**Question 1**

Type I Diabetes is which if the following hypersensitivity reactions?

A Hypersensitivity reaction 1

B Hypersensitivity reaction 3

C Hypersensitivity reaction 4

D Hypersensitivity reaction 2

Explanation C

IDDM is a type IV hypersensitivity reaction

It is thought that during early life, damage to islet cells leads to exposure of islet cell antigens to CD4+ Th1 cells in peri pancreatic lymph. Activated T cells are then trafficked to the pancreas and cause B cell injury. There is thus a failure of self-tolerance in T cells which may be due to defective clonal deletion or regulatory processes. A role for antibodies has been suspected as most patients have autoantibodies against islet antigens, however it is unclear if the antibodies are involved in causing injury or are produced as a consequence of islet cell damage. Therefore, it is classed as a Type IV hypersensitivity reaction

**Question 2**

Which of the following statements is correct regarding the pituitary gland?

A luteinizing hormone (LH) - anterior - basophil

B Prolactin - posterior - acidophil

C Vasopressin (VP) - posterior - basophil

D Growth hormone - posterior- acidophil

Explanation A

Prolactin and growth hormone are produced in the anterior pituitary. Vasopressin is produced by modified glial cells and stored in the posterior pituitary

Note: a nice way to remember it

Post - Vasopressin (ADH) and Oxytocin Ant - FLAT PiG (pig=acid) F-FSH L-LH A-ACTH T-TSH all basophil Prolactin GH both acidophil

An even better way to remember this is: B-FLAT: basophils = FSH, LH, ACTH and TSH, and GPA (as in grade-point average): growth hormone and prolacting = acidophils

**Question 3**

The pathogenesis of Type 1 diabetes includes which of the following?

A Decreased insulin sensitivity

B Auto immune insulitis

C Abnormal glucokinase activity

D No anti-islet cell antibodies found at diagnosis

Explanation B

A summary of the pathogenesis of type 1 diabetes mellitus (DM) includes: decreased blood insulin, anti-islet cell antibodies, HLA-D linked autoimmune immunopathologic mechanisms, severe insulin deficiency, early insulitis, beta cell depletion and marked atrophy and fibrosis of the islet cells. There is a 50% concordance in twins. Insulitis is an inflammation of the islets of Langerhans.

**Question 4**

Cushings disease is associated with all of the following except?

A Osteoporosis

B Truncal obesity

C Glucose intolerance

D Hypotension

Explanation D

Osteoporosis occurs in 75% of patients with Cushing’s disease. There is no hair loss. Central obesity occurs around the trunk and upper back in 85-90% of patients. Hypertension occurs in 75% of cases. Other clinical features include: moon facies, weakness and fatigability, plethora, glucose intolerance, skin striae, menstrual abnormalities and neuropsychiatric abnormalities.

**Question 5**

Which of the following is not typical of Type II DM?

A 60-80% concordance in monozygotic twins

B Mild B cell depletion

C Relative insulin defeciency

D Insulitis early

Explanation D

Type 2 DM- Clinical: onset >30yr, obese, normal or increased blood insulin, no anti-islet cell antibodies and ketoacidosis rare.

Genetics: 60-80% concordance in monozygotic twins, no HLA association. (Note in the table it says 90-100%)

Pathogenesis: insulin resistance, relative insulin deficiency. Islet cells: focal atrophy and amyloid deposits, but no insulitis, Mild B cell depletion. The association of type II DM with obesity is greater than 80% in patients.

The two metabolic defects that are characteristic of type 2 DM: a decreased response of peripheral tissue to insulin (insulin resistance) and B cell dysfunction that is manifested as inadequate insulin secretion the presence of insulin resistance and hyperglycaemia

Note: current textbook says greater than 90% concordance. However, I have left the question in the old format

**Question 6**

Which of the following is characteristic of type 2 diabetes?

A Early insulitis

B Less than 30% concordance in monozygotic twins

C Decreased peripheral receptor sensitivity

D The association of type II DM with obesity is greater than 90%

Explanation C

A summary of the characteristics of type II diabetes mellitus (DM) include: normal or increased blood insulin, no anti-islet cell antibodies, no HLA association, insulin resistance, relative insulin deficiency, no insulitis, focal atrophy and amyloid deposits along with mild beta cell depletion. There is 60-80% concordance in monozygotic twins compared with nearly half that in dizygotic twins. In first degree relatives with type II DM (and in non-identical twins) the risk of developing disease is 20-40% versus 5-7% in the population at large. The association of type II DM with obesity is greater than 80% in patients.

The two metabolic defects that are characteristic of type II DM: a decreased response of peripheral tissue to insulin (insulin resistance) and B cell dysfunction that is manifested as inadequate insulin secretion the presence of insulin resistance and hyperglycaemia

**Question 7**

Which of the following is not typical of type 1 diabetes mellitus

A Anti-islet cell antibodies

B Insulitis early

C Focal atrophy and amyloid deposits

D HLA-D linked

Explanation C

Type 1 DM- Clinical: onset <20yr, normal weight, anti islet cell antibodies, ketoacidosis common. Genetics: 50% concordance in twins, HLA-D linked.Pathogenesis: Autoimmunity, immunopathologic mechanisms. Severe insulin defeciency. Islet cells: Insulitis early, marked fibrosis and atrophy. B cell depletion

Type 11 DM- focal atrophy and amyloid deposits

**Question 8**

Hypothyroidism is associated with all of the following, with the exception of?

A Cretinism

B Weight gain

C Decreased hair growth

D Cold intolerance

Explanation C

Coarse hair is found in hypothyroidism rather than a decrease in hair growth. Hair loss seems to be an uncommon finding in hypothyroidism. Many sources say that coarse brittle hair is more common. Cretinism hypothyroidism that develops in infancy or early childhood has a higher prevalence (due to endemic dietary iodine deficiency) in populations of mountainous areas. It has become less frequent in recent years due to the widespread supplementation of foods with iodine. Cretinism on rare occasions results from inborn errors of metabolism that interfere with biosynthesis of thyroid hormone

Clinical picture - impaired skeletal system and CNS development; manifested by severe mental retardation, short stature, coarse facial features, protruding tongue, and umbilical hernia

Note: 2