



## HEPATITIS C VIRUS (HCV); FREQUENCY AND SEROCONVERSION RATE IN PATIENTS WITH END STAGE RENAL DISEASE (ON HAEMODIALYSIS) IN LABOUR CLASS POPULATION

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**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 (ICU 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.

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### 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.<sup>1,2,6,8</sup> HCV infection is encountered in about 3% population in Pakistan.<sup>1</sup> Its incidence is extraordinarily high in patients on Haemodialysis. In various studies its incidence has been reported from 10 to 40 %.<sup>2,6,8</sup> 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.<sup>3,5,7</sup>

### 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).

Total Patients	HCV Positive	HBS Positive	Negative
92	34 39.95%	3 3.26%	55 59.78%

**Table-I. Frequency of HCV in patients with end stage renal disease**

Total Patients	Seroconversion to HCV Positive
55	12 21.82%

**Table-II. Seroconversion to HCV positive in patients on haemodialysis**

## 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%.<sup>10</sup> 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.<sup>11</sup> 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.<sup>7,8</sup> 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.<sup>9</sup>

Several studies<sup>12,13</sup> 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 Columbia 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.<sup>11</sup>

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.<sup>3,4,5,6</sup>

## 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.

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## REFERENCES

1. Ali SA, Donahue RM, Qureshi H, et al. **Prevalence of Hepatitis B and C in Pakistan.** Int J Infect Dis: 2009 Jan; 13(1): 9-19.
2. Fabrizi F, Martin P. **Hepatitis C infection and the patients with end stage renal disease.** Hepatology 2002; 36(1): 3-10.
3. Alvian SM, Einollahi B, Hajarizadeh B, et al. Prevalence of Hepatitis B Virus infection and related risk factors among patients on haemodialysis. Nephrology 2003; 8(5): 256-260.
4. Kabir A, Alavian SM, Keyvani H. **Distribution of Hepatitis C Virus genotypes in patients infected by different sources and its correlation with clinical and virological parameters.** A preliminary study. Comp Hepatol 2006; 5:4.

5. Kottor R, Alvarez J, Kottor V. **Evaluation of iatrogenic role in transmission of Hepatitis infection:** J. Hepatol 2002; 17 (suppl) A 104.
6. Huang CC. **Hepatitis in patients with end-stage renal disease.** J. GastroentrolHepatol 1997; 12: 5236-4.
7. Zacks SL, Fried MW. **Hepatitis C and B and renal failure.** Infect Dis Clin North Am 2001; 15: 877-99.
8. Khaja M, Hussain M, et al. **Hepatitis B and C virus infection in CRF patients.** J GastroentrolHepatol 2002; 17 (suppl) A 360.
9. Abdelaali B, Omar M, et al. **Hepatitis C Viral prevalence and seroconversion in Moroccan Hemodialysis Units.** Eight year follow up. J Med Diagn Meth 2013; 2: 141.
10. Fissell RB, Bragg-Gresham JM, et al. **Pattern of Hepatitis C prevalence and seroconversion in hemodialysis units from three countries.** Kidney Int. 2004 Jun; 65(6): 2335-42.
11. Andrew W Tu, Jane AB, et al. **Prevalence and Incidence of Hepatitis C Virus in hemodialysis patients in British Clombia.** Can J Infect Dis Microbiol. 2009 summer; 20(2): e19-e23.
12. Fabrizia Fabrizi. **Hepatitis C Virus Infection and Dialysis.** ISRN Nephrology 2013; Article ID 159960.
13. Nordenfelt E, Lofgren B, et all. **Hepatitis C Virus infection in hemodialysis patients in Southern Sweden: epidemiological, clinical and diagnostic aspects.** J Med Virol 193 Aug; 40(4): 266-70.



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

– Voltaire –

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#### AUTHORSHIP AND CONTRIBUTION DECLARATION

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