

CREATINURIA

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Abstract. *Creatinuria is the medical term for the presence of creatine in a patient's urine. Creatine is an important organic compound that plays a key role in energy metabolism in our body. Creatinuria can be the result of various factors, and its presence may indicate impaired renal function or other pathological conditions.*

Keywords: *creatine, pancreas, kidneys, urine, renal failure, nephrotic syndrome, glomerulonephritis, activity.*

INTRODUCTION

Creatinuria refers to the presence of creatine or its breakdown product, creatinine, in the urine. Creatine is a naturally occurring amino acid derivative that plays a crucial role in energy metabolism, particularly in muscle cells. It is synthesized in the liver and kidneys from amino acids, mainly glycine, arginine, and methionine, and is then transported to muscles, where it is converted into phosphocreatine. Phosphocreatine serves as a readily available source of high-energy phosphate groups that can be used to regenerate adenosine triphosphate (ATP), the primary energy currency of cells. During periods of increased energy demand, such as physical exercise, phosphocreatine rapidly donates its phosphate group to ADP (adenosine diphosphate), forming ATP and providing a quick source of energy. Creatinine is a byproduct of creatine metabolism and is produced at a relatively constant rate in the body. It is filtered by the kidneys and excreted in the urine. The concentration of creatinine in the blood and urine is commonly used as an indicator of kidney function. Elevated levels of creatinine or creatine in the urine can occur due to various factors. It can be a result of excessive dietary intake of creatine supplements, certain medical conditions affecting the muscles or kidneys, or the use of certain medications. However, it is important to note that a single measurement of creatinine or creatine in the urine is not sufficient to diagnose a medical condition, and further evaluation is usually required to determine the underlying cause. Monitoring creatinuria levels can be useful in assessing kidney function, particularly in conditions such as kidney disease or kidney injury. It may also be measured in athletes or individuals using creatine supplements to monitor their response to supplementation.

Creatine is produced in the liver, pancreas and kidneys from the amino acid creatine. It is usually filtered by the kidneys and excreted from the body through urine. However, various factors can lead to increased levels of creatine in urine:

Kidney pathologies: Various kidney diseases, such as chronic renal failure, nephrotic syndrome or glomerulonephritis, can lead to impaired renal function and increased excretion of creatine through the urine.

Physical activity: Intense physical activity, especially strength training, can lead to increased formation and excretion of creatine in the urine. This is because creatine is used by muscles to contract and provide energy.

Dietary Supplements: Creatine is a popular dietary supplement that is widely used by athletes and people seeking to increase physical activity. Consuming large doses of creatine may cause a temporary increase in creatine levels in the urine.

MATERIALS AND METHODS

Consequences of creatinuria:

Detection of creatinuria may have important clinical implications in assessing renal function and the presence of other pathological conditions. Increased levels of creatine in urine may indicate impaired renal function and potential metabolic problems.

In addition, creatinuria may be associated with a risk of developing kidney disease and cardiovascular complications. Therefore, it is important to conduct additional examinations to identify the underlying cause of creatinuria and take appropriate measures to treat it.

THE ROLE AND DISCUSSIONS

The name "creatinuria" is based on the fact that creatine is used as an energy material in muscle cells. Muscles constantly require energy to perform various functions such as walking, running, lifting weights, etc. If the source of this energy is depleted, then the muscles begin to use creatine, which is stored in the muscles and released when it is broken down.

However, in some diseases, the muscle's need for energy may be excessive, so creatine stores cannot continue to work, leading to its release and then the appearance of creatine in the urine.

Creatinuria is a manifestation of high creatine intake (as a result of physical activity), as well as other cases of excess or deficiency of this compound. They arise due to diseases, heart or liver disease, cancer, Alzheimer's disease, immunodeficiency, cerebrovascular disorders (stroke, hypertension, meningitis, etc.). Creatine is a byproduct produced in the kidneys during the catabolism of creatine. Creaturia can also occur with a diet rich in creatine, such as diet foods created with this ingredient.

It is important that, unlike creatinine, creatine does not occur in kidney disease. Its presence in the urine indicates that kidney function is still intact.

CONCLUSION.

Why we must learn it-Creatinuria, detected by increased levels of creatine in the urine, may be a sign of impaired renal function or other pathological conditions. Correct diagnosis and treatment of the underlying disease can help normalize the level of creatine in the urine and prevent possible complications. If you suspect creatinuria, it is important to consult a doctor who will conduct the necessary research and determine the optimal treatment and prevention plan.

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