Blood Sciences Clinical Information Sheet

Ref: 16/2

Date issued: 19th September 2016

East Lancashire Hospitals NHS Trust

Blood Sciences Department, Clinical Laboratory Medicine

HbA1c—Use in the diagnosis of diabetes in non-pregnant adults

We are recommending HbA1c as the first line diagnostic test in suspected diabetes EXCEPT in the situations listed below:

- All children & young people
- Suspected type 1 DM
- Short duration of diabetes symptoms
- Pregnancy & up to 13 weeks post partum*
- Acute pancreatic damage/pancreatic surgery
- During an acute illness
- Renal failure
- Liver failure
- Haemoglobinopathies
- Anaemia (haemolytic, iron deficiency and B12 deficiency)
- Short term treatment of corticosteroids or recently started on anti-psychotic drugs
- HIV infection
- Presence of interfering peaks in the chromatographic method used for HbA1c. In this situation, an explanatory comment will be provided on the laboratory report & the HbA1c result will be reported as 'Not Available'.

Fasting plasma glucose measurements are recommended in these situations.

Please refer to the table below to interpret HbA1c or fasting plasma glucose results. Only one type of diagnostic test should be requested in each patient.

HbA1c (mmol/mol)	FPG (mmol/L)	Interpretation
<42	<5.5	Not consistent with diabetes
42-47	5.5-6.9	Increased risk for progression to diabetes. Suggest review risk factors for diabetes and annual measurement of HbA1c or FPG.
≥ 48	≥ 7.0	Consistent with diabetes in symptomatic patients. If NOT symptomatic, suggest repeat the same test to confirm the diagnosis within 2 weeks.

** Please refer to NICE NG3 (Diabetes in pregnancy) for post natal HbA1c and FPG interpretation following gestational diabetes*

References:

1. WHO 2011 .Use of glycated haemoglobin (HbA1c) in the diagnosis of Diabetes Mellitus

2. John WG. Use of HbA1c in the diagnosis of diabetes mellitus in the UK. The implementation of WHO guidance 2011. *Diabetic Med* 2012; 29:1350-1357

3. https://www.nice.org.uk/guidance/ph38 (Type 2 diabetes: prevention in people at high risk)

4. https://www.nice.org.uk/guidance/ng3 (Diabetes in pregnancy)

For further information or if you have any queries, please contact the Clinical Biochemists:

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HbA1c—Monitoring non-pregnant adults with diabetes mellitus

The table summarises the recommended frequency of HbA1c measurement and targets in adults with Type 1 and Type 2 Diabetes from the recently published NICE guidelines (NICE NG17 and NG28).

Diabetes Type	HbA1c Measurement Frequency	HbA1c Target
Type 1	Every 3-6 months	**Aim for a target of ≤48 mmol/mol to minimise the risk of long term vascular complications**
Type 2	Every 3-6 months until the HbA1c is stable then every 6 months	**Aim for a target of ≤48 mmol/mol in patients managed either by lifestyle/diet or lifestyle/diet combined with a single drug not associated with hypoglycaemia.** **Aim for a target of ≤53 mmol/mol in patients on a drug associated with hypoglycaemia.** *Consider relaxing the target on a case by case basis (with particular consideration for people who are older or frail), in those who are unlikely to achieve the longer-term risk reduction benefits, in those where hypoglycaemia poses a high risk and in those with significant comorbidities.*

Information about the East Lancashire Hospitals HbA1c method

The method used to measure HbA1c at ELHT is ion exchange chromatography. In certain patients, the presence of interfering peaks due to possible haemoglobin variants means that the HbA1c result is invalid and cannot be reported. In such circumstances in patients known to have diabetes, the sample will be sent to a referral laboratory that uses a method less affected by interfering peaks. Very occasionally, we will be unable to provide a HbA1c result using either our method or the referral laboratory method. The laboratory will advise when this situation arises and alternative indicators of glycaemic control will be recommended in these patients (e.g. fructosamine or quality controlled blood glucose profiles).

References:

1. https://www.nice.org.uk/guidance/ng17 (Type 1 diabetes in adults)
2. https://www.nice.org.uk/guidance/ng28 (Type 2 diabetes in adults)

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