

Short Note on Protein Toxicity

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Editorial Note

Protein toxicity is the result of the buildup of protein metabolic waste compounds due to poor kidney function. It can happen in people with pre-existing chronic kidney ailment, or those who have lost kidney function due to age.

Occurrence

Protein toxicity happens when an individual with impaired kidney function put away a protein-rich diet, especially, proteins from animal sources that are rapidly absorbed into the blood stream and are quickly metabolized, causing the release of a high concentration of toxic nitrogenous waste material.

Effects of a High Protein Diet

A high-protein diet is a health concern for those sorrowing from kidney disease. The main concern is that a high protein intake may endorse further renal injury that can lead to protein toxicity. The physiological variations induced by an increased protein intake, such as an enlarged glomerular pressure and hyper filtration, place further strain on already injured kidneys. This strain can lead to proteins being ineffectively metabolized and subsequently causing toxicity. A high-protein diet can main to impediments for those with renal disease and has been connected to further progression of the disease. The well-known Nurse's Health Study found a association among the loss of kidney function and an better dietary intake of animal protein by patients who had previously diagnosed with renal disease. This association endorses that a total protein intake that exceeds the suggestions may accelerate renal disease and lead to risk of protein toxicity within a diseased individual. For this cause, dietary protein restriction is a common treatment for patients with renal disease in which proteinuria is present. Protein controlled patients have been shown to have slower rates of development of their renal diseases.

Several studies, though, have found no authorization of protein toxicity due to high protein intakes on kidney function in healthy people. Diets that frequently exceed the commendations for protein

intake have been found to lead to an improved glomerular filtration rate in the kidneys and also have an effect on the hormone systems in the body. It is well recognized that these physiological effects are harmful to individuals with renal disease, but research has not found these responses to be harmful to those who are healthy and demonstrate adequate renal activity. In people with healthy kidney function, the kidneys work uninterruptedly to excrete the by-products of protein metabolism which stops protein toxicity from occurring. In response to an enlarged consumption of dietary protein, the kidneys maintain homeostasis within the body by operating at an increased capacity, producing a higher amount of urea and afterwards excreting it from the body. Although certain have proposed that this increase in waste production and excretion will cause increased strain on the kidneys, other study has not supported this. Presently, evidence suggests that changes in renal function that occur in reaction to an increased dietary protein intake are part of the usual adaptive system employed by the body to sustain homeostasis. In a healthy individual with well-functioning kidneys, there is not essential for concern that an enlarged dietary protein intake will lead to protein toxicity and decreased renal function.

Symptoms

Unexplained vomiting and a loss of appetite are pointers of protein toxicity. If those two indications are accompanied by an ammonia quality on the breath, the onset of kidney failure is a likely culprit. Individuals with kidney disease who are not on dialysis are directed to escape consumption of protein if possible, as intense too much accelerates the condition and can lead to decease. Most of the problems stem from the accumulation of unfiltered toxins and wastes from protein metabolism.

Diagnosis

A validation of kidney failure is often obtained by executing a blood test which measures the concentration of creatinine and urea (blood urea nitrogen).