USEFULNESS OF LIVER FIBROSIS ASSESSMENT IN PATIENTS WITH CHRONIC HEPATITIS C (CHC) USING GLYCO-ISOMER OF SERUM MAC-2-BINDING PROTEIN


Department of Gastroenterology and Hepatology, Japan Community Health care Organization Osaka Hospital, Osaka, Japan

Background and Aim

The degree of liver fibrosis is a major issue for making decision of therapeutic strategies on chronic liver diseases. Recently glyco-isomer of serum Mac-2-binding protein (M2BPGi) could be supposed to be a novel and useful biomarker to assess liver fibrosis. However little is known about its usefulness for diagnosis of CHC patients. In this study, we were trying to reveal the significance of serum M2BPGi for assessment of liver fibrosis.

Methods

Among to the CHC patients who scheduled for the interferon based anti-viral therapy in our hospital from January 2001 to March 2015, one hundred twenty seven patients whose serum levels of M2BPGi were enabled to measure retrospectively from stored samples were enrolled.

Liver biopsies were undertaken in all of the patients.

We evaluated 1. The relation between liver fibrotic degrees and the serum levels of M2BPGi.
2. The correlation between the serum levels of M2BPGi and examined liver function tests, i.e. T-Bil, AST, ALT, GGT, platelet, AFP, γ-globulin and hyaluronic acid (HA).
3. The ability of M2BPGi in diagnosis for liver fibrosis compared with the serum levels of HA and Fib4 index by Receiver Operating Characteristic (ROC) analysis.

All analysis was performed with the JMP Pro ver.11 statistical package (SAS Institute).

Results

The patients were classified into two groups according to liver fibrosis stage, F0 (n=34) and F1/2 (n=93), (table 1)

The levels of M2BPGi were significantly higher in F1/2 group (median=1.73C.O.I.) than in F0 group (median=0.85C.O.I.), (p<.0001).

The serum levels of M2BPGi showed the positive correlation with the serum levels of AST (R=0.55), ALT (R=0.49), GGT (R=0.46), AFP (R=0.54), γ-globulin (R=0.40), HA (R=0.65), and Fib4 index (R=0.51) and the negative correlation with the serum levels of platelet (R=0.29), and albumin (R=0.20), respectively.

ROC analysis showed that both serum HA (AUC=0.830) and the Fib4 index (AUC=0.809) were the most useful determinants of liver fibrosis-comparing between the two groups. The serum levels of M2BPGi (AUC=0.759) showed the possible indicator for liver fibrosis staging as well. (Fig. 2)

Conclusion

In this study, we could demonstrate that the serum M2BPGi was a potentially significant biomarker for liver fibrosis, even in minimal or mild liver fibrosis.

The serum M2BPGi could be one of the most useful tools for assessment of liver fibrosis in CHC patients.

Table 2 The correlation between M2BPGi and liver function tests and fibrosis parameters

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>Adjusted R²</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platelet (x10⁹/µl)</td>
<td>-0.29</td>
<td>0.077</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Total Bilirubin (mg/dl)</td>
<td>-0.01</td>
<td>0.006</td>
<td>N.S.</td>
</tr>
<tr>
<td>ALT (IU/L)*</td>
<td>0.49</td>
<td>0.231</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>GGT (IU/L)*</td>
<td>0.46</td>
<td>0.209</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Albumin (g/dl)</td>
<td>-0.29</td>
<td>0.074</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>γ-globulin (%)</td>
<td>0.54</td>
<td>0.287</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Hyaluronic acid (ng/ml)*</td>
<td>0.65</td>
<td>0.410</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Fib4 index</td>
<td>0.51</td>
<td>0.249</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Data were log-transformed before analysis.

*Data were log-transformed before analysis.

I informed that the results were differ from the abstract, because the all data in abstract was not log-transformed, but in this poster the data not showed normal distribution were log-transformed before analysis.

Fig. 2

The ability of M2BPGi to diagnose liver fibrosis

The Receiver Operating Characteristic analysis were performed to evaluate the diagnostic efficacy of M2BPGi for liver fibrosis (F1/2), compared with that of hyaluronic acid and Fib4 index.

There is no financial or other interest with regard to this study.