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**GAINS FROM NURSING INTERVENTIONS IN THE MANAGEMENT
OF ASCITES IN THE HEPATIC TERMINAL PATIENT:
LITERATURE REVIEW**

**GANHOS DAS INTERVENÇÕES DE ENFERMAGEM NA GESTÃO
DA ASCITE NO DOENTE HEPÁTICO TERMINAL:
REVISÃO DA LITERATURA**

**BENEFICIOS DE LAS INTERVENCIONES DE ENFERMERÍA
EN EL TRATAMIENTO DE LA ASCITIS EN EL
PACIENTE TERMINAL HEPÁTICO:
REVISIÓN DE LA LITERATURA**

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ABSTRACT

Objective: To identify the health gains resulting from nursing care interventions in the management of ascites in people with end-stage liver disease.

Methods: Secondary study conducted in a scientific database by the EBSCOhost platform, where inclusion criteria were selected in order to answer the PICO question previously outlined.

Results: After the research, 179 articles were initially found, of which five responded to the inclusion criteria defined. As a result of the interventions in nursing care, there were gains in client satisfaction, prevention of complications, well-being and self-care, functional re-adaptation and organization of health care, in alignment with the quality standards of nursing care.

Conclusion: Nursing interventions are fundamental in the management of ascites and other symptoms, improve the quality of life of these people and their caregivers, helping them to manage and deal with their disease.

Keywords: Ascites; Liver Diseases; Nursing Care; Palliative Care.

RESUMO

Objetivo: Identificar os ganhos em saúde resultantes das intervenções dos cuidados de enfermagem na gestão da ascite em pessoas com doença hepática terminal.

Métodos: Estudo secundário realizado em base de dados científica pela plataforma EBSCOhost, onde foram selecionados critérios de inclusão, de forma a dar resposta à pergunta PICO previamente delineada.

Resultados: Após a realização da pesquisa foram inicialmente encontrados 179 artigos, dos quais 5 deram resposta aos critérios de inclusão definidos. Decorrente das intervenções em cuidados de enfermagem emergiram ganhos na satisfação do cliente, na prevenção de complicações, no bem-estar e autocuidado, na readaptação funcional e organização dos cuidados de saúde, em alinhamento com o previsto nos padrões de qualidade dos cuidados de enfermagem.

Conclusão: As intervenções de enfermagem são fundamentais na gestão da ascite e de outros sintomas, melhoram a qualidade de vida destas pessoas e dos seus cuidadores, ajudando-os a gerir e a lidar com a sua doença.

Descritores: Ascite; Cuidados de Enfermagem; Cuidados Paliativos; Hepatopatias.

RESUMEN

Objetivo: Identifique los beneficios para la salud que resultan de las intervenciones de cuidados de enfermería en el tratamiento de la ascitis en personas con enfermedad hepática terminal.

Métodos: Estudio secundario realizado en una base de datos científica por la plataforma EBSCOhost, donde se seleccionaron los criterios de inclusión, a fin de responder a la pregunta PICO descrita anteriormente.

Resultados: Después de realizar la investigación, se encontraron inicialmente 179 artículos, de los cuales 5 cumplieron con los criterios de inclusión definidos. Como resultado de las intervenciones de atención de enfermería, surgieron ganancias en la satisfacción del cliente, prevención de complicaciones, bienestar y autocuidado, reajuste funcional y organización de la atención médica, en línea con las disposiciones de los estándares de calidad de la atención de enfermería.

Conclusion: Las intervenciones de enfermería son fundamentales en el manejo de la ascitis y otros síntomas, mejoran la calidad de vida de estas personas y sus cuidadores, ayudándoles a manejar y tratar su enfermedad.

Descriptores: Ascitis; Atención de Enfermería; Cuidados paliativos; Hepatopatías.

INTRODUCTION

The liver is an organ with numerous complex and dynamic functions, becoming sensitive to the development of diseases due to the abundance of entities it encompasses and their clinical variation⁽¹⁾.

