

Disorders of uric acid metabolism / Questions and case reports

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Questions

- In humans, carbamoyl phosphate is a precursor of biosynthesis:**
 - A - uridine monophosphate
 - B - Inosine monophosphate
 - C - urea
 - D - glutamine
- vitamin B₁₂ metabolites play a role in**
 - A - Catabolism of fatty acids with an odd number of carbon atoms
 - B - In the formation of acetyl-CoA from pyruvate
 - C - In the transfer of the CH₃- group from the tetrahydrofolate coenzyme to homocysteine
 - D - In the synthesis of palmitate
- All of the following statements relating to purine nucleotide biosynthesis are correct except:**
 - A - PRPP is a substrate in this metabolic pathway
 - B - Glutamine forms 2 nitrogen atoms of the purine cycle
 - C - Formation of N-glycosidic bond only after completion of the base structure
 - D - Folate cofactors are involved in the carbons of the purine cycle
 - E - Inosine monophosphate is a precursor of both AMP and GMP.
- Gout is caused by an excessive increase in the concentration of uric acid in the blood. The cause can be both overproduction and insufficient excretion. A ¹⁵N-labeled amino acid can be administered to recognize this situation. Which is best for this purpose?

Answers

Case reports

A patient being treated for acute leukaemia

A 3-year-old girl is diagnosed with acute lymphocytic leukaemia. She received an infusion, allopurinol, day 2 therapy vincristine, prednisone, methotrexate, etc. In 5 days released home. She continued therapy at home (prednisone, allopurinol. Chemotherapy added again in a month. Then she got soor (candidosis) in her mouth, she couldn't eat.

Laboratory results (gradually during the month):

S-urea	4,0	5,0	1,3	0,7 (mmol/l)		
S-creatinine	62	88	62	62 (µmol/l)		
S-uric acid	714	547	238	113	137	184 (µmol/l)
white blood cells	56 300	3 700	2 800	3 700 (no./ml in blood)		

Questions:

- How do you explain the high level of uric acid (1st examination performed after 5 days of hospitalization, after discharge)?
- Why was uric acid already normal in future examinations?
- Why was the urea level 0.7 mmol / l?
- What other tests will confirm this finding?

Answers

References

Related articles

- Disorders of ureagenesis
- Antidiuratics
- Arthritis uratica

Source

- MASOPUST, Jaroslav - PRŮŠA, Richard. *Patobiochemie metabolických drah*. 1. edition. Praha : Univerzita Karlova, 1999. 182 pp. pp. 113- 114. ISBN 80-238-4589-6.

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