Division of Laboratory Medicine

Immunology

Autoimmune diabetes marker panel

General information

The assessment of autoantibodies to pancreatic β cell antigens is an important serological marker of type 1 diabetes mellitus (Type 1 DM). The antigens recognised by these antibodies include insulinoma associated antigen 2 (IA-2), glutamic acid decarboxylase (GAD) GAD65kDa isoform, zinc transporter 8 (ZnT8) and insulin. The Autoimmune diabetes panel contains IA-2 antibodies, ZnT8 antibodies and GAD antibodies.

Assay interferences: Please see the user guide for individual analytes

Laboratory information

Analyte: Insulinoma associated antigen 2 (IA-2) antibodies, glutamic acid decarboxylase (GAD) GAD65kDa isoform antibodies, zinc transporter 8 (ZnT8) antibodies

Units: Please see the user guide for individual analytes

Specimen type: Serum (Brown top serum gel bottle)

Frequency of analysis: At initial diagnosis and in patients with suspected type 1 diabetes. Highest accuracy seen at initial presentation.

Turnaround times: 10 days

Specimen transport: At room temperature

Additional/special requirements: None

Method: ELISA

Participation in EQA Scheme: UK NEQAS for Diabetic Markers

Clinical information

Interpretation: Autoimmune diabetes associated autoantibodies (ADAA) can be seen before clinical symptoms and used to stratify risk of progression to overt diabetes. In patients without a current diabetes diagnosis the likelihood of progression to diabetes within 5 years increases as additional antibody positivity increases. The 5-year risk of progression with only Islet cell antibody positivity is 2.2% but this increases up to 70% when 3 additional antibodies (including ZnT8, IA-2 and GAD65) are also present (Polly, 2010). ADAA positivity can be lost as islet cell destruction progresses leading to misleading negative results. NG17 states the false negative rate can be reduced by carrying out quantitative tests for 2 different diabetes specific autoantibodies (with at least 1 being positive). Serum C-peptide should be used if there is still diagnostic uncertainty after the use of autoantibody testing.

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Reference range: Please see the user guide for individual analytes

Polly J. Bingley (2010) Clinical Applications of Diabetes Antibody Testing, *The Journal of Clinical Endocrinology & Metabolism*, **95**, 25–33

(Last updated July 2023)