Liver Function In ESRD Patients With Hepatitis C Virus Infection On Different Renal Replacement Therapies: Advantage For CAPD

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Abstract: The natural history of HCV viral infection in different renal replacement modalities is unpredictable and liver dysfunction is rapid compared to normal persons. Retrospective analysis of HCV infected patients on different renal replacement therapies (haemodialysis, CAPD, kidney transplantation) was done in a university hospital. Liver enzymes (SGOT and SGPT) are lower and HCV related fulminant hepatitis is less in the CAPD group compared to other two groups (Hemodialysis, Renal Transplant). With these advantages CAPD may be considered as better modality to prevent the spread and also for maintaining the stable liver function in select population with HCV infection.

Keywords: Continuous ambulatory Peritoneal Dialysis, Hepatitis C Virus, End stage Renal Disease, Hemodialysis.

Introduction:
HCV infection has adverse effect in all forms of renal replacement modalities. The natural history of HCV viral infection in different renal replacement modalities is unpredictable and liver dysfunction is rapid compared to normal persons.

Materials and Methods:
Retrospective analysis of HCV infected patients on different renal replacement therapies (haemodialysis (HD), CAPD, kidney transplantation) was done in a university hospital. The patients with a minimum follow-up of 6 months after HCV seroconversion on each modality were taken to study. Patients were subjected to monthly analysis of investigations including liver enzymes (SGOT, SGPT). HCV was tested by using 3rd generation ELISA and when required by HCV RNA by RT PCR. None of the patients in different groups were treated with interferon therapy for HCV infection because of the economical constraints and because of chances of reinfection during or after the treatment.

Results:
In HD group (23) age 40±8 yrs, sex M: F 20:3, duration of follow-up 25±18 months; The liver enzymes levels are abnormal with a mean values of SGOT: 45±24 IU/ml, SGPT 41±20 IU/ml. There was one episode of fulminant hepatitis, which led to the mortality. There was no clinical evidence of cirrhosis of liver during the follow-up period(Table -1).

In CAPD group(19) age 44±12 yrs, sex M: F 15:4, duration of follow-up 28.3±26.4 months; The liver enzymes are abnormal with a mean values of levels SGOT 34±20 IU/ml, SGPT 30±24 IU/ml. There was one episode of fulminant hepatitis, which led to the mortality. There was no clinical evidence of cirrhosis of liver during the follow-up period(Table -1).

In Renal transplantation group (19) age 37±10 yrs, Sex M:F 15:4 , duration of follow-up 60±37 months; The liver enzymes are abnormal with a mean values of levels SGOT 38±10 IU/ml, SGPT 28±10 IU/ml, there were 5 episodes of fulminant hepatitis which led to the mortality. Postmortem revealed fulminant hepatitis in three patients(Table -1).

Table -1 : Showing Demographic and Biological Variables

<table>
<thead>
<tr>
<th>Number</th>
<th>Group A (MHD)</th>
<th>Group B (CAPD)</th>
<th>Group C (KTx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>40±8</td>
<td>44±12</td>
<td>37±10</td>
</tr>
<tr>
<td>Followup (months)</td>
<td>25±18</td>
<td>28.3±26.4</td>
<td>60±37</td>
</tr>
<tr>
<td>SGOT (IU/ml)</td>
<td>45±24</td>
<td>34±20</td>
<td>38±10</td>
</tr>
<tr>
<td>SGPT (IU/ml)</td>
<td>41±20</td>
<td>30±24</td>
<td>28±10</td>
</tr>
<tr>
<td>Death due to HCV</td>
<td>1</td>
<td>1</td>
<td>5</td>
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</tbody>
</table>
Discussion:

Liver function, which is assessed by the liver enzymes (SGOT and SGPT) are lower in the CAPD group compared to other two groups (Hemodialysis, Renal Transplant). HCV related fulminant hepatitis was higher in renal transplant recipients, which is also reported in previous studies. Our study suggests an advantage to CAPD as the better modality of renal replacement therapy in HCV seroconverted patient as it offers a lower, stable liver enzymes and less episodes fulminant hepatitis. The CAPD is advantageous in way as it prevent the nosocomial spread of HCV infection, which was proven in previous studies. In high prevalence centers the treatment for HCV with interferon can be planned after patient initiated on CAPD, as there are less chances of re-infection during or after the treatment. With these advantages CAPD may be considered as better modality to prevent the spread and also for maintaining the stable liver function in select population with HCV infection. The natural survival advantage of the renal transplantation as better renal replacement therapy need to be weighed against the risk of fulminant hepatitis in the group of HCV infected patients.

Conclusion:

CAPD is a better renal replacement modality for HCV infected ESRD patients as it provides stable liver function.

References: