INTRODUCTION

The aim of this evaluation was to find an optimal cut-off between low (LVL) and high viral load (HVL) which gave better prediction of SVR. This analysis was based on an ongoing observational study of patients with chronic hepatitis C (CHC) in routine clinical practice.

METHODS

This evaluation is part of a large ongoing German multicentre, open-label observational study including anti-HCV-positive adults with detectable HCV RNA. The nature of this study allowed dosing and duration of both peginterferon alpha-2a (40KD) and RBV to be at the discretion of the physician.

RESULTS

In 158/1239 patients the data cleaning process is still ongoing. In 2190 patients (n=49), personal reasons (n=30), lack of compliance (n=24), concomitant diseases (n=5) or other reason (n=10). In 1239/2522 G1 patients treatment documentation was finished. The nature of this study allowed dosing and duration of both peginterferon alpha-2a (40KD) and RBV to be at the discretion of the physician.

CONCLUSION

The best baseline predictors for the response to anti-viral therapy in HCV-patients are age <40 years, normal serum ferritin (<200 μg/l), normal platelets (>150,000/μl) and BMI >25 kg/m². The best cut-off for low and high VL was translated with different factors into IU/ml was statistically significant except for gender.

Other predictive factors

In order to identify other reliable predictive factors for the response to treatment, the following factors were estimated: age (<40 years, BMI <25 kg/m², sex (male/female), GPT (≥40 U/l, ≥150 U/l), platelets (≥150,000/μl, ≤75,000/μl), serum ferritin (<200 μg/l) and VL (<250,000 IU/ml, ≥2,000,000 IU/ml HCV RNA).

In univariate analysis, the predictive factors to be considered included age, BMI, sex, GPT, ferritin, platelets and VL. The determining of a new cut-off for low and high VL revealed that even under real life conditions VL is an important predictive factor of treatment outcome. In the era of pegylated interferon this cut-off is not the best way to differentiate between LVL and HVL, with regard to SVR.

Figure 1. Study patients

Figure 2. Virological response

Figure 3. Cut-off categories and SVR rates

Figure 4. SVR in patients with LVL and HVL and different cut-offs

Table 1: Predictive factors for SVR

<table>
<thead>
<tr>
<th>Predictive Factor</th>
<th>OR</th>
<th>CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (&lt;40 years)</td>
<td>1.56</td>
<td>1.03-2.36</td>
<td>.03</td>
</tr>
<tr>
<td>BMI (≥25 kg/m²)</td>
<td>0.58</td>
<td>0.37-0.93</td>
<td>.02</td>
</tr>
<tr>
<td>Serum ferritin (&lt;200 μg/l)</td>
<td>1.27</td>
<td>1.03-1.57</td>
<td>.02</td>
</tr>
<tr>
<td>Platelets (&gt;150,000/μl)</td>
<td>0.58</td>
<td>0.37-0.93</td>
<td>.02</td>
</tr>
</tbody>
</table>

Figure 5: ROC analysis of viral load

In the ROC analysis continuous viral load was a strong predictor of SVR (p<0.001, OR=0.29, CI:0.10-0.83), but the effect of viral load was non-linear. The ROC plot revealed a cut-off level of viral load of 2.6 log10 IU/ml (~600,000 IU/ml).

According to this result, an additional discrete cut-off level of 400,000 IU/ml in addition to the old ones (800,000 and 1,000,000 IU/ml) was compared by MLR analysis. 400,000 IU/ml was the best cut-off level (<250,000 IU/ml, ≥250,000 IU/ml, HVL). Using this cut-off of 400,000 IU/ml, G1 patients with VL reached SVR rates of 42.0% and HVL 43.7%. SVR rates of other viral load cut-offs are shown in Figure 4. For SVR in patients with LVL increased with decreasing cut-off levels, SVR in patients using different HVL cut-offs remained at 43%. This result indicated that patients with higher viral load than 400,000 IU/ml had similar low SVR rates as patients with viral load of more than 800,000 IU/ml and belong to the same category.