### Supplementary Table S1. Clinical features of 20 HCC patients for Affymetrix genechip analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>All patients (n = 20)</th>
<th>IL28B TT genotype (n = 10)</th>
<th>IL28B TG/GG genotype (n = 10)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male:female)</td>
<td>15:5</td>
<td>4:6</td>
<td>1:9</td>
<td>N.S.</td>
</tr>
<tr>
<td>Age (years)</td>
<td>65.5 (47–78)</td>
<td>70 (47–78)</td>
<td>60 (49–75)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Platelet count (×10^4/mm^3)</td>
<td>11.1 (6.2–20.2)</td>
<td>11 (6.2–20.2)</td>
<td>12.9 (7.8–17.8)</td>
<td>N.S.</td>
</tr>
<tr>
<td>ALT (IU/L)</td>
<td>38.5 (15–150)</td>
<td>38 (20–116)</td>
<td>39 (15–150)</td>
<td>N.S.</td>
</tr>
<tr>
<td>γGTP (IU/L)</td>
<td>36.5 (17–399)</td>
<td>41 (17–120)</td>
<td>33.5 (23–399)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Alubumin (g/dL)</td>
<td>4.2 (3.1–4.8)</td>
<td>4.2 (3.4–4.8)</td>
<td>4.1 (3.1–4.6)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Prothrombin activity (%)</td>
<td>86.5 (58–115)</td>
<td>86.5 (64–100)</td>
<td>86.5 (58–115)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Total bilirubin (mg/dL)</td>
<td>0.7 (0.2–1.5)</td>
<td>0.75 (0.6–1.5)</td>
<td>0.7 (0.2–1.4)</td>
<td>N.S.</td>
</tr>
<tr>
<td>Cirrhosis (yes:no)</td>
<td>12:8</td>
<td>7:3</td>
<td>5:5</td>
<td>N.S.</td>
</tr>
<tr>
<td>History of IFN therapy (yes:no)</td>
<td>9:11</td>
<td>4:6</td>
<td>5:5</td>
<td>N.S.</td>
</tr>
<tr>
<td>Child-Pugh class (A:B)</td>
<td>19:1</td>
<td>9:1</td>
<td>10:0</td>
<td>N.S.</td>
</tr>
<tr>
<td>Tumor no. (1:2:3)</td>
<td>16:1:3</td>
<td>9:1:0</td>
<td>7:0:3</td>
<td>N.S.</td>
</tr>
<tr>
<td>Tumor size (mm)</td>
<td>31.5 (14–62)</td>
<td>34 (14–62)</td>
<td>28.5 (17–38)</td>
<td>N.S.</td>
</tr>
<tr>
<td>AFP (ng/mL)</td>
<td>16.5 (&lt;10–5507)</td>
<td>10 (&lt;10–3490)</td>
<td>39 (&lt;10–5507)</td>
<td>N.S.</td>
</tr>
<tr>
<td>DCP (AU/L)</td>
<td>51.5 (&lt;10–19360)</td>
<td>48.5 (&lt;10–188)</td>
<td>304 (&lt;10–19360)</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

Data shown as medians (range)

ALT, alkaline phosphatase; γGTP, gamma-glutamyl transpeptidase; IFN, interferon; AFP, alpha-fetoprotein; DCP, des-gamma-carboxy prothrombin.

N.S., not significant
Supplementary Table S2. The list of Probe ID of genes for hierarchical clustering

