Review

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Review

Palliative Care in End Stage Liver Disease

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Abstract

Chronic liver disease is a significant global cause of morbidity and mortality. While early-stage liver cirrhosis is often asymptomatic, it can progress to a decompensated phase known as end stage liver disease (ESLD). ESLD poses a substantial global health burden, accounting for over two million deaths annually. Despite advancements in hepatology, many patients are ineligible for liver transplantation – the only curative treatment - resulting in a high symptom burden, diminished quality of life and frequent hospitalizations. However palliative care remains underutilized in this population. Globally, the integration of palliative care into ESLD is impeded by several barriers. Certain factors – such as advanced age, presence of hepatocellular carcinoma (HCC), and transplant listing status – have been associated with higher rates of palliative care referral. This review provides a comprehensive analysis of current literature, emphasizing the benefits of palliative care interventions in ESLD, including improved symptom control and enhanced quality of life. It also underscores the impact on caregivers and healthcare systems, notably in reducing hospital readmissions. We advocate for a paradigm shift toward proactive, patient-centered models that integrate symptom management, advance care planning, and psychosocial support alongside disease-specific treatments for patients with ESLD.

Keywords: end stage liver disease; hepatocellular carcinoma; hepatology; palliative care; symptoms

1. Introduction

Chronic liver disease is a leading cause of global morbidity and mortality, responsible for approximately 1 to 2 million deaths annually [1,2]. It frequently progresses to cirrhosis and its complications. Despite advancements in controlling viral hepatitis, alcohol consumption and Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) remain predominant causes of cirrhosis [1–3]. Progression to decompensated stages, acute-on-chronic liver failure (ACLF) [4,5], or hepatocellular carcinoma (HCC) [6,7] is associated with high mortality and often necessitates liver transplantation. However, the shortage of donor organs leaves many patients without a curative option [8,9].

Patients with end-stage liver disease (ESLD) also experience high rates of hospitalization and readmissions [10,11], leading to increased healthcare costs [12,13], and a significant proportion of deaths occur in hospital settings [14,15]. In this context, integrating palliative care into their management is vital to improve quality of life and offer comprehensive support.

2. Palliative Care: A Humanized Approach

Palliative care's foundational principles were established by Cicely Saunders, who emphasized alleviating patient suffering at advanced stages while maintaining dignity [16]. Since then, palliative care has evolved considerably, with the World Health Organization (WHO) recognizing its importance in its 1990 document, which has been updated over the years [17].

Palliative care is defined as specialized, multidisciplinary medical care aimed at addressing the physical, psychological, social and spiritual needs of patients and their caregivers, regardless of prognosis [17,18]. It can be applied at any disease stage, integrated with other treatments to promote symptom relief, enhance quality of life, and support families—without aiming to hasten or delay death.

This approach relies on a team consisting of physicians, nurses, psychologists, and social workers, ensuring personalized care and effective communication. Despite its importance, access remains limited, with the Lancet Commission estimating that 80% of the 61 million people who could benefit from palliative care do not receive it [19].

3. Palliative Care in End Stage Liver Disease

3.1. The Needs of Patients with ESLD

The SUPPORT study revealed that ESLD patients have a diminished quality of life, marked by multiple complex physical, cognitive, and social symptoms [10]. Common symptoms include pain, dyspnea, asthenia, and mental confusion [10,20]. These findings have been corroborated by other studies and synthesized in a 2019 meta-analysis by Peng et al., which reported symptom prevalence rates of approximately: 30-79% for pain, 20-88% for dyspnea, 56-68% for cramps, 52-86% for asthenia, and 7-64% for pruritus—considered a specific symptom in this patient group [21].

Symptom management remains inadequate, often due to fear of pharmacological toxicity [22–24]. However, evidence suggests that the adverse effects of opioids are minimal or not clinically significant, particularly regarding hepatic encephalopathy, when used appropriately for pain control [25]. As physical deterioration progresses, symptoms tend to worsen, often leading to frequent hospitalizations near the end of life [12,24]. Studies also indicate that patients in terminal phases are subjected to aggressive treatments during hospitalization [10,26].