Liver disease can present different forms of manifestation, depending on its etiology⁽¹⁾. However, the causes of liver disease with the highest incidence in Portugal are alcoholics and hepatitis C virus (HCV) and hepatitis B virus (HBV) infections, affecting more than 400 000 patients (about 3.5% of the Portuguese population), with some still to be diagnosed⁽²⁾.

This affects about 600 000 adults in the United States of America. The number of patients seeking medical care has increased 59% in the last decade and is now considered the 12th leading cause of death in the world. Combining the increased prevalence with the number of hospitalizations required due to decompensation of the disease, cirrhosis is considered a disease with a high cost for health services⁽³⁾.

In Portugal, in the year 2017 it was calculated that in 100 deaths 9.4 were due to liver cirrhosis, being considered a public health problem⁽⁴⁾. It is a pathology that affects mostly the male population, being responsible for 16.8% of male deaths in 2017, female caused 3.9%⁽⁵⁾. The Portuguese Society of Gastroenterology classifies liver cirrhosis as the fifth cause of early death⁽¹⁾.

Chronic liver disease is characterized as the progressive destruction of the liver parenchyma due to irreversible death of cells, tissues, structures and functions of the liver, causing a significant impact on morbidity, mortality and utilization of health services⁽⁶⁾.

This pathology presents several complications, such as esophageal varices, ascites, spontaneous bacterial peritonitis, hepatic encephalopathy that presents high mortality risk and affects up to 40% of this population. The treatment and prophylaxis of these complications, as well as early diagnosis have shown positive results in the survival of these patients in recent years⁽⁷⁾.

Liver disease also has a great negative impact on the economy and public health, highlighting the need to implement measures and entities that aim to improve screening programs and adopt interventions that encourage the correct use of alcohol, promote appropriate diets and exercise⁽¹⁾.

Compared to other pathologies, 72% of liver patients present poor quality of life, consequence of the high burden of symptoms and invasive procedures, even at the end of life, making early referral to palliative care an essential part of the procedure⁽⁸⁾.

The philosophy of palliative medicine care focuses on people and families facing a serious illness, focusing mostly on symptom relief while seeking the best treatments according to the patient's preferences⁽⁹⁾.

The World Health Organization predicts that up to 20 million adults worldwide may need palliative care. This figure includes approximately 1 million patients with cirrhosis and hepatocellular carcinoma⁽⁸⁾.

Informal caregivers face emotional and financial challenges in providing support to patients with cirrhosis. Approximately 40% of these caregivers report a large destructive impact on their lives, job loss or education plans. These responsibilities are more perceptible in those who have a closer relationship with the patient, as is the case with spouses, who usually reach exhaustion, depression and anxiety of the caregiver⁽⁸⁾.

It is crucial to include liver disease in the palliative care network, as the liver patient has to be managed in a multidisciplinary and interdisciplinary team, due to the specific characteristics of the disease progression at the end of life and the impact that these have on the patient and the household⁽⁴⁾.

In view of the above and assuming the relevance of nursing interventions in the care of the person with liver disease at the end of life, we define as a central objective for this integrative review of the literature:

- To identify the health gains resulting from nursing care interventions in the management of ascites in people with end-stage liver disease.

We believe that the results of this study can be an important contribution to the reflection on this problem and the relevance of nursing intervention in the care of the person with liver disease at the end of life and its caregivers, in favor of excellence care.

METHODS

Ethical aspects

The Ethics Committee was not asked to give an opinion, as this was a secondary study. The researchers were concerned to comply with the principles of integrity in research. The principles of clarity, precision and objectivity in the formulation of the problem were also respected, since the results should contribute to the resolution of health problems and should fit with the excellence foreseen in the quality standards of nursing care. The rigor of the methodological procedures was ensured, aiming at the validity of the study and the respect for the results obtained by the researchers involved in the studies under analysis. The reference of the authors was in line with good academic and scientific practices.

Methodological procedures

The choice of an integrative literature review had the purpose of accessing current knowledge on the problem under study and thus contributing to the incorporation of the findings of this study in practical contexts. The methodological procedures used involved the following steps: 1) identification of the starting question; 2) definition of inclusion and exclusion criteria for studies; 3) definition of the information to be extracted from the studies; 4) analysis of the included articles; 5) presentation and discussion of the results and 6) knowledge synthesis.

