

Diagnostic criteria for DM. (VVImp) 8 or 4 marks

1. fasting blood sugar level ^① over 126 mg/dL ^② or more than one occasion.

2. two hour post prandial sample after carbohydrate rich meal gives values over 200 mg/dL, even at one occasion.

3. if the random blood sugars level is more than 200 mg/dL in more than one occasion

4. if both fasting and 2hr PPBS values are above the normal levels on same occasion.

5. HbA_{1c} level is more than 6.5% is diagnostic to DM.

Effects of hyperglycemia.

• when there is hyperglycemia proteins in the body may undergo glycation. This is non enzymatic process.

eg: glycated hemoglobin.

Estimation of HbA1c.

- Normal level of glycosylated Hb is (HbA1c) is 0-6% of total Hb.
- Hb A1c level reflects the average blood glucose concentration over the preceding 6-8 weeks.
- Because RBC life span is 120 days.
- when blood sugar increases glycosylation of Hb increases, once attached it doesn't relieve.
- an elevated glycosylated Hb indicates poor control of DM.
- estimation of glycosylated hemoglobin is not for diagnosis of DM.
- It can guide the physician in selection of appropriate treatment.
 - i.e., to increase dose of insulin.
 - rigorous diet control etc.
- proteins other than hemoglobin e.g. plasma albumin, lens, proteins etc. undergo glycosylation.
e.g.: fructosamine albumin (glycosylated albumin)
- In addition to these glycosylated proteins advanced glycation end products (AGEs) are found in tissue proteins such as collagen in diabetes patients.

In diabetic vascular tissues, the concentration of AGEs is very much increased.

• Name the factors used to diagnose glycaemic index?

⇒ fructosamine albumin (glycated ~~alb~~ alb.)

⇒ glycated Hb (HbA_{1c})

OGTT.

INDICATIONS. ✓

- patients with symptoms of DM.
- Fasting plasma blood glucose level between 110 - 126 mg/dL
- during pregnancy with past history of big baby, miscarriages.
- To rule out gestational glycosuria.

CONTRAINDICATIONS.

- Not to be done in patients with known DM. It has no role in follow up of DM.
- Not to be done in actually ill patients.

Test procedure.

- patient should take sufficient carbohydrates in diet for at least 3 days prior to test.
- A diet containing 30 - 50 grams of carbs should be taken on the evening prior to test.
- Test is carried out after 12 hours of fast in the morning.

The present WHO recommendation is to collect only the fasting and 2 hour post glucose load samples of urine and blood.

This is called mini GTT, that is zero hour and 2 hour samples.

Normal response. OSPE answers Qs: 1

In normal subjects fasting plasma sugar level is 70 - 110 mg/dl.

peak values are obtained within one hour of glucose load i.e., less than 160 mg/dl.

value return to fasting level by 2 - 2 1/2 hours.

This is due to secretion of insulin.

DIABETIC GGT.

