MCM Practice Questions: Lecture Day 6

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Lecture 18: Amino Acid Metabolism

1) Karan has been fasting for 16 hours and he has depleted his liver glycogen stores. He is also trying out a new fad diet that stipulates not eating any foods with protein. Which AA will most likely be metabolized to produce glucose?

(A) Proline

(B) Histidine

(C) Arginine

(D) Leucine

(E) Valine

2) Select the true statement from the following:

(A) Arginine is essential for both adults and children

(B) Tyrosine is produced from Tryptophan

(C) Asparganine is conditionally essential

(D) The sulfur group in Cysteine comes from Methionine

3) Which of the following amino acids can be synthesized via the metabolite Phosphoglycerate?

(A) Glutamine

(B) Glutamate

(C) Glycine

(D) Asparganine

4) A newborn is brought in for a regular checkup. The pediatrician notices no abnormal findings during the physical. Blood tests are run and some odd results are found. The patient has elevated levels of Methionine, Homocysteine, and Cystathionine. What is the most likely deficiency this patient has?

(A) Cystathionine Synthase Deficiency

(B) Cystahionase Deficiency

(C) B6 Deficiency

(D) B12 Deficiency

5) An 37 year old male presents to an urgent care complaining of excruciating pain in his back. He was recently diagnosed with arthritis. Lab tests show increased homogentisic acid in urine and in tissue. He is consequently diagnosed with Alkaptonuria. What enzymatic deficiency is causing this pathology?

(A) Fumarylacetoacetate hydrolase

(B) Tyrosine Hydroxylase

(C) Homogentisic Acid Oxidase

(D) Phenylalanine Hydroxylase

6) A newborn baby is under monitoring when the nurse notices an odd smell emanating from the newborn. Lab tests are run and the patient has elevated branched-chain AAs and elevated Branched-chain ketoacids. What is the most likely diagnosis a physician would give?

(A) MSUD

(B) Phenylketonuria

(C) Homocystinuria

(D) Tyrosinemia I