In formulating the research question the PI[C]OD methodology was used: population (P), type of intervention (I), comparisons (C), result – outcome (O) and type of study – design (D). In order to respond to the objective previously outlined and which served as a guideline for this integrative literature review, the following guiding question was elaborated: “What are the gains of nursing care (Outcomes) in the management of ascites (Intervention) in people with end-stage liver disease (Population)?”.

With the formulation of the research question, it was possible to proceed with the collection of data related to the subject under study during the month of March 2020 in the databases MEDLINE Complete and CINAHL Complete through the platform EBSCOhost.

The descriptors used in the research were: “Nursing”, “Nursing care”, “Nursing Intervention”, “Management”, “Ascites Management”, “Ascites”, “Liver Cirrhosis”, “Liver Disease”, “Palliative Care” and “End of Live Care”.

The inclusion criteria outlined privileged the articles with quantitative and/or qualitative methodologies, with full text (full-text), in Portuguese or English, from academic journals in the nursing area, with available references, with the date of publication between January 2015 and March 2020 and that answer the question outlined above. The exclusion criteria cover articles of ambiguous methodology, without correction, repeated in the various databases, with dates lower than 2015 and that have no relation with the objective of the review.

A total of 179 articles were identified in the used bases. The evaluation of the articles was done in two phases: in the first phase 21 articles were selected after the reading of the titles, and in the second phase after the reading of the abstracts the potential of 12 articles was verified. From these, 5 articles resulting from the methodological quality analysis were selected after full reading of the article.

Based on the five selected articles, the level of evidence was evaluated in order to assess their eligibility and safeguard the quality of the results, according to the Melnyk & Fineout-Overholt classification (2015)⁽⁹⁾.

The diagram below illustrates the process of selection and evaluation of the articles, previously mentioned, using the PRISMA flow diagram⁷.

RESULTS

In order to answer the PICOD question outlined above, the articles were read and analyzed. The results of the integrative literature review are described in Table 1⁷.

DISCUSSION

The discussion of the results obtained through the analysis of the articles selected in the integrative review of the literature allowed the selection of indicators according to the gains associated with nursing interventions.

The definition of categories was based on the statements described in the Regulation of Quality Standards of Nursing Care (2001)⁽¹⁵⁾ and assumed itself as an operation that allowed differentiating and regrouping the indicators by analogy to the statements. This process translated into sensible health gains resulting from nursing care interventions in the management of ascites in liver patients at the end of life, expressed in Table 2⁷. The following discussion was structured according to the categories defined in this analysis process.

Client satisfaction

The study by Day *et al* (2015)⁽¹⁰⁾ was conducted in order to explore the experiences of patients with refractory non-malignant ascites, who do not respond to high doses of diuretics or to a low-sodium diet, opting for regular paracentesis as a control method. The patients were very satisfied with the interventions of the specialist nurse during the procedure and with the configuration of the Day Unit.

Raising the awareness of professionals about the main problems of patients with ascites is essential to develop services that ensure the best possible care and environment⁽¹⁰⁾.

Prevention of complications

Refractory ascites management interventions include invasive procedures such as the use of peritoneovenous shunts, now virtually outdated due to complications, the ALFapump (automated low flow ascites pump) and TIPS (tranjugular intrahepatic port-systemic shunt). The meta-analyses that compared TIPS with large volume paracenteses reported that the former is more effective in reducing ascites recurrence, but have a higher incidence of hepatic encephalopathy (prevalence from 15% to 61%)⁽¹³⁾.

The use of TIPS and ALFApump is not indicated as a palliative intervention, however, its use can be considered to manage symptoms and as a possibility of treatment in the supporting discussions to establish future wishes⁽¹³⁾.

