

Liver transplant recipients: nursing therapeutics during follow-up

A pessoa submetida a transplante de fígado: terapêuticas de enfermagem no *follow-up*
La persona sometida a un trasplante de hígado: terapias de enfermería en el seguimiento

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Abstract

Background: The implementation of nursing therapeutics adjusted to the actual needs of liver transplant recipients can have a significant impact on transplantation outcomes since, after transplantation, patients are encouraged to change the way in which they manage their therapeutic regimen towards success.

Objective: To identify the nursing foci and the interventions implemented to address the healthcare needs of liver transplant recipients.

Methodology: Qualitative, retrospective study conducted at a transplant center, using descriptive statistics to analyze nursing records between July 2010 and September 2014.

Results: The most common nursing focus was susceptibility to infection (67.30%) with the implementation of interventions related primarily to the teaching action type. Most of the interventions (57.07%) were related to the observing action type.

Conclusion: The follow-up of liver transplant recipients focuses essentially on bodily processes and the monitoring of signs and symptoms of disease complications.

Keywords: self care; liver transplantation; nursing care; information systems

Resumo

Enquadramento: A implementação de terapêuticas de enfermagem adequadas às reais necessidades da pessoa submetida a transplante de fígado pode ter impacto significativo nos resultados da transplantação pelo facto de, após transplante, a pessoa ser convidada a reformular a forma como é capaz de gerir o seu regime terapêutico em prol do sucesso.

Objetivo: Identificar os focos e intervenções implementados pelos enfermeiros em resposta às necessidades de cuidados identificadas na pessoa submetida a transplante de fígado.

Metodologia: Estudo qualitativo, retrospectivo, realizado num centro de transplantação, com recurso à análise estatística descritiva da documentação de enfermagem no período de julho de 2010 a setembro de 2014.

Resultados: O foco de enfermagem mais frequentemente identificado é a suscetibilidade à infeção (67,30%), com a implementação de intervenções essencialmente no âmbito do ensinar. A maioria das intervenções implementadas (57,07%) é do âmbito do observar.

Conclusão: O acompanhamento da pessoa submetida a transplante de fígado centra-se essencialmente nos processos corporais e na vigilância de sinais e sintomas de complicação da doença.

Palavras-chave: autocuidado; transplante de fígado; cuidados de enfermagem; sistemas de informação

Resumen

Marco contextual: La implementación de terapias de enfermería adecuadas a las necesidades reales de la persona sometida a un trasplante de hígado puede tener un impacto significativo en los resultados del trasplante por el hecho de que, después de este, se invita a la persona a reformular la forma en que es capaz de gestionar su régimen terapéutico para que tenga éxito.

Objetivo: Identificar los focos e intervenciones implementados por los enfermeros en respuesta a las necesidades de cuidados identificados en la persona sometida a trasplante de hígado.

Metodología: Estudio cualitativo, retrospectivo, realizado en un centro de trasplante, en el que se utilizó el análisis estadístico descriptivo de la documentación de enfermería en el período de julio de 2010 a septiembre de 2014.

Resultados: El foco de enfermería identificado con más frecuencia es la susceptibilidad a la infección (67,30%), con la implementación de intervenciones esencialmente en el ámbito de la enseñanza. La mayoría de las intervenciones implementadas (57,07%) es del ámbito de la observación.

Conclusión: El seguimiento de la persona sometida a un trasplante de hígado se centra esencialmente en los procesos corporales y en el control de los signos y síntomas de complicación de la enfermedad.

Palabras clave: autocuidado; trasplante de hígado; atención de enfermería; sistemas de información

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Introduction

Transplantation is the only treatment option that increases the life expectancy of patients with advanced liver diseases. Liver transplantation was initially a high-risk procedure, but advances in surgical techniques and immunosuppressive therapies have significantly improved post-transplantation survival (Yang, Shan, Saxena, & Morris, 2014). Patients undergoing transplantation are encouraged to readjust the way in which they manage their life/disease to ensure their quality of life and the success of transplantation. According to Mota (2011), the most common causes of liver disease are deviant behaviors, namely alcohol abuse (34%) and hepatitis (30%), which puts into evidence the need to readjust the way in which individuals manage their health/illness process after transplantation.

The way in which patients experience their health/illness transition will have a significant impact on future behaviors, and, consequently, on the success or lack of success of transplantation. Nurses monitor patients throughout this process and, in addition to the interventions aimed at bodily processes, they should also facilitate the development of relevant skills. The major challenge of liver transplant recipients is their ability to incorporate self-care requisites, namely those related to the management of the therapeutic regimen.

Therefore, it is essential to identify nursing foci and interventions and understand their purpose. Nursing records should describe the interventions aimed at promoting transplant recipients' healthy adaptation to their new condition (Mota, Cruz, & Costa, 2016). In this study, a retrospective analysis will be performed to the data collected, processed, and recorded by nurses in the information system in force, with the purpose of identifying nursing foci and interventions implemented to address the care needs of liver transplant recipients.

