

Pathology and Laboratory Medicine Memorandum

To: Endocrinology and Internal Medicine Healthcare Providers

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Message: Autoantibody Testing for Suspected Type 1 Diabetes Mellitus in Adults

Effective September 23rd, 2024, Pancreatic Islet Cell antibody testing is no longer offered in Nova Scotia Laboratories, as more specific autoantibodies associated with type-1 diabetes mellitus (T1DM) have emerged. Adults with recent onset hyperglycemia and clinical symptoms suggestive of T1DM, can be evaluated to confirm this diagnosis using the following antibodies in conjunction with family history and C-peptide values.

1. Glutamic Acid Decarboxylase 65 Antibodies (**GADA65**): GAD65 should be used as the first line as it is by far the most prevalent autoantibody found in ~80% of adults with newly diagnosed T1DM. However, GAD 65 antibodies can be positive in other conditions. This test is referred to In-Common Laboratories (\$65)
2. If GAD65 is negative and the patient is strongly suspected to have T1DM, order the following panel: **Type -1 diabetes mellitus evaluation** (do not order individually, referred to Mayo Clinic Laboratories \$95USD)
 - Tyrosine Phosphatase-Like Insulinoma Antigen-2 Antibodies (IA-2As)
 - Insulin Autoantibodies (IAAs)
 - Zinc Transporter 8 Antibodies (ZnT8As)

Important Notes:

- While GAD65 antibodies are more prevalent, they may be less specific for destruction of pancreatic beta cells compared with antibodies against ZnT8 and IA-2A. The positivity rate of each of the latter antibodies however can be low in adults with newly diagnosed T1DM. Their positivity rate is much higher in children with T1DM.
- Testing of the above antibodies may not be useful in patients with:
 - Long standing T1DM diabetes as their levels tend to wane over time.
 - Fulminant T1DM
- Insulin Antibodies (IAA):
 - May be falsely positive in patients who are on insulin therapy.
 - Can be requested as an individual test in the evaluation of hypoglycemia of unclear origin but will be approved on a case-by-case basis.

Reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10298549/pdf/ijms-24-10012.pdf>

For questions, please contact Dr. Manal Elnenaei at 902-473-5194.