The use of PIPC (permanent indwelling peritoneal catheters) in end-stage liver disease and refractory ascites achieved 100% technical success, the rates of non-infectious complications were generally low (<12%) and there is no risk of death. The most feared complication is bacterial peritonitis, with a rate of 12.7%, not being considered high, due to the use of long-term prophylactic antibacterial therapy. The use of this slide increases the patient's autonomy and the possibility of community care, allowing the sick person to stay the rest of their life in their place of residence⁽¹³⁾.

Wellness and self-care

End-stage liver disease affects younger age groups compared to other end-stage diseases, making the need for treatment and symptom control essential⁽¹¹⁾.

It is challenging and complex to care for terminally ill liver patients due to the lack of holistic approaches, the high prevalence of depression and anxiety, the scarcity of social support and the high amount of symptoms that affect the quality of life of these people, making it necessary the collaboration of a multidisciplinary team and the use of specialized palliative care⁽¹¹⁾.

Early detection, continuous monitoring and timely management of symptoms result in increased quality of life⁽¹¹⁾. Many people with ascites who request high volume paracentesis can develop refractory ascites. This condition affects the quality of life of these patients, due to physical discomfort and the need for frequent hospitalizations to perform the procedure⁽¹²⁾.

Refractory ascites causes several physical problems, such as swelling, dyspnea, lack of appetite and fatigue, directing the focus of care to the relief of these symptoms. The performance of paracentesis, although not considered the best approach, offers patients, for brief periods, an improvement in physical and social capacity, which is much appreciated by them⁽¹⁰⁾.

The discussion about the quality of life of these patients is fundamental because it affects their physical, psychological and social capacity. In this sense the support of the nurse is essential to reduce psychological stress and to manage the symptoms improving their quality of life⁽¹⁰⁾.

Functional re-adaptation

Palliative care provides the early care plan, which benefits terminally ill liver patients with refractory ascites, as it helps and supports them to manage and live with the disease⁽¹⁰⁾.

A change in attitude among professionals towards symptom control, quality of life and timely referral to palliative care is also evident, recognizing that the patient must be involved in decisions about their care at the end of life⁽¹²⁾.

Attitudes towards the elements of palliative care are generally positive, particularly those related to increased focus on symptomatic treatment and opportunities to express their preferences for future care⁽¹⁴⁾.

The increase in consultation time (especially in diagnosis) may provide more opportunities for discussions on prognosis, disease trajectory and symptom control. This intervention is valued by patients and caregivers⁽¹⁴⁾.

Health care organization

People with end-stage liver disease and their families face high physical, psychological and social burdens up to the end of their lives, and their needs for support and palliative care, which are often incompatible with the health services available to them, stand out⁽¹⁴⁾.

The limitation in consultation time and the logistical difficulties related to transport are described as stressful and expensive, which compromises the control of symptoms. However, increased consultation time, better symptom management, help with logistical and financial issues and adequate bereavement support can improve care in practice⁽¹⁴⁾.

End-of-life needs are not met by existing services, there is a need to develop prospective studies that evaluate the palliative and supportive care interventions outlined for patients with end-stage liver disease⁽¹⁴⁾.

Most terminally ill liver patients die in hospital; however palliative care in the community is more appropriate and humanized. This option is generally not possible due to the complexity in meeting the needs of these patients and the fluctuating path of the disease, making it difficult to identify the palliative phase⁽¹²⁾.

Recurring hospitalizations impair the quality of life of terminally ill liver patients. The most appropriate option would be a holistic palliative care approach in the community, including discussions about future wishes. This strategy will require multidisciplinary work⁽¹²⁾.

The study by Macken *et al* (2018)⁽¹²⁾ raised the local profile of end of life liver patients, so far little researched, recognizing the need for communication and collaboration with a multidisciplinary team. After this study, in local hospitals, a multidisciplinary team began to discuss all end-of-life liver patients on a weekly basis in order to identify in a timely manner those who are beginning the palliative phase of the disease and drive improvements in recruitment.

Raising the awareness of professionals about the main problems of patients in relation to ascites is essential to develop services that ensure the best possible care in the right environment⁽¹⁰⁾.