In addition to the symptomatic burden, other studies have revealed the high level of emotional stress that patients with ESLD are subjected to [27], with data showing low knowledge about the disease and high levels of uncertainty regarding the course of their illness [28,29]. On the other hand, patients perceive a lack of integration of care, with recurrent changes in care teams and a lack of communication between hospital doctors and community care [28–30], although there is data showing the benefit of coordinated and integrated care between the various specialties that treat patients with cirrhosis [31].

3.2. The Evolution of the Implementation of Palliative Care in ESLD

Although the SUPPORT data highlights the particularity and complexity of ESLD patients [10]. It is in fact the study published by Poonja et al. in 2014 that has driven future research on palliative care in ESLD [32]. This study showed that, after exclusion from the liver transplant list, only 11% of patients were referred to palliative care [32]. In the subsequent years, research in this area increased, predominantly involving cohorts from the USA [13,26,33–36] and the United Kingdom [37–39]. With additional data from Canada [32], Portugal [40,41], Taiwan [42] and Australia [43,44]. Globally, however, data remain limited, and findings from the US may not be fully applicable elsewhere due to differences in healthcare systems [45]. Studies demonstrate that palliative care utilization has increased from initial rates of 10-20% to approximately 50%, differences which have proved to be statistically significant [32,34,43,46–49]. However, in recent years the rates have remained stable, which seems to suggest a plateau effect in referral to palliative care [48]. Several studies have also highlighted that palliative care interventions often occur late in the disease course [26,36,38,43,50]. In one study, 50% of patients were assessed by palliative care services only three days before death [34].

Growing evidence in this field led to the 2022 publication of the first recommendations by the American Association for the Study of Liver Diseases (AASLD) regarding the implementation of palliative care and symptom management in patients with decompensated cirrhosis [51]. In 2023, the

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same organization recommended integrating palliative care components within multidisciplinary teams to support therapeutic decision-making for patients with HCC [52].

3.3. Factors Associated with the Implementation of Palliative Care in ESLD

From the outset, a key issue has been determining the optimal timing for referring patients with ESLD to palliative care. Multiple studies have investigated the factors associated with the implementation of palliative care in this population. Table 1 summarizes (in alphabetical order) the factors that have consistently shown significance in multivariate analyses.

Table 1. Factors associated with the implementation of palliative care in ESLD.

	Favors referral	Does not favor referral
Active alcohol consumption	33,43	46,53
Hospital size	13,47,48,54,55	47
Gender	55	33,43,47-50,53,56
Older age	33,38,39,41,47,50,54,56,57	13,26,34,43,49,53
Presence of HCC	13,33,39,40,41,43,46-48,50,54,56	26,49,53
Presence on liver transplant list		26,33,36,48–50,57
MELD score	49,50,53,58	34,41,43,46,57
Type of decompensation (ascites or hepatic encephalopathy)	33,34,38,41,48–50,53,54	43

The factors most frequently examined in relation to palliative care referral include age, presence of HCC, and status on the liver transplant list. Consistent evidence indicates that referral to palliative care is more likely for older patients [33,38,39,41,47,50,54,56,57] and those diagnosed with HCC [13,33,39–41,43,46–48,50,54,56]. Conversely, being listed for a liver transplant appears to act as a barrier to palliative care referral [26,33,36,48–50,57]. Studies by Esteban et al. and Ufere et al. have previously highlighted that possession of an ESLD patient on the transplant list reduces agreement among specialists regarding referral to palliative care [59,60].

Several studies have attempted to demonstrate a relationship between Model for End-Stage Liver Disease (MELD) score, the associated mortality and the implementation of palliative care [49,50,53,58]. However, the studies have not been consistent, with data to the contrary [34,41,43,46,57]. In fact, there is data showing that even with low MELD scores, up to 70% of these patients can have a high symptomatic burden and poor quality of life [61].

Additional factors associated with increased palliative care referral include ongoing alcohol consumption [33,43] and treatment at larger hospitals [13,47,48,54,55]. This last finding can be explained by greater availability of resources and thus structured palliative care services. The type of decompensation also influences referral patterns; chronic and predictable conditions such as ascites or hepatic encephalopathy are linked to greater palliative care engagement [33,34,38,41,48–50,53,54].

Recently, in a study published by Homann et al., the Surprise Question (“would I be surprised if a patient were to die?”) was shown to be a good prognostic indicator of mortality when answered by hepatologists. Additionally, it proved to be a useful screening tool with good sensitivity for identifying patients with ESLD at higher risk of death who may benefit from palliative care [62].

