

## *Please read this bit first*

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

## CHEMISTRY LEGEND

OCTOBER 2009

## HYPERGLYCAEMIA

**Hyperglycaemia** is a common finding, particularly in the postprandial period. The main clinical concern is fasting hyperglycaemia and the possibility of diabetes mellitus. Diabetes mellitus is defined as a "state of chronic hyperglycaemia". It may be primary requiring lifelong therapy or secondary to treatable causes e.g. Cushing's disease.

There are also a number of "temporary" causes of hyperglycaemia which may not only be confusing but also have sinister connotations; e.g. about 60% of the "stress" hyperglycaemias associated with myocardial infarction has subsequently been shown to be due to primary diabetes mellitus. Thus, in cases of "stress" and drug-induced hyperglycaemia it is wise to re-investigate the patient after the stress has resolved or the drug ceased.

Besides the oral glucose tolerance test (OGTT) there are a number of other laboratory investigations which may be useful in the assessment of hyperglycaemia:

- urine - glucose, ketones
- plasma - insulin, C-peptide, lactate, ketones & HbA1C

### **Causes of hyperglycaemia**

#### **Postprandial**

Carbohydrate intake: oral / intravenous

#### **Fasting**

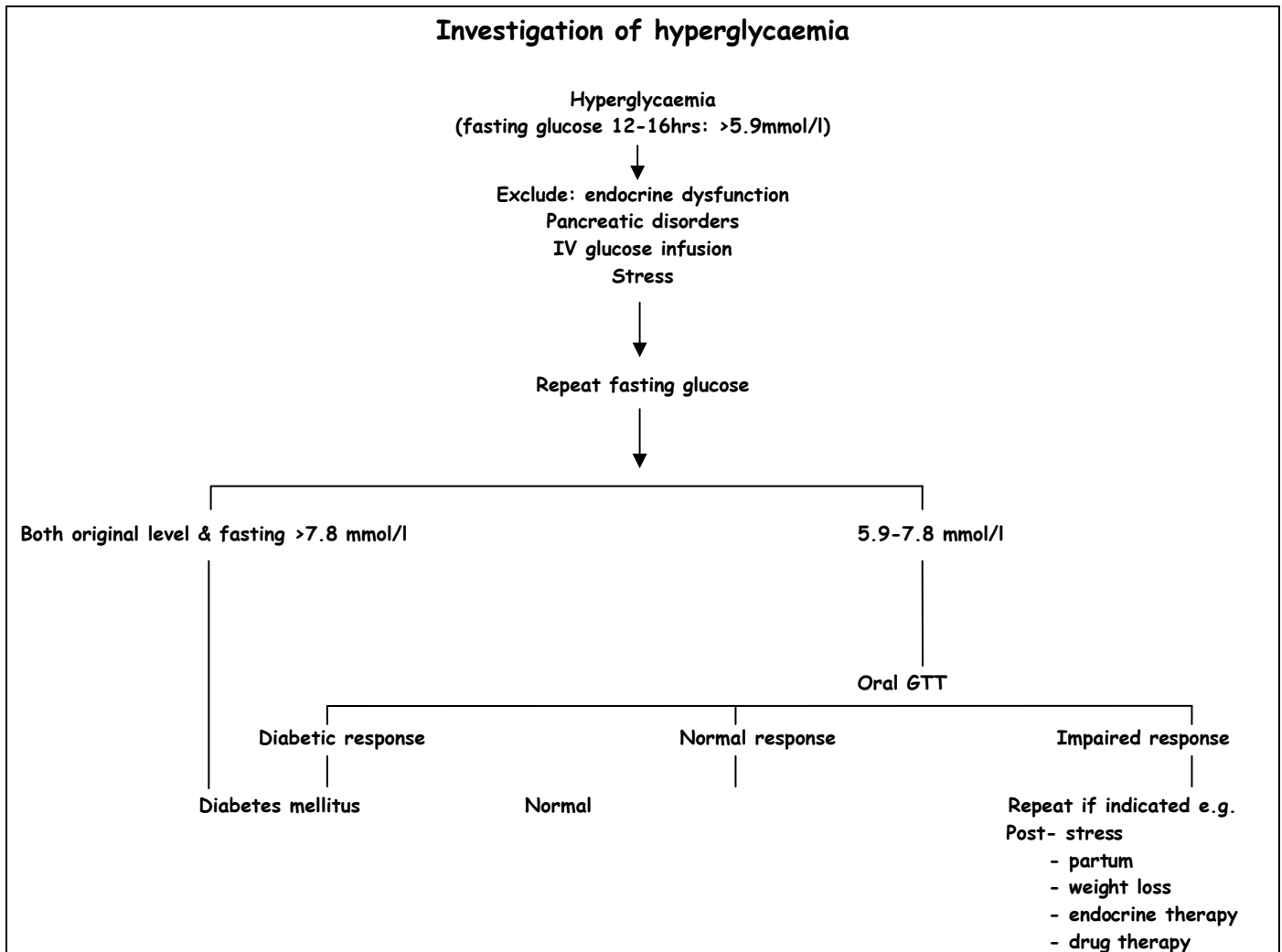
Diabetes mellitus: insulin-dependent diabetes; non-insulin-dependent diabetes

Pancreatic disorders: pancreatectomy, haemachromatosis, chronic pancreatitis, carcinoma of the pancreas

Endocrine causes: Cushing's syndrome, pheochromocytoma, acromegaly, thyrotoxicosis

Stress reactions (temporary hyperglycaemia): trauma, shock, infection, cerebrovascular accident, myocardial infarction, burns

Drugs (temporary hyperglycaemia): salicylates, steroids, thiazides, oral contraceptives, oestrogens.



## References

1. Cases in chemical pathology - A Diagnostic approach 4<sup>th</sup> edition

## Questions

1. Discuss the causes of hyperglycaemia.
2. Discuss the laboratory findings in a patient diagnosed with hyperglycaemia.
3. How would you go about investigating a patient suspected of being hyperglycaemic?