Working across borders between the National Health Service and independent services, with specialist nurses in the community and intensive care, can facilitate access to palliative care and support patients who need it⁽¹⁰⁾.

The nursing team should assist in discussions of care planning with patients with non-malignant ascites. Increased research in this population to ascertain the incidence and benefits of advanced care planning can help to promote this method of treatment⁽¹⁰⁾.

Study limitations

The limitations of this secondary study stem from the heterogeneity of the studies involved and the different methods used. On the other hand, there is the non-inclusion of indexing bases for the production of higher education institutions, namely master's and doctoral dissertations, material not published in digital bases or even of other languages.

Contributions to the area

This study identified the health gains resulting from nursing care interventions in the management of ascites in people with end-stage liver disease, aligned with nursing care quality standards. Future studies should explore the experience of nursing care to the person with this problem, with two approaches. The first, related to the family's experience with the situation and context of care of the person with ascites, associated with end-stage liver disease. The second focus is related to the management of the care of the person and the family by the nurse, where the care provided should be oriented to emotional support, management of the processes of health-disease and training for self-care.

FINAL CONSIDERATIONS

With the realization of this integrative review of the literature it became evident the various health gains of nursing interventions coordinated and focused on the care of the sick person and the management of ascites in the liver patients at the end of life.

The authors of the analyzed articles highlighted the negative impact that ascites has on the life of liver disease patients, and that the proper management of symptoms generates gains in patient satisfaction, prevention of complications, well-being and self-care, functional re-adaptation and organization of health care. The role of health professionals is fundamental in the health education of these actors, in order to manage and deal with their disease.

The management of ascites in liver patients still raises some doubts about the best form of treatment, however patients are satisfied with the relief of symptoms and increased autonomy, even if it is temporary.

The progression of the disease aggravates the state of health of these patients, being fundamental the integration in palliative care, for a better management and acceptance of the disease, increase the quality of life and autonomy. Although it is not a recurrent practice in health services, studies have proven the benefits of referral to palliative medicine and the development of this approach in the community.

The interventions developed by the nurses are beneficial for the patients and for the management of health services, as they decrease the number of hospital admissions and consultations in primary health care, facilitate early discharges and decrease social isolation.

It was evident in all studies the lack of specialized approaches and services that respond to the needs of the end of life liver patients and their caregivers. There is still a long way to go to improve the care of this population.

Authors Contributorship

RS: Study design, data collection, storage and data analysis, review and results discussion.

RF: Study design, data collection and data analysis, review and results discussion.

MG: Review and results discussion.

JV: Review and results discussion.

TM: Review and results discussion.

All authors read and agreed with the published version of the manuscript.

