HEPATITIS C VIRUS (HCV);
Frequency and Seroconversion Rate in Patients with End Stage Renal Disease (on Haemodialysis) in Labour Class Population

Muhammad Adil Khurshid¹, Manzoor Ahmad Naeem², Sohail Hassan³

ABSTRACT... Objectives: This study was carried out to find out the frequency of Hepatitis C Virus (HCV) infection in patients with end stage renal disease requiring Haemodialysis and their rate of seroconversion to HCV positive during Haemodialysis in special subgroup population, the labour class of Punjab Pakistan. Study Designs: Cross-sectional descriptive study. Place & Duration: Haemodialysis Unit Nawaz Sharif Social Security Hospital, Multan Road Lahore from January 2009 through December 2012. Material and Method: A total of 92 patients, aged 15 to 70 years belonging to Labour class of the Punjab were included in the study, who reported for Haemodialysis in our unit. All the patients were tested for the presence of HCV antibody by rapid immunochromatographic technique (ICT devices) and also confirmed with Enzyme Linked Immunosorbant Assay (ELIZA) at the start of Haemodialysis and thereafter quarterly for their conversion to HCV positive state. Results: Out of 92 patients 34 (39.96%) were positive for HCV Antibody 3 patients (3.26%) were positive for HbsAg where as 55 patients (59.78%) were negative for HbsAg or HCV Antibody. Out of 55 patients negative for HCV, 12 patients were converted to HCV positive state within 18 months of Haemodialysis. Conclusion: A high incidence of HCV positive, 36.96 % was noted with a high seroconversion rate of 21.82 % to HCV positive. This study supports the idea that better socioeconomic status and awareness of preventive health aspects remains the corner stone for prevention and spread of HCV infection.

Key words: HCV (Hepatitis C Virus), End Stage Renal Disease, Haemodialysis.

INTRODUCTION
Nawaz Sharif Social Security Hospital, Lahore is a tertiary care hospital for labour class. This hospital receives factory worker patients and their families for treatment and Haemodialysis from all over the Punjab.

Hepatitis C Virus has been studied extensively in general population as well as in patients on Haemodialysis.¹,²,⁶,⁸ HCV infection is encountered in about 3% population in Pakistan.¹ Its incidence is extraordinarily high in patients on Haemodialysis. In various studies its incidence has been reported from 10 to 40 %,²,⁶,⁸ HCV infection is mainly transmitted through parenteral route, so high incidence of HCV infection in patients with end stage renal disease is attributed to the treatment protocols of these patients including multiple sorts of parenteral pricks, blood transfusions.³,⁵,⁷

MATERIALS AND METHOD
A total of 92 patients were included in this study, who presented in Dialysis Centre at Nawaz Sharif Social Security Hospital, Lahore from January 2009 through December 2012. All the patients were tested for HbsAg and HCV Antibody. Negative patients were quarterly checked for their seroconversion to HCV positive state during Haemodialysis by rapid immunochromatographic technique (ICT devices) and then confirmed by Enzyme linked Immunosorbant Assay (ELIZA).

RESULTS
Out of 92 patients in this study, 34 (39.96%) patients were found to be positive for Hepatitis C Virus, 3 (3.26%) patients were positive for Hepatitis B virus and 55 (59.78%) were negative either for Hepatitis C or Hepatitis B viruses (Table-I). Out of 55 negative patients 12 (21.82%)...
patients had become positive. A high incidence of HCV positive status among patients of End Stage Renal Disease and high seroconversion to HCV positive state among patients on Haemodialysis is noted in our study. It is quite alarming and it supports the idea that better socioeconomic status and awareness of preventive health aspects among general population, patients, medical and Para medical staff involved in management of the patients of chronic kidney disease and patients on Haemodialysis remains the corner stone for prevention and spread of HCV infection for Hepatitis C Virus within 18 months of Haemodialysis (Table-II).

<table>
<thead>
<tr>
<th>Total Patients</th>
<th>HCV Positive</th>
<th>HBS Positive</th>
<th>Negative</th>
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<tbody>
<tr>
<td>92</td>
<td>34</td>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>39.95%</td>
<td>3.26%</td>
<td>59.78%</td>
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<td>Table-I. Frequency of HCV in patients with end stage renal disease</td>
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<table>
<thead>
<tr>
<th>Total Patients</th>
<th>Seroconversion to HCV Positive</th>
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<tbody>
<tr>
<td>55</td>
<td>12</td>
</tr>
<tr>
<td>21.82%</td>
<td></td>
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<td>Table-II. Seroconversion to HCV positive in patients on haemodialysis</td>
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DISCUSSION
Hepatitis C Virus is a blood born pathogen that appears to be endemic in many parts of the world. The World Health Organization (WHO) estimates that global prevalence of HCV infection averages 3%.10 Risk of infection by HCV in patients with End Stage Renal Disease and patients on Haemodialysis is three times higher because of prolonged and repeated vascular exposure and contaminated devices.11 The prevalence of infection by HCV is consistently higher in patients with End Stage Renal Disease and patients on Haemodialysis may be at higher risk of acquiring HCV infection. It is important to emphasize that prevalence of HCV positive patients on long term haemodialysis in northern Europe is below 5%, around 10% in most of southern Europe and USA, where as between 10 to 70% in many countries of the developing world including Asia.7,8 A high prevalence of 38.2% HCV infection was recorded in our population group of patients as compared to general population group of patients with End Stage Renal Disease. A close figure of 26.2% has been recorded Morocco.9

Several studies12,13 have reported nosocomial transmission of HCV in Haemodialysis Units by breaches in infection control practice and contamination of Haemodialysis machines. In June 2004 Haemodialysis sites in British Colombia reported a possible breach in transducer protector in disposable blood tubing set leading to increased seroconversion of patients to HCV, HBV and HIV positive state.11

Seroconversion of 21.82% is noted in our patients, probable reason being frequent visits on various non professional and un-hygienic medical centers for the treatment of chronic kidney disease. This observation is in accordance with the results shown in some studies that careless and un-hygienic parenteral administration of drugs with contaminated syringes leads to HCV infection.3,4,5,6

Conclusion
A high incidence of HCV positive, 36.96 % was noted with a high seroconversion rate of 21.82% to HCV positive. This study supports the idea that better socioeconomic status and awareness of preventive health aspects remains the corner stone for prevention and spread of HCV infection.

REFERENCES
HEPATITIS C VIRUS (HCV)


“ If you want to know who controls you, look at who you are not allowed to criticize. ”

– Voltaire –

AUTHORSHIP AND CONTRIBUTION DECLARATION

<table>
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<th>Contribution to the paper</th>
<th>Author=s Signature</th>
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