Listeria monocytogenes – Clinical and Food Testing Guidelines for Foodborne Illness Outbreaks

Audience:
Health Care Providers, hospital and commercial laboratory personnel

Overview:
Effective Immediately:

- Two sets of routine blood cultures should be ordered and submitted to your local hospital or private laboratory when listeriosis is being considered.

- If Listeria is isolated from the blood sample, the isolate should be sent to the Public Health Ontario (PHO) Laboratory for confirmation and typing.

- Primary blood culture is not available at the PHO laboratory. Blood culture tubes submitted to PHO will be rejected.

- Stool culture and serology for listeria are not recommended.

Background:
Listeriosis is a foodborne illness that usually presents as a self-limited syndrome with malaise, fever, and diarrhea with no further untoward outcome. In a minority of cases, particularly in the immunocompromised, neonates, elderly and pregnant women, illness such as bacteremia, meningitis, and fetal loss can ensue. Ingestion of suspect food by healthy or immunocompetent persons does not necessarily result in infection with Listeria.

These guidelines are applicable during an outbreak investigation or when there is a known contaminated or recalled food product. The guidelines address both clinical testing and food testing for Listeria.

Individuals with symptoms of meningitis and/or invasive disease require clinical laboratory testing, regardless of consumption of a known contaminated or recalled food product.
The optimal clinical specimens for suspected, symptomatic cases of listeriosis are blood cultures.

Testing for *Listeria* in asymptomatic people who consumed a contaminated or recalled food product is not required.

### Table 1: Clinical testing for *Listeria*

<table>
<thead>
<tr>
<th>Clinical symptoms/exposure</th>
<th>Host affected</th>
<th>Testing recommended</th>
<th>Where to submit testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic with consumption of a known contaminated or recalled food product</td>
<td>All hosts, including immunocompromised, pregnant and those 65 years of age or older</td>
<td>None</td>
<td>Not applicable</td>
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<td></td>
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<td>• Counsel regarding potential symptoms of gastroenteritis and invasive listeriosis and to consult a health care provider should these develop</td>
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<tr>
<td>Gastroenteritis with or without fever and no other symptoms AND consumption of a known contaminated or recalled food product</td>
<td>Immunocompetent hosts who are not pregnant and not 65 years of age or older</td>
<td>• Stool for routine culture and susceptibility as per usual practice</td>
<td>• Routine blood cultures can be submitted to a hospital laboratory with a hospital requisition or a commercial laboratory with an OHIP requisition*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Counsel regarding potential symptoms of invasive listeriosis and to return to the health care provider should these develop</td>
<td>• Routine blood cultures are not available at PHO</td>
</tr>
<tr>
<td></td>
<td>Pregnany, immunocompromised, or 65 years of age of older</td>
<td>• Stool for routine culture and susceptibility as per usual practice</td>
<td>• Routine blood cultures can be submitted to a hospital laboratory with a hospital requisition or a commercial laboratory with an OHIP requisition*</td>
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<td>• If evidence of fever within 24 hours of clinical assessment, may consider 2 sets of routine blood cultures (which detect <em>Listeria spp.</em>).</td>
<td>• Routine blood cultures are not available at PHO</td>
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<tr>
<td></td>
<td>All hosts</td>
<td>• Routine blood cultures (which will detect <em>Listeria spp.</em>). Two sets of blood cultures should be taken from different sites. A third set of blood cultures should be drawn only if endocarditis is suspected. Collect another set of blood cultures after 48 hours if the previous cultures are negative and there is ongoing concern of invasive infection with <em>Listeria monocytogenes.</em></td>
<td>• Routine blood and other sterile site cultures can be submitted to a hospital laboratory with a hospital requisition or a commercial laboratory with an OHIP requisition*</td>
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<td>• If clinical assessment is suggestive of possible neurological involvement (meningitis or meningoencephalitis), consider lumbar puncture and bacterial culture of cerebrospinal fluid</td>
<td>• Blood or cerebrospinal fluid cultures are not available at PHO</td>
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<td>• Culture of other potentially involved anatomic sites as needed (e.g., joint, pleural, pericardial fluid, sputum)</td>
<td></td>
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</tbody>
</table>

NB. Serology for *Listeria* is not available and stool testing for *Listeria* is not recommended. *If clinical specimens are positive for *Listeria monocytogenes*, the hospital or commercial laboratory should forward isolates to PHOL for molecular subtyping.
Food testing for Listeria:

Food testing at PHOL is performed to support local public health units to identify contaminated food products linked to human illness and mitigate ongoing exposure and risk.

Suspect foods can be submitted for testing to PHOL for laboratory-confirmed cases of listeriosis, to support a foodborne illness investigation after assessment by the local public health unit.

Food products that are already recalled are generally not tested. A recalled product may be considered for testing only for laboratory-confirmed clinical cases of listeriosis following an assessment by the local public health unit and Public Health Ontario.

For further information:

- Contact the PHOL Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free), or by email at CustomerServiceCentre@oahpp.ca

- For PHOL specimen collection information and previous Labstracts, refer to www.publichealthontario.ca/Labs

- The current version of the PHOL General Test Requisition and other forms are available at www.publichealthontario.ca/requisitions

- PHO laboratory’s Test Information Sheets are available at www.publichealthontario.ca/test_directory

- To subscribe to future Labstracts, register on our website

- To register for Autofax and receive laboratory reports by fax directly from our laboratory information system as soon as they are released, contact the PHOL Customer Service Centre