The continuous improvement of care delivery depends on a critical-reflexive analysis and comparison of the interventions to the best evidence available with the purpose of better responding to the patients' actual

needs in daily practice. It is from the productive interaction between health professionals and patients that the quality of life of the populations can be improved (Brion, 2014; Noël et al., 2014).

Background

Successful clinical practices in liver transplantation require experienced health professionals and the active participation of both patients and families in the therapeutic plan (Baldoni et al., 2008). Given the complexity of the surgical procedure, the success of the liver transplantation requires a complex hospital infrastructure and a multi-professional team that has received training on the procedure and is able to monitor immunosuppressed patients who are severely weakened by the disease (Nogara, Wiederkher, Benghir, Zalli, & Helena, 2009).

In Italy, Baldoni et al. (2008) designed a program aimed at monitoring transplant recipients from the pre-transplantation to the post-transplantation phase. The objectives of this program were to provide an efficient education to patients, meet health professionals' needs regarding what and how to teach, acquire effective communication skills, and monitor the education process. This study puts into evidence the importance of implementing nursing therapeutics aimed at empowering patients for self-care.

In patients' health/illness transition process, "nurses are the professionals who can best act as facilitators in the transition process due to closer contact and greater knowledge of the patient's reality and needs" (Mota, Rodrigues, & Pereira, 2011, p. 25).

The area of nursing therapeutics allows nurses to identify the best intervention for health maintenance and promotion in response to health aspects that are relevant to nursing practice (focus; Conselho Internacional de Enfermeiros, 2016). Thus, nursing therapeutics can be integrated into the domains of prevention, promotion or intervention. In the area of transplantation, therapeutic self-management is relevant to nursing practice due to its significant impact on the success (Mota et al., 2016). It is a multidimen-

sional and complex concept that emerges as one of the main challenges of liver transplant recipients.

According to Ryan and Sawin (2009), the concept of therapeutic self-management is composed of three components: a process, a program or intervention, and an outcome. The process refers to the use of self-regulation skills to manage chronic conditions, including activities such as setting goals, monitoring and identifying signs/symptoms, decision-making, planning and engaging in specific behaviors, self-evaluation, and management of physical, emotional, and cognitive responses associated with changes in health behaviors. Therapeutics should be designed by health professionals with the purpose of preparing people to assume the responsibility for managing their chronic illness and engaging in health promotion activities.

Patient education is often used as an intervention aimed at optimizing the process of therapeutic self-management. It is a method of providing information with the purpose of increasing knowledge and satisfaction, as well as leading to changes in health behaviors. Therapeutic self-management programs should facilitate the development of skills and activities designed to improve behaviors, reduce health care costs, and improve quality of life and well-being (Ryan & Sawin, 2009).

The nursing process includes assessment, diagnosis, and intervention, and results from the constant interaction between people and the environment. Nursing therapeutics include both the contents and the objectives of nursing interventions (Meleis, 2007). Thus, nursing therapeutics also reflect the intentionality of nursing interventions. "One single intervention can have several intentionalities, which are very much related to how it is performed, and contribute to the development of several competencies; multiple interventions, and on different topics, contribute to a single intentionality" (Bastos, 2012, p. 330).

As a result, it is essential to identify the nursing therapeutics implemented by nurses in order to analyze how liver transplant recipients are follow-up with the purpose of con-

tinuously improving care interventions and care quality.

Research question

What are the most common nursing foci and interventions that nurses identify in the post-liver transplant consultation?

Methodology

The study was carried out at the Hospital Center of Porto (*Centro Hospitalar do Porto*, CHP), where data from outpatients was electronically recorded by nurses on a nursing practice support system (*Sistema de Apoio à Prática de Enfermagem*, SAPE) using standardized language (International Classification for Nursing Practice, ICNP), in its beta version.

This exploratory study used a qualitative approach to retrospectively analyze nursing records found in SAPE regarding outpatient post-liver transplant consultations. Data refer to the period between July 2010 (first computerized records in the CHP) and September 2014 (beginning of a broader project to which this study has contributed). The information gathered, processed, and documented by nurses in all nursing consultations (referred to as *contactos de enfermagem* in the information system in use) with liver transplant recipients during this period was analyzed. In data analysis, the conceptual principles of the ICNP served as basis for the definition of nursing foci and the corresponding judgments for the elaboration of diagnoses, as well as for the definition of nursing actions and areas that should be taken into account in the design of interventions that respond directly to nursing diagnoses identified in the production of nursing-sensitive outcomes (referential integrity). Data were exported from the electronic information system to a database. Data were then subjected to descriptive statistics using the IBM SPSS software, version 22.0.

