Trial eligibility criteria

**Key inclusion criteria**
1) Patients with histologically or clinically confirmed HCC
2) Patients with multiple HCCs that are diagnosed as stage 2-4a and cannot be selected for surgical resection or local ablation
3) Patients without severe tumor thrombosis in the portal vein, hepatic vein or bile duct
4) Patients under Child-Pugh A or B
5) Patients under PS 0 or 1
6) Patients who fulfill all selected criteria: WBC $\geq$ 3000/mm$^3$, Plt $\geq$ 5$\times$10$^4$/mm$^3$, ...
7) Patients who are 20 years and older

**Key exclusion criteria**
1) Patients with another active cancer
2) Patients with extrahepatic metastases
3) Patients with prior surgical reconstruction of the biliary tract or prior endoscopic treatment of ampulla of vater
4) Patients with clinically significant refractory ascites or pleural effusion
5) Patients with a medical history of severe hypersensitivity

Patient characteristics

**Select**
1) Patients with an HCC diagnosis
2-3) Patients who are going to receive transcatheter arterial chemoembolization for multiple HCCs
4-5) Not applicable
6) Patients who fulfill all selected criteria at least once: WBC $\geq$ 3000/mm$^3$, Plt $\geq$ 5$\times$10$^4$/mm$^3$, ...
7) Patients who are 20 years and older

**Omit**
1) Patients with a diagnosis of another active cancer
2) Patients with a diagnosis of extrahepatic metastasis
3) Patients with prior surgical reconstruction of the biliary tract or prior endoscopic treatment of the ampulla of vater
4) Patients with a diagnosis of significant refractory ascites or pleural effusion
5) Patients with a diagnosis of severe hypersensitivity

Data elements in EMRs

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Section</th>
<th>Code or definition</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select</strong></td>
<td>Diagnosis</td>
<td>ICD10 Code</td>
<td>‘C220’</td>
</tr>
<tr>
<td>1</td>
<td>Radiologic study</td>
<td>Order name</td>
<td>‘TAE’</td>
</tr>
<tr>
<td>2-3</td>
<td>Laboratory tests</td>
<td>WBC</td>
<td>$\geq$ 3000/mm$^3$</td>
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<tr>
<td>4-5</td>
<td>Laboratory tests</td>
<td>Plt</td>
<td>$\geq$ 5$\times$10$^4$/mm$^3$</td>
</tr>
<tr>
<td>6</td>
<td>Demographics</td>
<td>age</td>
<td>$\geq$ 20</td>
</tr>
<tr>
<td><strong>Omit</strong></td>
<td>Diagnosis</td>
<td>ICD10 Code</td>
<td>‘C001’, ‘C003’, …according to the list, except for ‘C220’</td>
</tr>
<tr>
<td>1-2</td>
<td>Operative notes</td>
<td>ICD-10 code or surgical procedure</td>
<td>‘509078’, ‘509079’, … or surgical procedure= ‘partial biliary tract resection’…</td>
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<tr>
<td>3</td>
<td>Diagnosis</td>
<td>ICD-10 code or surgical procedure</td>
<td>‘pleural effusion (refractory)’ or ‘refractory pleural effusion’ and so on</td>
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<tr>
<td>4</td>
<td>Diagnosis</td>
<td>ICD-10 code</td>
<td>‘T781’, ‘T887’</td>
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</tbody>
</table>