

The Importance of Health Care Providers in Improving the Outcomes of Liver Patients

Faisal Hunaythil Almuraykhi¹, Shifaa Rida Alshaban², Khalil Ibrahim Aljuffali³, Abdullah Ali Saleh Alwaqisi⁴, Majed Abdrabarasool Al Sager⁵, Ahmad Habib Ali Aljomia⁶, Sukina Ebrahim Alradwan⁷, Hussain Essa Ali Alsalm⁸, Hawra KhudhairAldhamin⁹, Zahrah Ali Ahmad Al Ali¹⁰

¹Ras Tanura Hospital, Nursing technician, Email: falmuraykhi@moh.gov.sa

²Ras Tanura Hospital, Nursing technician, Email: salshaban@moh.gov.sa

³Ras Tanura Hospital, Nursing technician; 0121557, Email: kalmishal@moh.gov.sa

⁴Nursing, Ras Tanura Hospital; 0121542, Email: aalwaqisi@moh.gov.sa

⁵Nursing technician, Safwageneral hospital; 0122220, Email: malsager@moh.gov.sa

⁶Nursing Assistant, Safwageneral hospital; 3828428, Email: aaljomia@moh.gov.sa

⁷Nursing technician, Al-Awjam Health Center, Email: sealradwan@moh.gov.sa

⁸Nursing, Erada complex and Mental health in Dammam; 2570162, Email: healsalim@moh.gov.sa

⁹Specialist-Nursing, Ras Tanura, 51543394, Email: hkaldhamin@moh.gov.sa

¹⁰Ras Tanura Hospital, Nursing technician, 3838905, Email: zalebrahimalali@moh.gov.sa

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ABSTRACT

According to the Centers for Disease Control & Prevention, an estimated 2.7–3.9 million individuals in the United States are currently afflicted with chronic hepatitis C virus (HCV). It is assessed that around twenty-five percent of individuals in the United States who are living with human immunodeficiency virus ([HIV] PLWH) are additionally living with hepatitis C virus. PLWH who are living with hepatitis C virus are at an elevated possibility of rapid progression of decompensated hepatic illness & hepatic fibrosis, as demonstrated by numerous studies. Chronic liver diseases have become a significant global challenge as a result of their elevated occurrence, significant burden on healthcare systems, and marked death rates. Conversely, the role of nurses in treatment of cases who have hepatic illnesses is less well-developed in numerous countries than it is in the case of other chronic conditions, involving chronic obstructive pulmonary illness, diabetes mellitus & heart failure. In the past, it has been discovered that cases with hepatitis C virus & cirrhosis utilize healthcare services more frequently due to the presence of advanced illness. Although illnesses & medical comorbidities account for a significant portion of differences in readmission rates & costs, they don't entirely elucidate the situation. It is intriguing that a recent effort to standardize and optimize management of chronic illness was unsuccessful in reducing readmissions or enhancing the quality of life of cases having chronic liver illness.

Keywords: Health care providers, Outcomes, Liver patients

INTRODUCTION

Approximately twenty-five percent of people living with HIV additionally have an infection with chronic hepatitis C virus, according to the Centers for Disease Control & Prevention. PLWH who are living with HCV are at a greater probability of rapid progression of decompensated hepatic illness & hepatic fibrosis, according to research. Consequently, it is imperative to prioritize the management of PLWH & hepatitis C virus with direct-acting antiviral (DAA) therapy. Guidelines for the commencement of antiretroviral treatment for individuals with human immunodeficiency & hepatitis C virus are provided by the Department of Health & Human Services and the American Association for the Study of Liver Diseases/Infectious Disease Society of America. In order to initiate DAAs in people living with HIV/HCV coinfection, it is necessary to possess expertise in pharmacology & drug therapy. (1,2)

According to the Centers for Disease Control and Prevention, an estimated 2.7–3.9 million individuals in the United States are currently afflicted with chronic HCV. The occurrence of HCV in the United States is evaluated to be approximately twenty-five percent of the population living with human immunodeficiency virus (3). PLWH who are living with hepatitis C virus are at a greater probability for rapid development of decompensated hepatic illness and hepatic fibrosis, as demonstrated by multiple investigations (4,5).

The role of nurses in care has become increasingly important. alterations that were initiated prior to the COVID-

19 pandemic have been highlighted by the pandemic. The scarcity of nurses has resulted in significant issues in numerous countries and has had a significant adverse effect on cases care. Nurses are essential in numerous areas as they possess significant autonomy in the treatment of cases who have chronic and acute conditions in both 1st care settings and hospital. Additionally, they have the authority to prescribe drugs in countries where this is legal. Nevertheless, the application of these adjustments in different geographical regions is inconsistent as a result of variations in local legislation and nurse education programs (6).

