he may feel discomfort and be subject to infections, which depends on the person and the surgery, however the intention is always to preserve the donor's health to the maximum so that the inter-vivos donation is effective and sought after [4].

One of the major impediments to organ donation after death is the deceased not communicating to the family whether or not they wanted to be a donor [5].

According to Decree No. 9,175 of October 18, 2017, which regulates Law No. 9,434 of February 4, 1997 about organ donation, states in its art. 17 § 1 that: "the removal of organs, tissues, cells and parts of the human body may be carried out after brain death, with the express consent of the family" [6].

Liver transplantation is the most complex procedure in modern surgery. No other procedure interferes with so many body functions as this one. Its success depends on a complete hospital infrastructure and a multi-professional team highly prepared in the procedure and in the follow-up of severely debilitated patients already immunosuppressed by the disease causing the transplant [7].

One of the most stressful and significant problems in this area is the high mortality rate of patients on the waiting list. Recently the United Network for Organ Sharing (UNOS) has implemented a new organ policy that uses the Liver End Stage Disease Model (MELD). This model which is based on serum creatinine, bilirubin levels and prothrombin, was made to prioritize liver transplantation in more severely ill disease patients, reducing their time on the waiting list [8].

Subsequent studies revealed that MELD was very effective in reducing the mortality rate on waiting lists. The number of patients who died on it or were removed due to lack of clinical conditions for transplantation dropped from 1,220 in 2001 to 1,113 in 2002, which shows a 23% decrease in death cases when the numbers are adjusted according to variations in waiting list size [8].

According to Salvalaggio, et al. [9] the MELD of the patient according to their urgency for transplantation, blood type for compatibilities, height and weight, generates a life expectancy within ninety days for those on the waiting list according to a scale. Those who have less waiting time due to mortality issues receive the transplant first, and those who do not meet the MELD have their transplant performed as an urgency because their time does not reach the minimum of the scale.

The preoperative period is determined when the patient joins the waiting list to receive the liver from a donor until the call for transplantation. The intraoperative period is a great challenge, because most patients undergoing this surgery already have many complications as a result of the underlying disease (increased cardiac output, reduced systemic vascular resistance, tachycardia, normal or tending to lower blood pressure, and increased blood volume), and other complications can interfere with the success of the surgery, from the condition of the donated liver, such as ischemia time during transplantation of the new organ and even bleeding [10,11].

The control of metabolic and hemodynamic changes, constant monitoring of blood pressure, pulmonary and central venous pressure, adequate venous access, machines for infusion of blood and warm fluids, and induction of immunosuppressants are performed during the transplant [12].

The postoperative liver transplantation period comprises the longest period of hemodynamic instability as soon as the liver transplant is finished, the patient is transferred to the intensive care unit for intensive care, follow-up, monitoring and constant evaluation, because neurological events, bleeding, cardiopulmonary changes, hematological, vascular, biliary changes, infections, and acute rejection of the organ

are the most prevalent complications of this period [2].

Other complications of liver transplantation may occur postoperatively: intra-abdominal bleeding, hepatic artery thrombosis (HA), portal vein thrombosis (DVT), biliary complications, graft complications, and graft rejection [12].

Due to the severity of the patient's medical condition and the complexity of this surgery, the person undergoing liver transplantation has a higher incidence of infectious complications [13].

Therefore, actions directed toward the prevention or early detection of surgical complications are necessary [14].

Care includes: preventing, reducing, monitoring, and controlling infections, cross-infections, thus avoiding the risks of infection due to the immunosuppression status of patients. After the stability of hemodynamic patterns the recipient is transferred to the ward [2].

## Methodology

A descriptive exploratory research will be carried out through an integrative review of the scientific literature to achieve the established objectives.

The integrative review (IR) is a method that allows the synthesis of knowledge through a systematic and rigorous process, following the following steps of this method.

- elaboration of the review question
- search and selection of primary studies
- extraction of data from the studies
- critical appraisal of the primary studies included in the review;
- synthesis of the review results
- presentation of the method.

Expected outcomes

This integrative review hopes to contribute to the determination of the attributions of nursing care in the postoperative process of liver transplantation, and to contribute to nursing care in patients submitted to this type of procedure.

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