Type 1 Diabetes Serology - New Parameters

Type 1 diabetes (also insulin-dependent diabetes) is a chronic autoimmune disease resulting from the pancreatic beta-cell destruction that leads to an absolute insulin deficiency. Prior to clinical onset, type 1 diabetes is often characterized by circulating autoantibodies against a variety of islet cell antigens, including glutamic acid decarboxylase (mainly GAD65 kDa isoform), tyrosine phosphatase (IA2) and insulin. Autoantibodies against islet cell antigens are important preclinical markers as they may be present for years before diagnosis of diabetes is clinically confirmed. Whereas other metabolic assays show normal patterns.

GAD65 autoantibodies:
- found prior to disease onset
- present in 70-80 % of new-onset patients
- more prevalent in younger onset patients
- prediction, diagnosis, and management of patients with diabetes

IA2 autoantibodies:
- present in 50-70 % of new-onset patients depending on the age
- especially younger children reveal a high prevalence
- correlates with a rapid progression to diabetes

IA2-GAD65 combining:
- detects more than 90 % of new onset patients
- ideal screening assay to identify individuals of high risk for type 1 diabetes mellitus

<table>
<thead>
<tr>
<th>Autoantibody</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Reference reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD65 Ab</td>
<td>92 %</td>
<td>98 %</td>
<td>WHO: NIBSC 97/550</td>
</tr>
<tr>
<td>IA2 Ab</td>
<td>70 %</td>
<td>99 %</td>
<td>WHO: NIBSC 97/550</td>
</tr>
<tr>
<td>IA2-GAD65 Screen</td>
<td>98 %</td>
<td>100 %</td>
<td></td>
</tr>
</tbody>
</table>

New ELISA range includes:
- GAD65 Ab (RE70371)
- IA2 Ab (RE70381)
- IA2-GAD65 Screen (RE70391)

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