3.4. Barriers to Early Implementation of Palliative Care in ESLD

Despite the high morbidity and mortality which underscore the importance of early palliative care integration, several barriers hinder its implementation. These obstacles can be grouped into three main categories: system-dependent factors (mainly due to the scarcity of resources within palliative care teams), clinician-related factors (particularly the uncertainty surrounding prognosis and the fear that referring patients to palliative care may negatively influence their outlook), and patient-related factors (often due to the negative stigma associated with palliative care) [30,60,63,64].

In fact, a study conducted by Donlan et al. concluded that ESLD patients had limited knowledge of palliative care, which was generally associated with end-of-life care [63]. In that study, as well as in the study by Abasseri et al., once a more contemporary definition of palliative care was presented, there was near-unanimous agreement on the need for its early implementation along the disease trajectory [63,65].

Furthermore, being on the liver transplant waiting list represents another major limitation to the implementation of palliative care. Studies have shown that ESLD patients listed for liver transplant receive lower-quality care in advanced stages of the disease, including during the end-of-life phase [66].

Table 2. Barriers to the implementation of palliative care in ESLD (adapted from references 45,60,64,67,68).

Dependent on the healthcare system	Dependent on clinical care teams	Dependent on the patient
Lack of comprehensive palliative care coverage	Limited training or unclear role of palliative care in ESLD	Lack of understanding of disease trajectory and prognosis
Shortage of human resources in palliative care teams	Limited time during routine consultations	Sometimes unrealistic prioritization of curative options
Limited training in palliative care	Difficulty in addressing end-of-life care	Association of palliative care with end-of-life care
	Fear of the negative impact that referral to palliative care may have on patients listed for liver transplant	
	Late referral	

3.5. The Impact of Palliative Care Intervention in ESLD

3.5.1. On the Patient

Multiple studies have demonstrated that palliative care improves symptom control and enhances quality of life in ESLD patients [35,69,70]. The pioneering study by Baumann et al. demonstrated that referring patients on the liver transplant waiting list to palliative care led to symptom improvement [35]. In this study, the researchers were able to significantly reduce several symptoms - such as pruritus, appetite loss, and fatigue - which had previously been perceived as moderate in intensity, in addition to improving patients' overall sense of well-being [35].

A pilot study conducted by Quinn et al. showed that close follow-up by palliative care specialists enabled early recognition and stabilization of symptoms [71]. Another study by Shinall et al., despite recruitment challenges, was able to demonstrate that regular palliative care follow-up increased the number of days patients remained out of hospital [69].

In 2023, a study demonstrated that patients with ESLD often have a misperception of their prognosis, tending to be overly optimistic [72]. Another study highlighted the importance of clear and empathetic communication when delivering the diagnosis of ESLD, and how this influences the patients' emotional response [73].

Discussions about advance care planning provide opportunities to inform patients about disease expectations, clarify doubts, and align care with personal values [74]. Although data show that ESLD patients are generally open and willing to discuss advance care planning - especially with their usual care team [75,76] - these conversations rarely take place and typically occur in an inpatient setting during acute episodes of decompensation [64,74,77]. Such discussions are even less frequent among patients on the liver transplant waiting list [78].

One commonly cited barrier to implementing advance care planning is the limited time available during outpatient consultations [28,64]. A study by Lamba et al. showed that early integration of palliative care increased the rate of advance care planning discussions from 2% to 38% [79]. This finding has been supported by more recent studies, which confirmed a higher frequency of advance care planning among ESLD patients followed by palliative care teams [43,80].

In fact, research has highlighted the role of palliative care in providing educational and emotional support to ESLD patients, facilitating the development of a personalized care plan [81,82]. Several models have already been proposed to assist healthcare professionals in communicating prognosis with ESLD patients, including the Best Case/Worst Case framework [83], and even video-based informational tools delivered through digital platforms [84].

3.5.2. On the Caregivers

Several studies have demonstrated the negative impact that ESLD has on caregivers, particularly regarding psychological and financial burdens [22,30,85,86]. Commonly reported symptoms include anxiety, depression, and insomnia [87,88]. This symptomatic burden is often associated with factors such as alcohol use, the presence of hepatic encephalopathy, the severity of underlying liver disease, uncertainty regarding prognosis, and frequent hospitalizations [28,30,85,86].