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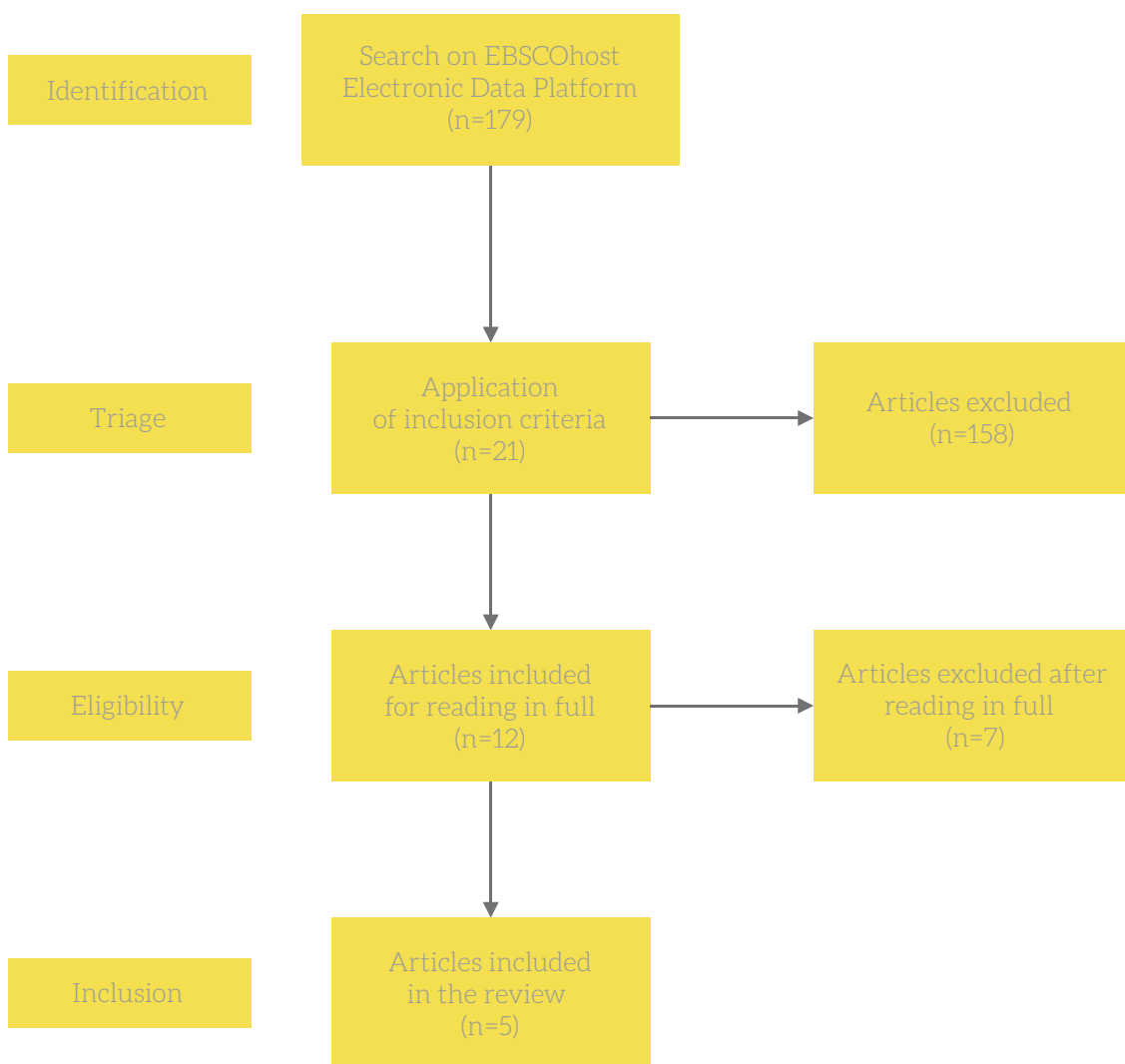


Figure 1 - PRISMA Diagram with the presentation of the research methodology.⁵

Table 1 – Results of the Integrative Literature Review.→⁶

Authors / Method / Level of Evidence and Participants	Intervention / Objectives	Results
<p>Day, Hollywood, Durrant & Perkins (2015)⁽¹⁰⁾ Method: phenomenological qualitative research. Level: VI Participants: Five (5) adults with non-malignant ascites.</p>	<ul style="list-style-type: none"> - Explore patients' experiences with ascites and their treatment; - Explore these patients' view of available services. 	<p>The physical discomfort and negative impact of ascites on social life was perceptible through the experiences of patients with non-malignant ascites. The study demonstrates the patients' satisfaction with the relief of symptoms and the management of their disease, through the performance of paracentesis by a specialist nurse, in a Day Unit.</p>
<p>Peng, Heggul, Higginson & Gao (2018)⁽¹¹⁾ Method: systematic literature review. Level: I</p>	<ul style="list-style-type: none"> - Describe the relationship of care to the quality of life of patients with end-stage liver disease in order to improve care; - Describe the prevalence of symptoms. 	<p>End-stage liver patients have lower quality of life compared to chronic liver patients due to the easy decompensation of the disease. The symptoms that most bother terminally ill liver patients are pain (30%-79%), muscle spasms (56%-68%), insomnia (26%-77%), erectile dysfunction (53%-93%), dyspnea (20%-88%), daytime drowsiness (29.5%-71%) and depression (14%-45%). In this sense, early detection, continuous monitoring and proper management of symptoms improve the quality of life of these patients.</p>
<p>Macken, Mason, Evans, Gage, Jordan, Austin, Parnell, Cooper, Steer, Boles, Bremner, Lambert, Crook, Earl, Timeyin, & Verma (2018)⁽¹²⁾ Method: randomized clinical trial. Level: II Participants: patients with refractory ascites (48).</p>	<ul style="list-style-type: none"> - Long-term use of abdominal drains in people with refractory ascites. 	<p>The use of the Rocket medical device is appreciated because it is easy to place, cheaper, and after placement in hospital, the drainage of ascetic fluid can be performed at home by community nurses, or even by patients/care providers, after being instructed. The study data suggests that approximately 40% of patients with ascites requesting large volume evacuating paracentesis may develop refractory ascites. This condition has a major impact on the quality of life of end of life liver patients due to the need for recurrent hospitalizations to perform the procedure. Foram observadas mudanças positivas nas atitudes, crenças, na prestação de cuidados na gestão de sintomas e no encaminhamento para os cuidados paliativos.</p>

