AFP-L3 and DCP increase chances of early detection of HCC
Enhance Patient Care

**AFP-L3 and DCP biomarkers:**

- Are intended for in vitro diagnostic use as an aid in the risk assessment of patients with chronic liver diseases for development of HCC in conjunction with other laboratory findings, imaging studies, and clinical assessment.

- The combined use of these biomarkers is shown to be effective for the early detection of HCC through surveillance.*

- Adding these biomarkers to current HCC surveillance practice increases chances of detecting HCC earlier.

Objectives

• Describe current AASLD recommendations for HCC surveillance in the U.S.

• Explain current evidence-based surveillance guidelines in Japan.

• Brief overview of some recent study data on HCC surveillance and how surveillance has an impact on improving patient outcome.

• Description of the assays.
The AASLD diagnostic algorithm (at right) for patients who have presented with a liver nodule is screening with ultrasound every 3 months*

However:

- For at risk patients with no previous findings of a liver nodule, AASLD recommends screening by ultrasound only, every 6 months*
- (Sensitivity 65-80%, Specificity >90%)**

How effective are these tools?

<table>
<thead>
<tr>
<th>Tools</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Ref.</th>
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<td><strong>Primary tool = Ultrasound</strong></td>
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<td>• Pooled 14 out of 2,524 studies using stringent criteria</td>
<td>48%</td>
<td>97%</td>
<td>Colli et al.* 2006</td>
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<td><strong>Ultrasound back up tool: Total AFP</strong></td>
<td>39 - 64%</td>
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Comparison of current HCC tools to combined use of AFP-L3 and DCP biomarkers

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<tr>
<td><strong>Combined use of AFP-L3 + DCP for early HCC patients</strong></td>
<td>84%</td>
<td>94%</td>
<td>Volk. Et al.*</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
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The Japan Society of Hepatology Surveillance Guidelines

Evidence-based recommendations cited in JSH, 2008 updated in 2010:

- Use AFP-L3, DCP, AFP and ultrasound
  - For cirrhosis patients, every 3-4 months*
  - For chronic hepatitis patients, every 6 months*

HCC surveillance improves treatment outcome

- Surveillance for HCC reduces mortality*
  - “Biannual surveillance reduced HCC mortality by 37%.”

- Surveillance enables early detection of HCC**
  - 269 patients with cirrhosis and HCC divided into 3 groups according to quality of surveillance (a retrospective analysis).
  - “The quality of surveillance has a direct impact on hepatocellular carcinoma stage at diagnosis, access to liver transplantation, and survival.” **

<table>
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<tr>
<th>Group</th>
<th>Description</th>
<th>Survival Rate</th>
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<tr>
<td>Group 1 (n=172)</td>
<td>Standard-of-care</td>
<td>40%</td>
</tr>
<tr>
<td>Group 2 (n=48)</td>
<td>Substandard surveillance</td>
<td>27%</td>
</tr>
<tr>
<td>Group 3 (n=59)</td>
<td>Absence of surveillance in patients not recognized to be cirrhotic (Cx)</td>
<td>13%</td>
</tr>
</tbody>
</table>

• AFP-L3 is a significant risk marker for HCC:
  - AFP-L3 ≥ 10%
    - Increased risk for development of HCC
    - Could increase chance of detecting HCC early
      → decreased mortality through early interventions
  - AFP-L3 < 10%
    - Low risk for development of HCC
    - May reduce use of expensive imaging modalities
      → cost savings
How Wako’s Assays Can Help

Per the AASLD Guideline*, patients at risk for HCC who should be undergoing surveillance fall into three major categories:

1. Hepatitis B positive
   - Asian Males over 40
   - Chronic Hepatitis
2. Hepatitis C positive with cirrhosis
3. Cirrhosis

Distribution of HCC patients with various patterns of positivity for the HCC biomarkers**

The diagram shows that if you were to run AFP alone, you would miss:
- 110 patients that were DCP positive but not AFP positive +
- 14 patients that were AFP-L3 positive but not AFP positive +
- 15 patients that were positive for both DCP and AFP-L3, but negative for total AFP
- A total of 139 patients in this study.

*Bruix et.al. AASLD Practice Guideline, updated 2010.
Ordering information

• The tests are for “In Vitro Diagnostic Use” (IVD)

• Reimbursement can be received through the following codes:

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>AFP-L3</th>
<th>82107</th>
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<tr>
<td></td>
<td>DCP</td>
<td>83951</td>
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AFP-L3 and DCP are available at major US reference laboratories, orderable both separately and together as panel.

Visit the website of your preferred reference laboratory for further details.