Anonymity was ensured by omitting the patient's medical record number and personal identification, as well as by omitting the identification of the nurses making the records.

The study was approved by the Board of Directors of the CHP.

Results

Outpatients' nursing records result mainly from the consultations scheduled by the physician; thus, patients have a nursing consultation when they attend a medical consultation at the

hospital. A total of 1460 nursing consultations were analyzed (all consultations recorded in the system in use during the period under analysis). According to these data, each patient has, on average, five nursing consultations ($SD = 4$, ranging from 1 to 42 consultations).

The most common nursing focus identified by nurses was susceptibility to infection (67.30%), followed by therapeutic self-management (16.40%; Table 1).

Table 1

Nursing foci in outpatient consultations

Foci	<i>N</i>	%
Susceptibility to infection	640	67.30%
Therapeutic self-management	156	16.40%
Surgical wound	59	6.20%
Wound	28	2.94%
Adherence to therapeutic regime	20	2.10%
Hypertension	6	0.63%
Traumatic wound	6	0.63%
Pain	4	0.42%
Edema	4	0.42%
Knowledge	3	0.32%
Diarrhea	3	0.32%
Others	22	2.32%
Total	951	100.00%

Table 2 shows the nursing interventions with referential integrity towards the most commonly identified nursing focus. Most interventions fo-

cused on the domain of teaching about prevention of complications, signs of infection (self-control: infection; self-monitoring: infection).

Table 2

Interventions with referential integrity towards the focus susceptibility to infection

Interventions	<i>N</i>
Teaching about prevention of complications	98
Teaching about signs of infection	41
Teaching about susceptibility to infection	34
Teaching about preventing of infection	31
Teaching about self-monitoring: infection	24
Surveying signs of infection	24
Teaching about/Encouraging self-control: infection	17
Assisting the person with identifying self-control strategies: infection	8
Maintaining/Initiating contamination prevention measures	4

Due to the impact of the nursing foci *therapeutic self-management* on liver transplantation, the 156 records on this nursing focus were also analyzed to understand how nurses identified the corresponding nursing diagnoses (Table 3). Nurses tend to focus on dimensions that in-

fluence therapeutic self-management, thus intervening on issues related to self-administration of medication, carrying out treatment, prevention of complications, diet, lifestyle, physical exercise, medication regimen, and response/reaction to medication.

Table 3

Dimensions of the focus therapeutic self-management identified by nurses during consultations

Dimensions	N
Knowledge	131
Skill learning	9
Efficacy (Judgement)	9
Caregiver knowledge	3
Therapeutic self-management opportunity (potentiality)	3

All nursing interventions implemented by nurses (7858) were analyzed and classified according to the action type (Table 4). In the observing action type, 34.0% of the interventions were related to monitoring, that is, they aimed at “scrutinizing somebody or something on repeated or regular occasions” (Conselho Internacional de Enfermeiros, 2016, p. 67),

which may include monitoring vital signs, weight, abdominal drain, abdominal perimeter, and bowel elimination, among others. In the surveying action type, nurses tend to focus more on monitoring wound dressing, wound healing, pain, urinary output, diet, signs of hypo/hyperglycemia, bowel elimination, and abdominal drain.

Table 4

Nursing interventions during outpatient consultations, according to the action type

Observing	57.07%	Surveying	13.83%
		Monitoring	34.0%
		Assessing	4.89%
		Identifying	0.65%
		Verifying	3.70%
Informing	21.47%	Teaching	17.89%
		Instructing	2.28%
		Training	0.98%
		Explaining	0.15%
		Guiding	0.17%
Attending	6.35%	Facilitating	0.41%
		Motivating	0.89%
		Assisting	1.43%
		Relating	3.51%
		Preventing	0.11%
Managing			4.46%
Performing			10.65%

Finally, nurses' interventions related to the teaching action type were also analyzed (Table 5). The topics most commonly addressed by nurses during the outpatient consultation after

liver transplantation were: medication regimen, physical exercise/rest, therapeutic self-management, infection, diet, prevention of complications, treatments, and sexual activity.