Chronic liver diseases have become a significant global challenge as a result of their elevated occurrence, significant burden on healthcare systems, and pronounced death rates. Conversely, the role of nurses in the treatment of cases who have hepatic illnesses is less well-developed in numerous countries than it is in the case of other chronic conditions, including chronic obstructive pulmonary illness, heart failure, & diabetes mellitus. Additionally, the quantity of nurse-led investigation in hepatic illness is significantly lower than that of other chronic illnesses. This is an unfortunate, as the inclusion of nurses in interprofessional teams would enhance the overall care of case who have hepatic illness and might additionally contribute to the reduction of the global burden of liver illnesses (7).

In the past, it has been discovered that cases who have hepatitis C virus and cirrhosis experience increased healthcare utilization as a result of their more advanced illnesses (8,9). Although illnesses and medical comorbidities account for a significant portion of the variance in costs and rates of readmission, they don't entirely clear the picture. It is interesting that a current attempt to standardize & optimize treatments of chronic illness was unsuccessful in reducing readmissions or enhancing the quality of life of cases with chronic hepatic illness (10). This suggests that factors other than the cause, complications & management of the underlying hepatic illness affect utilization in this population.

Nursing role in treatment of complications of cirrhosis

The significance of nurses in the care of hospitalized cases who have decompensated cirrhosis has been extensively examined in other places. A comprehensive evaluation encompasses the evaluation of additional symptoms that exert additional stress on the cases, risk prevention (e.g., malnutrition, falls, delirium), & the observation of indications of decompensation (e.g., hemorrhage, alterations in mental status, jaundice, accumulation of fluid.). Nurses must be able to identify cases' additional symptoms, including breathlessness, pain, difficulty sleeping, and/or anxiety, in addition to the specific indications of the illness (11).

It is crucial to comprehend the severity of these experiences, the factors that exacerbate or alleviate symptoms, & their influence on daily life from the cases' perspective. Additionally, psychosocial factors must be investigated for recognizing supplementary requirements associated with an elevated dependence on personal care, apprehensions regarding mortality, or the cessation of hazardous behaviors, among others (12).

Intensive Care of the cases with Cirrhosis

A team approach that includes clinicians who are experts in both critical care and hepatology is beneficial for cases who are being treated in the intensive care unit who have cirrhosis. The objectives of therapy are to prevent the worsening of function of liver, remediate precipitating factors, and provide support to organs that are failing. In certain cases, liver transplantation is necessary to enhance their quality of life and survival.

Monitoring and Hemodynamics

cases might be hypotensive regardless of the existence of a hyperdynamic state and their inability to respond to a volume challenge. The manipulation of intravascular volume may be used to evaluate the reduction in ventricular compliance. That is, the alteration in central venous pressure (CVP) following a fluid challenge is more informative compared to a single measurement of the central venous pressure. The presence of ascites leads to a rise in intra-abdominal pressure, which in turn reduces thoracic compliance. This, in turn, elevates the measured central venous pressure without a corresponding elevation in ventricular Preload. Echocardiography provides a significantly more comprehensive evaluation of the response to ventricular function and volume infusion. Echocardiography is a noninvasive procedure that might be considered inexpensive. The analysis of stroke volume difference from an arterial catheter may be used to evaluate the effect of phasic rises in intrathoracic pressure on venous return and cardiac output in the cases who isn't breathing spontaneously. Pulmonary artery catheterization is necessary to assess the pulmonary artery and pulmonary artery occlusion pressures due to the association between cirrhosis and pulmonary hypertension (13).

Possible roles of health care providers in the treatment of cases having chronic hepatic illnesses in the hospital setting

Clinical pharmacy services are crucial in healthcare settings due to factors like multiple diseases, advanced age, severe illnesses, and polypharmacy. In patients with complex treatment regimens, drug-related problems increase, posing challenges for healthcare professionals. In order to enhance the results of treatment, clinical pharmacists (CPs) provide crucial services such as reconciliation, medication management, comprehensive

review, pharmaceutical care, cases education, and counseling. The validity of these services has been established through academic literature and clinical investigations. Diabetes, cardiovascular diseases, failure of the kidneys, hepatic failure, gastrointestinal illness, chest illness, and hematological illness are among the conditions that clinical pharmacists are predicated to treat. The efficacy of cases management may be considerably improved by incorporating these services into daily healthcare routines and bolstering the role of the clinical pharmacist (14).