Furthermore, when hepatic encephalopathy occurs, family members or caregivers often become the primary decision-makers. One study revealed that family members have significant difficulty coping with the end-of-life process [28], and a lack of information about the disease may shift the family’s focus toward the curative goal of liver transplantation [81]. In many cases, family members serve as informal caregivers – roles frequently marked by uncertainty [28,86,89].

One study showed that regular support for the patient helped improve the quality of life of informal caregivers [70]. Many interventions focus on caregiver education and empowerment, particularly in managing treatment regimens and recognizing warning signs – needs widely acknowledged by caregivers themselves [86]. This is especially important because family members play a crucial role in providing emotional support and assisting with decision-making [73].

3.5.3. On the Healthcare System

Shinall et al. demonstrated that regular palliative care intervention following hospital discharge resulted in reduced hospital readmission rates and a greater number of days spent out of the hospital [69]. These findings are supported by other studies showing significant decreases in 30- and 90-day hospital readmission rates [33,54,56,90], as well as a reduction in average length of hospital stays [13,33,44,54,80]. Additionally, referral to palliative care has been associated with increased referrals to long-term care facilities such as nursing homes or hospice services [43,44,49,56,77,80].

Multiple studies have also shown that that implementing palliative care leads to direct healthcare cost reductions – up to 50% in some cases [13,33,36,43,48]. This is achieved either through decreased utilization of diagnostic tests [13,43,48] or by more appropriate resource allocation, such as reducing intensive care admissions through predefined care limits [49,90].

4. Discussion

ESLD represents a critical phase of chronic liver disease, marked by a high symptom burden, frequent hospitalizations, and poor prognosis. Patients with ESLD often endure distressing symptoms – such as fatigue, pain and pruritus – many of which remain inadequately addressed within routine hepatology care. The dominant clinical emphasis on liver transplantation as the only curative modality frequently overshadows the need for supportive and palliative care. Despite the considerable morbidity and mortality associated with ESLD, palliative care remains underutilized. Although referral rates to palliative care are increasing, they often occur late in the disease trajectory – typically near the end of life – thereby limiting the potential therapeutic and psychosocial benefits. Delayed referrals reduce opportunities for symptom management, advance care planning, and psychosocial support. It is imperative to reframe the role of palliative care within the healthcare system: it should not be viewed as a sign of therapeutic failure but as an essential component of comprehensive care for patients with liver cirrhosis and other serious illnesses.

We recognize that the clinical trajectory of ESLD is unpredictable, often characterized by episodic decompensations. This fluctuating course complicates timely prognostication and the initiation of goals-of-care discussions. Also, misconceptions about the role of palliative care among clinicians and patients can serve as barriers. However, the growing body of evidence in the context of ESLD demonstrates that palliative care as a positive impact. This translates in improved symptom control of ESLD patients, caregiver support and reducing resource utilization by preventing and decreasing recurring cycles of avoidable hospital admissions.

Integrating palliative care into the management of ESLD requires a paradigm shift. Early introduction of palliative principles, preferably at the time of diagnosis of decompensated cirrhosis, can aid in symptom control, psychosocial support, and advance care planning. Interdisciplinary models that combine hepatology and palliative care expertise are emerging as promising strategies for management of ESLD patients and their families.

5. Conclusions

ESLD is a progressive, life-limiting disease that demands a comprehensive, patient-centered approach. Palliative care has been shown to enhance quality of life, alleviate symptom burden, and support complex decision-making in patients with chronic illnesses, including ESLD. The timely and routine incorporation of palliative care principles into ESLD management should become a standard component of best practices in hepatology.

6. Future Directions

We identified some areas that warrant further analysis. Future research should focus on evaluating the effectiveness of specific palliative interventions and identifying the most appropriate models of care. Clear, consensus-based guidelines are needed to define the timing, scope, and structure of palliative care in ESLD – particularly whether it should be delivered as a consultation service or through co-management. Innovative care models, such as embedding palliative care specialists within hepatology teams or establishing joint hepatology-palliative care clinics, may enhance care coordination and outcomes.

Additionally, particular attention must be given to ESLD patients on the liver transplant waiting list. Despite their complex needs, studies consistently report low rates of palliative care involvement in this population.

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