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1- Which of the following is true concerning a 68 year old male with type 2 diabetes diagnosed with type IV renal tubal acidosis?

- 1) Aminoaciduria would be expected.
- 2) Fludrocortisone treatment is effective
- 3) Increased Glomerular filtration rate is expected.
- 4) Increased urinary bicarbonate would be expected.
- 5) Normal renal handling of K⁺ and H⁺

Answers-2

H⁺ secretion, sodium reabsorption and ammonia production diminishes. RTA 4 is in effect hyporeninaemic hypoaldosteronism or failure of aldosterone action and thus helped treated with mineralocorticoids. It is usually seen in chronic renal disease and hence low GFR and particularly. Aminoaciduria and increased urine bicarbonate are features of RTA types 1 and 2.

2- A 16 year old male with a day history of malaise, weakness and vomiting. He was diagnosed with Insulin dependent diabetes mellitus 3 years previously. Which ONE of the following supports a diagnosis of diabetic ketoacidosis:

- 1) Abdominal pain at onset
- 2) A serum bicarbonate of 10 mmol/l
- 3) A serum glucose 14 mmol/l
- 4) Decreased appetite in the past few days
- 5) Shallow respirations

Answers-2

a-An unusual but recognised feature particularly in children. However does not support a diagnosis of DKA. b-Suggests metabolic acidosis. c-'Normoglycaemic DKA' can occur and a glucose of 14 doesn't rule out the diagnosis but it does not support the diagnosis. d-Usually patients are unwell with infections and anorexia. e-Respiratory compensation leads to rapid deep (Kussmaul's) breathing. (Dr Mike Mulcahy)

3- Which of the following statements concerning abnormalities of the haemoglobin molecule is true?

- 1) Alpha thalassaemia is due to a deficiency of beta-chain production
- 2) HbS is caused by a single base mutation on the beta-chain
- 3) genes for the alpha and beta chains are located on the same chromosome
- 4) in thalassaemia persistence of HbF is an adverse prognostic sign
- 5) oligoneucleotide probes may assist in the diagnosis of haemoglobinopathies

Answers-2

Alpha Thalassaemia is due to abnormalities of the alpha chain. Persistence of HbF has survival advantages in severely affected subjects. C-alpha 16, beta 11. e-Hb electrophoresis(Dr Shu Ho)

4- Which of the following is a characteristic feature of familial hypercholesterolaemia?

- 1) Autosomal dominant inheritance
- 2) elevated chylomicrons
- 3) hypertriglyceridaemia
- 4) increased expression of LDL receptors
- 5) Palmar xanthomas

Answers-1

Familial hypercholesterolaemia is an autosomal dominant condition manifest by increased LDL concentrations (not chylomicrons) due to constitutional abnormalities and reduced numbers of the LDL receptor. Hypertriglyceridaemia is not characteristic and HDL concentrations are usually decreased. Tendon xanthomata are characteristic and the condition is associated with a premature cardiovascular mortality.

5- Which one of the following is a feature of the VIPoma syndrome?

- 1) Alkalosis
- 2) Hypoglycaemia
- 3) Hypokalaemia
- 4) Increased gastric acid secretion
- 5) Provocation of VIP release by somatostatin

Answers-3

6- In which of the following is mental retardation an expected finding?

- 1) Alkaptonuria
- 2) Cystinuria
- 3) Glycogen storage disease
- 4) Lactose intolerance
- 5) Maple syrup urine disease

Answers-5

MENTAL RETARDATION. Fragile X syndrome-commonest male cause. Hypoxia at birth, intraventricular haemorrhage, rhesus disease, Congenital infections - toxoplasmosis, CMV, rubella, herpes), hypoglycaemia, meningitis, hypothyroidism (cretinism, tuberous sclerosis, Down's, Tay-Sach's, Cornelia De Lange, Hartnup - biochemical, treatable with diet. -homocystinuria, phenylketonuria -maple syrup urine disease, tryptophanuria -galactosaemia

7- Leukotrienes:

- 1) Are formed from the cyclooxygenase pathway
- 2) Are synthesized by fibroblasts
- 3) Decrease vascular permeability
- 4) Leukotriene D4 has been identified as SRS-A which causes bronchial wall smooth muscle relaxation
- 5) Stimulate mucus secretion

Answers-5

Leukotrienes are synthesized by leucocytes.They are mediators of allergic reaction.

They increase vascular permeability and attract neutrophils and eosinophils to inflammatory sites. Leukotrienes are synthesised via the lipoxygenase pathway.

Leukotriene D4 has been identified as SRS-A which causes bronchial wall and intestinal smooth muscle contraction (not dilatation).

Leukotrienes also stimulate

mucus production, an important consideration in the pathophysiology of bronchial asthma.

8- Serum biochemistry of a 60 year old man revealed calcium of 1.98 mmol/l and phosphate of 0.55 mmol/l with an alkaline phosphatase of 450 IU/l.Which among the following most suits with the above serum biochemistry?

- 1) Osteoporosis
- 2) Osteomalacia
- 3) Pagets Disease
- 4) Secondary Hyperparathyroidism
- 5) Renal failure

Answers-2

Osteomalacia is associated with low calcium and phosphate with raised alkaline phosphatase. Serum biochemistry is normal in osteoporosis. Pagets disease is

associated with normal calcium and phosphate with raised alkaline phosphatase.

In renal failure when tertiary hyperparathyroidism sets in there is low calcium with raised phosphate.

9- Low uptake of 123I on the thyroid uptake scan would be an expected finding in:

- 1) A solitary toxic nodule
- 2) A multi-nodular toxic goitre
- 3) Amiodarone induced thyrotoxicosis type 1
- 4) DeQuervain's thyroiditis
- 5) Graves' thyrotoxicosis

Answers-4

DeQuervain's thyroiditis is classically associated with low or absent 123I (the 131 radioactive isotope of iodine) uptake. The others will have high or normal uptake.

In particular type 1 amiodarone induced thyrotoxicosis may be distinguished from the thyroiditis of type 2 by the normal or high uptake scan.

10- A 55 year-old female complaining of vague tiredness is found to have a serum corrected calcium concentration of 2.9 mmol/l. Examination was unremarkable. Which of the following results confirms the suspected diagnosis of primary hyperparathyroidism?

- 1) High normal 1,25-dihydroxyvitamin D concentration
- 2) High normal 24 hour urinary calcium concentration
- 3) High normal plasma parathyroid hormone concentration
- 4) Low normal plasma phosphate concentration
- 5) Low normal serum 25-hydroxyvitamin D concentration

Answers-3