GUIDELINES FOR C-PEPTIDE TESTING Suspected Type IN ADULTS WITH DIABETES 1 Diabetes (Welsh Endocrine & Diabetes Society Endorsed Guidance) (< 3 years from diagnosis) After 3 years Test Negative from diagnosis autoantibody * Positive Manage according Check serum C peptide to clinical diagnosis or urine C-peptide Consider probability creatinine ratio Of MODY*** based Treat as On clinical feature Type 1 Diabetes Serum >600 pmol/L Serum < 200 pmol/L Urine >/= 0.6 nmol/mmol Urine < 0.2 nmol/mmol **Autoantibody testing Serum 200 - 600 pmol/L Anti-GAD, Anti-IA2 & Urine >/= 0.2 - < 0.6 nmol/mmol Anti-ZnT8 likely Type Treat as Type 2 Diabetes 1 Diabetes Clinical criteria suggestive of Type 1 Diabetes Intermediate Younger age of onset (<30 years) rapid progression to insulin BMI <25kg/m2 Consider supervised Ketoacidosis insulin withdrawal Rapid weight loss Assess for MODY*** Presentation with high HbA1c (MODY calculator) (at least meets two above criteria)

Continuous insulin started within 3years of diagnosis Antibody negative or not assessed at diagnosis

Long standing Diabetes (> 3 years from diagnosis)

Note: we advise the following

- 1. When measured before 3 years C-peptide concentrations >200 pmol/l, do not exclude later severe insulin deficiency. Therefore, measure only after 3 years of diagnosis.
- C-peptide should be assessed on a non-fasting blood sample, ideally within 1-5 hours of a carbohydrate containing meal.
- 3. C-peptide should not be tested within 2 weeks of a hyperglycaemic emergency, as levels may be temporarily suppressed.
- 4. C-peptide is cleared by the kidneys and is increased in end stage renal failure. For this reason, C-peptide should not be used to differentiate Type 1 / Type 2 Diabetes in these patients.
- 5. C -peptide should not be assessed if hypoglycaemia within last 12 hours.
- 6. We advise against measuring autoantibodies in patients with no clinical features of Type 1 Diabetes and after 3 years of diagnosis.
- 7. *We advise against measuring autoantibodies and C-peptide routinely to confirm Type 1 Diabetes.
- 8. ** CAV diabetes islet cell antibodies (Anti-GAD, Anti - IA2 & Anti-ZnT8 autoantibody) can be requested in the same sample
- 9. ***Consider mody when age of diagnosis is <35 years with negative antibodies and C-peptide > 200 pmol/l (mody calculator:http://www.Diabetesgenes.org /exeter-Diabetes)
- 10. For Urine C peptide creatinine ratio (UCPCR) interpretation kindly refer to https://www.exeterlaboratory.com/test/ c-peptide-urine/

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References

1. Tatovic D, Jones AG, Evans C, et al. Diagnosing Type 1 Diabetes in adults: guidance from the uk t1d immunotherapy consortium. Doi:10.1111/dme.14862. Epub 2022 may 6 2. Recommendations | Type 1 Diabetes in adults: diagnosis and management | guidance | nice (ng17), August 2022

Excluded

Consider repeat C-peptide at 5 years from diagnosis: Re- classify diagnosis