Table 1 – Results of the Integrative Literature Review.⁴⁻⁵

Authors / Method / Level of Evidence and Participants	Intervention / Objectives	Results
<p>Macken, Hashim, Mason, Verma (2019)⁽¹³⁾ Method: systematic literature review. Level: I</p>	<p>- The experience of using the permanent peritoneal catheter in the management of Recurrent ascites in end-stage liver patients (PIPC).</p>	<p>The technical success rate of PIPC insertion in terminally ill liver patients with refractory ascites was 100% and there were no deaths related to the device. After placement of the catheter there was no need for hospital admission for treatment of ascites. However, the overall survival of patients after insertion of the device was limited, as expected, taking into account the etiologies of Refractory Ascites, values ranged from 29 days to six months. The rates of non-infectious complications were relatively low (12%). Patients reported improvements in mobility and daily life activities. The nursing team stated that the PIPC has benefited the Quality of Life and advocates the placement of the device.</p> <p>The use of PIPC in terminally ill liver patients is a palliative approach focused on symptom relief. Early palliative intervention in patients referred for liver transplantation evaluation has improved 50% of their symptoms.</p>
<p>Hudson; Hunt, Waylen, McCune, Verne, Forbes (2018)⁽¹⁴⁾ Method: qualitative study. Level: V Participants: patients (12) and informal caregivers (5).</p>	<p>- Explore the needs of terminally ill liver patients and their caregivers and assess how existing services meet their needs; - To examine the attitudes of these patients and caregivers towards palliative care.</p>	<p>Participants in the interviews describe a high load of physical and psychological symptoms, increasing their social isolation with the progression of the disease. They state that after the paracentesis they feel they can perform their tasks and enjoy social interactions. Although it is a limited sensation, because they feel more incapacitated and dependent when the next drainage approaches.</p> <p>The physical and psychological health of informal caregivers is also compromised, since they put the care of their relatives first.</p> <p>Communication/coordination between primary and secondary health care was considered weak, with patients preferring coordination and advice from specialist nurses.</p>

Table 2 - Health gains from nursing interventions in the management of ascites in people with liver disease at the end of life.^κ

Categories	Indicators
Client satisfaction	- Patient satisfaction ⁽¹⁰⁾
Prevention of complications	- Decrease in the rate of non-infectious complications ⁽¹³⁾
Wellness and self-care	- Relief/ symptom management ⁽¹⁰⁻¹²⁾ - Increased quality of life ⁽¹⁰⁻¹²⁾
Functional readaptation	- Controlling and living with the disease ⁽¹⁰⁾ - Involvement in care decisions ^(12,14)
Health care organization	- Access to specialized services ⁽¹⁰⁾ - Incompatibility of available services ⁽¹⁴⁾ - Reducing the pressure of hospital services ⁽¹⁴⁾ - Develop new approaches ⁽¹⁴⁾ - Facilitating advanced care plans ⁽¹⁰⁾ - Positive impact on professionals' attitudes ⁽¹²⁾