HCV DDI counseling & screening

There are numerous DDIs that must be taken into account when using DAAs, such as ART and frequently utilized OTCs such as proton pump inhibitors. The clinical pharmacist must perform a comprehensive assessment for DDIs & evaluate for novel drugs at each visit before initiating DAA treatment in PLWH. A compendium for prevalent DDI is provided by the DHHS & AASLD/IDSA guidelines & drug search engines (15). The clinical pharmacist must advise the cases on frequent DDIs & advise them to consult a healthcare provider prior to initiating any novel drugs or OTCs at each encounter.

HCV & IV medication counseling with regard to frequent AES

AEs might complicate concurrent management with DAA & ART treatment, which could compromise adherence and therapy efficacy. It is imperative that the clinical pharmacist evaluate for any AEs that might impede or exacerbate drug adherence (16). The cases must be informed of possible AEs related to DAA throughout their 1st visit by the clinical pharmacist. Patients must be encouraged to report any AEs throughout management by contacting the clinical pharmacist throughout monitoring visits. The clinical pharmacist must look for any AEs & help in addressing them.

HCV counseling regarding V treatment outcomes & possibility of reinfection

The clinical pharmacist must advise the cases on the importance of adherence in attaining SVR and the high probability of obtaining a sustained HCV virologic response (17). It is important to inform cases that reinfection isn't prevented by either persistent HCV antibody positivity or curative treatment. The necessity of education regarding reinfection has been underscored by a meta-analysis that has determined that cases who are coinfecting with HIV/HCV are at an elevated probability of reinfection (18). It is advisable to conduct ongoing assessments for reinfection in cases who are at risk of reinfection, such as those who have used injection drugs and have shared syringes or equipment, as well as males who engage in sexual activity with other males (19). Additionally, counseling on how to mitigate these risks is suggested.

Possible roles of nursing care in the treatments of cases having chronic hepatic illnesses in the hospital setting

For numerous years, the 1st role of nurses in the hospital context has been to provide care to cases who have hepatic illness, with a special focus on viral hepatitis, especially HCV. In a multidisciplinary approach to the management of cases who have HCV, nurses have collaborated with pharmacists, psychologists, social workers and hepatologists. Nurses have been helpful in the provision of comprehensive care to these cases, as well as in the enhancement of adherence to therapies & the provision of pretreatment education, as well as in the control & assessment of cases throughout therapy (20).

However, the nursing care of cases who have hepatitis C remains crucial, regardless the current introduction of direct antiviral agents that are more safe & efficient than traditional interferon-based treatments.(21).

The management of cases with decompensated cirrhosis is an emerging role for nurses with training in hepatology. Educational & lifestyle interventions that are typically not provided by managing clinicians might be significantly beneficial in the treatment of cirrhosis, which is distinguished by a number of complications. Exercise, adherence to prescribed drugs, judicious utilization of laxatives, dietary habits, self-control of heart rate & arterial pressure in cases under beta-blocker treatment, skin care in cases with leg swelling to avoid infections, & glucose control in cases having related diabetes are all possible significant areas for educational interventions. A nursing cirrhosis consultation must be developed for cases who have cirrhosis. This consultation must be led by a nurse practitioner who has both training and expertise in treating cases who have cirrhosis, and it must be easily accessible to a hepatologist for the purpose of discussing or referring cases (22).

This nursing care for cases having cirrhosis has the potential to decrease the elevated rate of readmissions to the hospital among cases who have decompensated cirrhosis. Although not assessed in randomized investigations, telephone treatment could additionally be beneficial in the provision of appropriate care to cases having decompensated cirrhosis. In the same way as cirrhosis, the integration of nurses into multidisciplinary teams that treat cases having hepatocellular carcinoma might be highly beneficial for their care (23).

Engagement of 1st care nurses on detection & treatments of chronic hepatic illnesses

In the context of the expanding epidemics of chronic hepatic illnesses around the globe, especially NAFLD, 1st

care might have an important role in recognizing of cases in the early stages of the illness. The recognition of cases in the early phases prior to cirrhosis develops might enable early interventions that might prevent the development of the illness or even reverse liver fibrosis, as a result of the prolonged period of inflammation of liver, which might last for decades. Nevertheless, there is a significant deficiency of awareness and knowledge regarding illnesses of the liver in 1st care, which is evident on the part of both general practitioners and nurses. The prevention of illnesses of the liver requires the training and education of 1st care GPs and nurses. Therefore, the commission that assessed illnesses of the liver in the UK strongly advised that they be included in the list of chronic illnesses that are actively managed in 1st care, including chronic obstructive pulmonary illness, , arterial hypertension and diabetes (24).

Current research suggests that cirrhosis is more likely to progress in cases who are members of high-risk populations, as those having obesity, type-2 diabetes & metabolic syndrome, as well as those who consume alcohol in excess (more than twenty-one units weekly for men and more than fourteen for women) and those who are at an elevated possibility of contracting the hepatitis C or B virus (iv medication use, transfusions of blood before to the 1990s, and sexual risk behavior) (25).