Table 5
Nursing interventions related to the teaching action type

Nursing interventions related to teaching	<i>N</i>
Medication regimen	196
Physical exercise/rest	193
Therapeutic self-management	177
Infection	119
Diet	118
Prevention of complications	98
Treatments	84
Sexual activity	12
Others (examinations, relaxation techniques, surgery...)	88

Discussion

In the period under analysis, a total of 1460 nursing consultations led to nursing records, which means that, although there may have been more nursing consultations, the lack of documentation makes them impossible to be quantified/analyzed. Thus, this result should be interpreted with caution, and an initial analysis does not show a small number of consultations per year. During the consultation, in addition to implementing the care plan, nurses must document the information gathered, processed, and recorded in SAPE. Nurses should be willing to implement an action plan that is adjusted to the actual needs of patients who are in a particularly vulnerable situation as a result of their specific health/illness transition experiences. "In this process, 'giving time' is an essential therapeutic dimension, because it will allow the person to become aware of what has changed and what is going to be different" (Brito, 2012, p. 149). It should be noted that the Ordem dos Enfermeiros (2014), in the guidelines for calculation of safe nursing allocations, establishes a mean time of 30 minutes for outpatient consultations and 75 minutes for home consultations (includes travel time). Therefore, the is-

sue of time deserves particular attention, not only in terms of patients' needs (the duration of the process of health/illness transition) but also health professionals' availability (the amount of time allowed by the system).

According to the nurses, the most common health-related topic during the outpatient consultation after liver transplantation is susceptibility to infection. To identify this topic, nurses focused on the fact that the success of liver transplantation depends on the transplant recipients' commitment to daily immunosuppressive therapy (Rodrigue, Nelson, Hanto, Reed, & Curry, 2013). As a result of immunosuppression, liver transplant recipients become susceptible to bacterial, viral, and fungal infections, as well as to the reactivation of a preexisting latent condition (Pedersen & Seetharam, 2014). During the outpatient consultation, nurses often identify this health-related topic as relevant to nursing practice because opportunistic infections are the leading cause of morbidity and mortality after liver transplantation (Pedersen & Seetharam, 2014). The risk of infection in liver transplant recipients depends on the level of exposure to infectious agents and the extent of immunosuppression (Fishman & Issa, 2010).

According to Carvalho, Salviano, Carneiro, and Santos (2007, p. 685), “the entire health team should emphasize the prevention and control of infection in immunosuppressed patients”, which is in line with the nursing interventions implemented by nurses within the domain of infection. According to the results of serological testing and epidemiological history, most nursing interventions are of the teaching action type because prophylactic strategies are based on the patient’s known or likely exposures to infection (Fishman, 2007). The analysis of the interventions implemented by nurses during the period under analysis showed that 57.07% of them are of the observing action type, with the purpose of “noticing and carefully watching somebody or something” (Conselho Internacional de Enfermeiros, 2016, p. 70). Therefore, this type of intervention does not translate into nursing-sensitive outcomes. It should be noted that these parameters, as observed by nurses, emerge from “physicians’ perception of the usefulness of those data in the early detection of intercurrent complications” (Mota, 2010, p. 69). The relevance assigned to information does not focus on the decision-making process, rather “the relevance of information is closely linked to the nature of the data, rather than to the business logic of looking at the resource - information” (Mota, 2010, p. 104). With regard to the informing action type, which represents 21.12% of the implemented interventions, 16.94% of them were of the teaching action type aimed at “giving systematic information to somebody about health-related subjects” (Conselho Internacional de Enfermeiros, 2016, p. 40), which may result in nursing-sensitive outcomes. In the teaching/instructing/training triad, teaching means providing systematic information, instructing means adding a technical component, and training means developing technical skills through repetition. Based on the above, the most common interventions in the model in force were of the teaching action type, which may be associated with the priority areas for nurses during outpatient post-transplant consultations. In general, these consultations do not include an instrumental component and, therefore, do not focus on the development of skills.

In the teaching domain, the priority area for nurses is the medication regimen because liver transplant recipients need to adhere to immunosuppressive therapy (Rodrigue et al., 2013) for successful transplantation.

Conclusion

Among the multiple health-related aspects which are relevant to nursing, nurses record aspects that focus particularly on the patient’s condition as a transplant recipient (as a patient taking immunosuppressive medication). Therefore, susceptibility to infection was identified in more than 60% of nursing consultations with these patients, during which the most common interventions related to teaching about prevention of complications and control of infection. Infection is a leading cause of post-transplantation morbidity and mortality. Therapeutic self-management is another relevant nursing focus, with Knowledge being the most important dimension for the diagnosis. In response to the identified health needs, nurses usually implemented interventions of the observing action type. With regard to the informing action type, nurses implemented interventions that focused on regimen characteristics, such as medication, diet, therapeutic self-management, prevention of complications, treatment, physical exercise/rest, signs of infection, and sexual activity. The implemented nursing therapeutics have referential integrity with the health-related aspects identified by nurses. Nurses were deeply concerned with patients’ self-monitoring and ability to early identify changes in body responses that could suggest the presence of complications.

The analysis of the nursing foci and interventions recorded by nurses proposes a reflection on the need to improve the documentation process during clinical practice. The greater visibility of nursing care will have a significant impact on the continuous improvement of care quality. Further studies should be developed to analyze the amount of time required or spent by nurses on the implementation of care plans, with the purpose of understanding the association between nurse staffing and the health care needs of liver transplant recipients during follow-up.

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