Nurses' Performance Regarding Prevention of Hepatitis C Virus for Patient on Hemodialysis

Thesis

Submitted for Partial Fulfillment of the Requirement of
Master Degree in
Medical – Surgical Nursing (Critical Care Nursing)

By

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List of Abbreviations

AAMI ..... Association for Advancement of Medical Instrumentation .

AORN ..... Association of peri-Operative Registered Nurses

APIC..... Association for professionals in infection control

AVF ..... Arteriovenousfistula

CDC..... Centers for disease control and prevention

DAAs ..... Direct-acting antivirals

EASL..... European Association for the Study of the Liver

EDHS ..... Egyptian Demographic Health Survey

EHIS..... Egypt Health Issues Survey

FDA ..... Food and Drug Administration

HCC..... Hepatocellular carcinoma

HCV..... Hepatitis c virus

HCW ..... Health care worker

HCVab..... Hepatitis c virus antibodies

HD..... Hemodialysis

HDF ..... hemodiafiltration

HICPAC ..... Healthcare Infection Control Practices Advisory Committee

MOHP…….. Ministry of Health and Population

PegIFN..... Pegylated interferon

PPE ..... Personal protective equipment

PWIDs..... People who inject drugs

RBV ..... Ribavirin

RNA..... Ribonucleic acid

RT-PCR..... Reverse transcriptase polymerase chain reaction

SVR..... Sustained virological response

WHO ..... World Health Organization

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ABSTRACT

Hepatitis C virus (HCV) remains common in patients undergoing regular hemodialysis. Patients with renal failure who undergo hemodialysis have immuno suppression that makes them much more vulnerable to acquire hepatitis c viruses.**Aim of the study:** to assess nurses' performance through assess nurses' knowledge, practice and attitude regarding prevention of hepatitis C virus transmission for patient on hemodialysis. **Research design:** A descriptive design was utilized. **Methods:** All available nurses working in Hemodialysis units at El Fayoum University Hospitals; 30 nurses from both genders, with different ages, educational levels and years of experience was selected for this study. **Tools were** obtained through three main tools; Self-administered questionnaire sheet, observational checklist andNurses' attitude Likert scale. **Results:** Nurses had satisfactory level of knowledge and incompetent practice in hygienic precaution, equipment and waste management. More than half of nurses have negative attitude. There was statistically significance relation between level of knowledge and practice. Knowledge, practice was found to be statistically significant relation to demographic data. **Recommendation:** Designing nurses' educational program to improve nurse's knowledge and practices for prevention of hepatitis C virus transmission in hemodialysis unit. Close supervision and teaching on job is needed to ensure that quality of care is provided by nurses. The study should be replicated on large sample & in different hospitals setting in order to generalize the results.

Key words: Nurses' knowledge, Practice, Attitude, Hepatitis C virus prevention, Hemodialysis units.

Introduction

Hemodialysis is a life-saving technique that is used most commonly in patients with acute or chronic renal failure. It is used less commonly to remove drug following drug overdose to restore electrolyte imbalances or to remove fluid in states of fluid overload. Dialysis patients are at risk for contracting blood borne infections including hepatitis viruses because of their immunosuppression and lengthy and repeated vascular access necessary for hemodialysis **(Abed Elsatar &Elhefnawy, 2013).**

Healthcare-associated infections are a major risk to patient safety. Infection is the first cause of hospitalization and the second most common cause of mortality among hemodialysis (HD) patients. Hemodialysis patients, as well as the dialysis staff, are vulnerable to contract healthcare-associated infections due to frequent and prolonged exposures to many possible contaminants in the dialysis environment. The extracorporeal nature of the therapy, the associated common environmental conditions, and the immune compromised status of HD patients are major predisposing factors **(Karkar, 2016).**

Hemodialysis patients are exposed to different types of infections which include bloodstream infections and

Localized infections of the vascular access, blood-borne infections with hepatitis B virus, hepatitis C virus, human immunodeficiency virus, and airborne infections. Sources of infections include contaminated water, equipment, environmental surfaces, and infected patients. The evident increased potential for transmission of infections in the HD settings lead to the creation and implementation of specific and strict infection prevention and control measures in addition to the usual standard precautions **(Efstathiou, Papastavrou, Raftopoulos and Merkouris, 2011).**

Hepatitis C virus (HCV) transmission continues to be a major public health concern in patients undergoing hemodialysis, being occasionally responsible for outbreaks. Several studies showed that poor compliance with recommended infection control practices by the healthcare staff plays a key role in patient-to-patient transmission of HCV in the HD setting **(Senatore et al., 2016).**

HCV infection is a major global health challenge; it is estimated that more than 80 million people are chronically infected worldwide, with 3–4 million new infections and 350,000 deaths occurring each year because of HCV-related complications. Egypt is the country with the highest HCV prevalence in the world **(Kandeel et al., 2016).**

The Egyptian Demographic Health Survey (EDHS), which was conducted on a large nationally representative sample at 2008, estimated the prevalence of HCV antibodies and HCV RNA, among the 15–59 year age group, to be 14.7% and 9.8% respectively. Based on the population census and the EDHS, it was estimated that more than 6.8 million persons aged 15–59 years had HCV antibodies, of which more than 4.5 million individuals had active HCV infection **(Kandeel et al., 2016).**

The role of service providers especially nurses is to assure the standard precautions, it is crucial in reducing the prevalence of HCV infection in the HD units at hospitals. Periodic assessment of the prevalence and incidence of HCV infection among HD patients presents important indicators for compliance of the service providers towards the standards of infection prevention in hospitals **(Yassin, El Dib and Roshd, 2012).**

Significance of study:-

Hepatitis C is the most pressing public health challenge in Egypt. According to World Health Organization (WHO), Egypt has the highest prevalence of hepatitis C virus (HCV) worldwide, where the results of blood screening and testing for the Egyptian blood donors showed 20% positive for HCV. A recently published Egypt Health Issues Survey (EHIS) in 2015 on a nationally representative sample showed that 10% of Egyptians between 15 – 59 years of age had been infected with HCV infection, while 7% had chronic active hepatitis C **(Ministry of Health and Population, 2015).**

Chronic infection with hepatitis C virus is a serious public health problem associated with increased morbidity and mortality rates, and it affects approximately 2.8% of the world's population. The distribution of this infection varies significantly between various geographical locations. It was found that about 20% of Egypt's population had HCV infections and the highest prevalence anywhere in the world **(El Shishtawy et al., 2016).**

HCV infection is more frequent in renal transplant recipients and dialysis patients than in the general population and has a significant impact on the survival of

these patients. HCV infection is frequent in hemodialysis and kidney transplant patients, with prevalence ranging from 10% to 65% and from 2.6 to 66% respectively, according to the geographical zone. The prevalence is significantly correlated with the duration of hemodialysis and the number of units of blood products transfused **(Picharda & Pola, 2013).**

Aimof the Study

This study was aimed toassessnurses' performance regarding prevention of hepatitis C virus for patient on hemodialysis through:

1. Assessing nurses' knowledge regarding prevention of hepatitis C virus transmission at hemodialysis unit.
2. Assessing nurses' practice regarding prevention of hepatitis C virus transmission at hemodialysis unit.
3. Assessing nurses' attitude regarding prevention of hepatitis C virus transmission at hemodialysis unit.

Researchquestions:

1- What are nurses' levels of knowledge regarding prevention of hepatitis C virus transmission at hemodialysis unit?

2- What are nurses' practices regarding prevention of hepatitis C virus transmission at hemodialysis unit?

3- What are nurses' attitudes regarding prevention of hepatitis C virus transmission at hemodialysis unit?