<table>
<thead>
<tr>
<th>A) Interferon stimulated genes (ISG)</th>
<th>B) Immune response related genes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gene symbol</strong></td>
<td><strong>Affymetrix Probe Set ID</strong></td>
</tr>
<tr>
<td>HERC6</td>
<td>219352_at</td>
</tr>
<tr>
<td>PLSCR1</td>
<td>202446_s_at</td>
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<tr>
<td>DDX60L</td>
<td>228152_s_at</td>
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<tr>
<td>SP110</td>
<td>209762_x_at</td>
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<tr>
<td>DDX58</td>
<td>218943_s_at</td>
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<tr>
<td>TRIM69</td>
<td>1568592_at</td>
</tr>
<tr>
<td>NMI</td>
<td>203964_at</td>
</tr>
<tr>
<td>TDRD7</td>
<td>213361_at</td>
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<tr>
<td>IFITM1</td>
<td>214022_s_at</td>
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<tr>
<td>OAS1</td>
<td>202869_at</td>
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<td>IFIT2</td>
<td>217502_at</td>
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<tr>
<td>RTP4</td>
<td>219684_at</td>
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<td>MX1</td>
<td>202086_at</td>
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<td>IFI44L</td>
<td>204439_at</td>
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<tr>
<td>OAS2</td>
<td>204972_at</td>
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<tr>
<td>ISG15</td>
<td>205483_s_at</td>
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<tr>
<td>RSAD2</td>
<td>213797_at</td>
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<tr>
<td>CMPK2</td>
<td>226702_at</td>
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<tr>
<td>EPST11</td>
<td>227090_at</td>
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<td>IFI44</td>
<td>214453_s_at</td>
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<td>USP18</td>
<td>219211_at</td>
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<td>SAMD9</td>
<td>228531_at</td>
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<td>HERC5</td>
<td>219863_at</td>
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<td>ARP9</td>
<td>223220_s_at</td>
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<td>IFIH1</td>
<td>219209_at</td>
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<tr>
<td>NT5C3</td>
<td>223298_s_at</td>
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<td>PNPT1</td>
<td>225291_at</td>
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<td>OAS3</td>
<td>218400_at</td>
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<td>PTGER4</td>
<td>204896_s_at</td>
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<td>TRAT1</td>
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<td>CHST4</td>
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<td>CST7</td>
<td>210140_at</td>
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<td>TAPBP</td>
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<td>IL32</td>
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<td>IL1R2</td>
<td>205403_at</td>
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<td>GBP2</td>
<td>202748_at</td>
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<tr>
<td>IL2RA</td>
<td>206341_at</td>
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### Supplementary Table S3. Differentially expressed gene sets classified with Gene Ontology in HCC tissues of \textit{IL28B} TG/GG genotype ($p < 0.001$)

<table>
<thead>
<tr>
<th>Gene set name</th>
<th>Z score</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Immune system process</td>
<td>-5.061704462</td>
<td>4.16E-07</td>
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<tr>
<td>Cellular defense response</td>
<td>-4.758636333</td>
<td>1.95E-06</td>
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<tr>
<td>Morphogenesis of an epithelium</td>
<td>-3.841568689</td>
<td>0.000122251</td>
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<tr>
<td>T cell activation</td>
<td>-3.786068036</td>
<td>0.00015305</td>
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<tr>
<td>Locomotory behavior</td>
<td>-3.665308511</td>
<td>0.000247041</td>
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<tr>
<td>Regulation of T cell activation</td>
<td>-3.644238912</td>
<td>0.000268184</td>
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<tr>
<td>T cell proliferation</td>
<td>-3.595929386</td>
<td>0.000323235</td>
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<tr>
<td>Regulation of T cell proliferation</td>
<td>-3.587277691</td>
<td>0.000334148</td>
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<tr>
<td>Cell proliferation</td>
<td>-3.536554986</td>
<td>0.000405382</td>
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<tr>
<td>Cytokine and chemokine mediated signaling pathway</td>
<td>-3.463535652</td>
<td>0.000533126</td>
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<tr>
<td>Positive regulation of T cell proliferation</td>
<td>-3.417834282</td>
<td>0.000631215</td>
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<tr>
<td>Leukocyte activation</td>
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<td>Lymphocyte activation</td>
<td>-3.394307987</td>
<td>0.000688023</td>
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<td>Mitotic cell cycle</td>
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<td>Regulation of apoptosis</td>
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<td>Immune response</td>
<td>-3.328845827</td>
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<tr>
<td>Regulation of programmed cell death</td>
<td>-3.324614535</td>
<td>0.000885409</td>
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<tr>
<td>Epithelial cell differentiation</td>
<td>-3.302070425</td>
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<td>Regulation of lymphocyte activation</td>
<td>-3.294808682</td>
<td>0.000984887</td>
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Supplementary Table S4. Comparison of tumor infiltrate lymphocyte between *IL28B* TT and TG/GG genotypes

