IA2

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. IA-2 antibodies can be ordered individually, or as part of a panel containing IA-2 antibodies, ZnT8 antibodies and GAD antibodies.

Assay Interferences: Analysis by the manufacturer of sera from autoimmune disease controls indicated no interference from autoantibodies to TSH receptor antibody. 5% of sera positive for rheumatoid factor and 5% of sera positive for autoantibodies to thyroglobulin and thyroid peroxidase were positive for IA2 using this method. These sample were also positive to GAD antibodies using the RSR GAD ELISA.
Haemolysed, icteric and lipaemic samples should not be used.

Laboratory information

Analyte: Insulinoma associated antigen 2 (IA-2) antibodies

Units: U/mL

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.

Reference Range: Negative is <7.5 U/mL

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

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