In these high-risk populations, 1st care nurses must be actively involved in the detection of cases having chronic liver illness and in the evaluation of the degree of fibrosis involved. The case of NAFLD is especially indicative. Detection might be accomplished by transient elastography or evaluating serum fibrosis scores. The severity of fibrosis is correlated with serum fibrosis scores, such as NFS (NAFLD fibrosis score) or FIB-4, which are readily determined using standard laboratory tests. Their principal utility is to exclude the existence of significant hepatic fibrosis in cases with risk factors for NAFLD. A procedure known as transient elastography is typically conducted by trained nurses. This technique evaluates the rigidity of liver tissue by measuring the velocity of a wave passing through it (26).

The role of specialist nurses in liver illnesses

Some countries, typically in large university institutions, have integrated nurses with advanced expertise in hepatic illness into the teams that treat cases having cirrhosis. Outpatients are the primary focus of their responsibilities, and they typically have significant autonomy in the delivery of care, despite the fact that their roles might vary between centers. In addition, they might provide assistance to ward nurses in the process of discharge planning, which is a critical component of an integrated care model. This paper refers to all non-ward nurses who have extended responsibilities in the care of cases having cirrhosis as advanced practice nurses (APNs), despite the fact that the formal education & job titles needs of these nurses vary among countries (27).

APNs are members of team of nursing, but they typically possess supplementary training, typically a PhD or master's degree, which allows them to provide expert treatment to a particular clinical population. In certain countries, like the United Kingdom, there are specialist nurses who have received training in a particular field without obtaining a master's degree. In certain countries, nurses are legally allowed to engage in non-medical prescribing, although it may necessitate the fulfillment of a formal educational qualification (see below). This allows advanced practice nurses to initiate or adjust the dosage of certain medications that are administered to cases having decompensated cirrhosis, including beta-blockers and diuretics. In spite of the scarcity of data, there are investigations that advocate for the incorporation of advanced practice nurses or specialist nurses into care models for cases having cirrhosis. For instance, in Australia, the quality of care & attendance at outpatient clinics were both improved as an outcome of case treatments by specialist nurses with improved education (28).

An investigation conducted in the United Kingdom demonstrated that a dedicated nurse-led follow-up had a beneficial effect on the quality of life and care coordination of cases. Furthermore, data from the United States indicates that the quality of care and cases findings were enhanced by the close collaboration of advanced practice nurses with hepatologists/gastroenterologists. Ultimately, an investigation conducted in Italy demonstrated that a general practitioner, specialist nurses & multidisciplinary team of physicians who were responsible for the care of cases having decompensated cirrhosis who were discharged from the hospital was capable of not only reducing readmissions to the hospital but additionally significantly improving survival. These results underscore the significance of team-based approaches that involve advanced practice nurses or specialist nurses in cases treatments, thereby enabling the implementation of efficient high-level decision-making and the identification of complex requirements through the implementation of appropriate interventions. Nevertheless, there is a lack of data and a demand for additional research on the optimal approach to healthcare in decompensated cirrhosis (26).

Possible roles of nurses in hepatic illnesses

Recent research suggests that chronic hepatic illness may be diagnosed at an early stage of the progression of chronic hepatic fibrosis & inflammation. This period is typically extremely lengthy, lasting over twenty years on average, and is asymptomatic. Consequently, the initial phases of the illness offer a prolonged diagnostic window. In individuals with risk factors for illnesses of the liver, like obesity, diabetes mellitus, elevated consumption of alcohol, or other factors associated with metabolic syndrome, a proposed strategy

involves the utilization of non-invasive markers of fibrosis of liver. Serological scores, including the APRI, FIB-4, & NAFLD fibrosis score, are among the non-invasive markers for hepatic fibrosis. Other non-invasive tools that have greater accuracy, like transient elastography, may be utilized as well but, unluckily, they are rarely accessible, especially in 1st care (26).

The presence of nurse-led chronic care clinics in primary care or hospital care offers a distinctive opportunity for recognizing individuals with risk factors for chronic hepatic illness & to evaluate non-invasive serologic markers of fibrosis in these a greater risk people. cases having type 2 diabetes are a population of special interest, as they exhibit an elevated incidence of liver fibrosis/cirrhosis. Primary care nurses would be able to recognize people with risk factors for chronic hepatic illness & identify those with an elevated probability of hepatic fibrosis. They could then refer them to specialized care & provide counseling to enhance lifestyle factors to decrease the possibility of hepatic illness (30).

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