<table>
<thead>
<tr>
<th>Variable</th>
<th>IL28B TT genotype (n=20)</th>
<th>IL28 TG/GG genotype (n=12)</th>
<th>p value</th>
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<tbody>
<tr>
<td>Score of intratumoral lymphocyte infiltration</td>
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<tr>
<td>CD4 positive</td>
<td>0.825</td>
<td>1.291</td>
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<tr>
<td>CD8 positive</td>
<td>1.175</td>
<td>1.750</td>
<td>0.047</td>
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**Supplementary Table S5. Cox regression analysis and relative frequency of variables inclusion with p-value <0.05 (in 1000 bootstrap samples) for early HCC recurrence (≤1year).**

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<tr>
<th>Variables</th>
<th>Univariate</th>
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<th></th>
<th></th>
<th></th>
<th>Multivariate</th>
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<th></th>
<th></th>
<th></th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>HR</td>
<td>95%CI</td>
<td>P</td>
<td></td>
<td>HR</td>
<td>95%CI</td>
<td>P</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IL28B allele: TT vs TG/GG</td>
<td>2.351</td>
<td>1.189</td>
<td>6.747</td>
<td>0.019</td>
<td></td>
<td>2.351</td>
<td>1.189</td>
<td>6.747</td>
<td>0.019</td>
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<td>82.5</td>
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<tr>
<td>DCP (AU/l): &gt;40 vs ≤40</td>
<td>1.362</td>
<td>0.828</td>
<td>2.863</td>
<td>0.173</td>
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<td>37.5</td>
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<tr>
<td>ALT (IU/l): &gt;40 vs ≤40</td>
<td>0.833</td>
<td>0.697</td>
<td>2.444</td>
<td>0.405</td>
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<td>32</td>
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<tr>
<td>Tumor number: solitary vs 2-3</td>
<td>0.651</td>
<td>0.397</td>
<td>1.590</td>
<td>0.515</td>
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<td>29.5</td>
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<tr>
<td>History of IFN therapy: yes vs no</td>
<td>1.127</td>
<td>0.768</td>
<td>2.658</td>
<td>0.260</td>
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<tr>
<td>γGTP (IU/l): &gt;50 vs ≤50</td>
<td>0.535</td>
<td>0.631</td>
<td>2.237</td>
<td>0.593</td>
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<td>AFP (ng/ml): &gt;20 vs ≤20</td>
<td>0.804</td>
<td>0.694</td>
<td>2.400</td>
<td>0.421</td>
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<td>22.5</td>
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<tr>
<td>Child-Pugh class : A vs B</td>
<td>0.752</td>
<td>0.620</td>
<td>2.922</td>
<td>0.452</td>
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<td>20.5</td>
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<tr>
<td>Age: per 1 year</td>
<td>0.951</td>
<td>0.981</td>
<td>1.056</td>
<td>0.342</td>
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<td>19</td>
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<td>Tumor size (mm): &gt;20 vs ≤20</td>
<td>0.403</td>
<td>0.601</td>
<td>2.164</td>
<td>0.687</td>
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<td>Platelet count (×10^4/mm^3): &gt;10 vs ≤10</td>
<td>0.006</td>
<td>0.537</td>
<td>1.857</td>
<td>0.995</td>
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<tr>
<td>Therapy: RFA vs resection</td>
<td>0.305</td>
<td>0.481</td>
<td>2.727</td>
<td>0.760</td>
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<tr>
<td>Period of therapy: 2000-05 vs 2006-11</td>
<td>0.900</td>
<td>0.372</td>
<td>1.442</td>
<td>0.368</td>
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<td>15</td>
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<tr>
<td>Sex: male vs female</td>
<td>0.299</td>
<td>0.581</td>
<td>2.092</td>
<td>0.765</td>
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<td>14.5</td>
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</table>
**Supplementary Table S6. Cox regression analysis and relative frequency of variables inclusion with p-value <0.05 (in 1000 bootstrap samples) for late HCC recurrence (1 year <).**

<table>
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<tr>
<th>Variables</th>
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<th>Frequency (%)</th>
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<td></td>
<td>Univariate</td>
<td>Multivariate</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>HR 95%CI</td>
<td>HR 95%CI</td>
<td>P</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tumor size (mm): &gt;20 vs ≤20</td>
<td>1.327 0.859 - 2.203</td>
<td>1.879 0.980 - 2.420</td>
<td>0.184</td>
<td>0.060</td>
<td>59.3</td>
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<tr>
<td>IL28B allele: TT vs TG/GG</td>
<td>1.587 0.914 - 2.354</td>
<td>1.717 1.033 - 2.684</td>
<td>0.113</td>
<td>0.086</td>
<td>57.3</td>
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</tr>
<tr>
<td>Tumor number: solitary vs 2-3</td>
<td>1.931 0.993 - 2.585</td>
<td>1.976 0.998 - 2.674</td>
<td>0.054</td>
<td>0.048</td>
<td>53.8</td>
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<tr>
<td>Therapy: RFA vs resection</td>
<td>1.256 0.801 - 2.758</td>
<td>1.976 0.998 - 2.674</td>
<td>0.209</td>
<td>0.048</td>
<td>49.8</td>
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<tr>
<td>AFP (ng/ml): &gt;20 vs ≤20</td>
<td>1.486 0.897 - 2.211</td>
<td>0.142 0.618 - 1.516</td>
<td>0.075</td>
<td>0.307</td>
<td>44.8</td>
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<tr>
<td>Period of therapy: 2000-05 vs 2006-11</td>
<td>1.021 0.804 - 1.996</td>
<td>0.075 0.976 - 1.027</td>
<td>0.381</td>
<td>0.940</td>
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<tr>
<td>Age: per 1 year</td>
<td>0.142 0.618 - 1.516</td>
<td>0.690 0.363 - 1.343</td>
<td>0.887</td>
<td>0.928</td>
<td>38.1</td>
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</tr>
<tr>
<td>Weight (kg/m²): &gt;10 vs ≤10</td>
<td>1.079 0.816 - 2.013</td>
<td>0.142 0.618 - 1.516</td>
<td>0.075</td>
<td>0.307</td>
<td>38.1</td>
<td></td>
</tr>
<tr>
<td>Sex: male vs female</td>
<td>0.142 0.618 - 1.516</td>
<td>0.690 0.363 - 1.343</td>
<td>0.887</td>
<td>0.928</td>
<td>38.1</td>
<td></td>
</tr>
<tr>
<td>γGTP (IU/l): &gt;50 vs ≤50</td>
<td>1.079 0.816 - 2.013</td>
<td>0.142 0.618 - 1.516</td>
<td>0.075</td>
<td>0.307</td>
<td>38.1</td>
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</tr>
<tr>
<td>Child-Pugh class : A vs B</td>
<td>0.581 0.702 - 1.920</td>
<td>0.581 0.702 - 1.920</td>
<td>0.561</td>
<td>0.561</td>
<td>27.1</td>
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<tr>
<td>DCP (AU/l): &gt;40 vs ≤40</td>
<td>0.875 0.770 - 1.981</td>
<td>0.875 0.770 - 1.981</td>
<td>0.381</td>
<td>0.381</td>
<td>20.2</td>
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<tr>
<td>History of IFN therapy: yes vs no</td>
<td>0.121 0.615 - 1.536</td>
<td>0.121 0.615 - 1.536</td>
<td>0.904</td>
<td>0.904</td>
<td>19.5</td>
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<tr>
<td>ALT (IU/l): &gt;40 vs ≤40</td>
<td>0.273 0.577 - 1.516</td>
<td>0.273 0.577 - 1.516</td>
<td>0.785</td>
<td>0.785</td>
<td>18.9</td>
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