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POLYNEUROPATHY: MODERN ASPECTS OF METABOLIC THERAPY

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Abstract
The article presents a review of the literature on the problem of therapy of metabolic polyneuropathy in patients with diabetes mellitus type 2 (DM2) and chronic alcohol intoxication. The most common variant of diabetic neuropathy (30-50% of patients with DM) is diabetic polyneuropathy (DPN), manifested by severe pain syndrome. The development of symmetrical distal sensory polyneuropathy (SDSP) in patients with DM2, which is characterized by intense pain neuropathic syndrome, occurs in 20-30%, and the frequency of its representation increases as the disease progresses. Vitamins B1, B6, B12 have a neurotropic effect, the deficiency of each of which leads to the formation of polyneuropathy. The appointment of a combination of thiamine, pyridoxine, cyanocobalamin well relieves pain and eliminates sensitivity disorders.

Keywords: Polyneuropathy, diabetes mellitus type 2, B vitamins, Neuromultivit.

Introduction

Peripheral nerve lesions that occur against the background of primary and secondary metabolic disorders (diabetes mellitus, chronic alcohol intoxication, deficiency of B vitamins, etc.) are referred to as metabolic polyneuropathies. The most common cause of their development is type 2 diabetes, which has acquired the character of an “epidemic of the 21st century” [1]. The most common (30–50% of patients with diabetes) variant of diabetic neuropathy is diabetic polyneuropathy (DPN) [2], a severe complication of type 2 diabetes, which is not always diagnosed in a timely manner, characterized by severe pain symptoms, a number of severe clinical disorders, early disability and a significant deterioration in the quality of life of patients [3]. Population studies have shown that varying degrees of peripheral nerve lesions are detected in almost half (15 90%) of patients with diabetes [4, 5]. The frequency and severity of complications detected increases with the duration of the disease and the severity of metabolic disorders. In 5–10% of cases, patients with newly diagnosed type 2 diabetes already have signs of peripheral nerve damage. According to modern concepts, blockade plays a leading role in the formation of the pathological process in nerve fibers, endothelium and vascular wall in DPN hexosamine pathway of glucose utilization with accumulation of intermediate products of glucose metabolism, in particular glucose-6 phosphate and glyceraldehyde-3-phosphate. Increased concentration of intermediate products of metabolism triggers activation of protein kinase-C and formation of large amount of AGEs (Advanced Glycation end products), which leads to disruption of endothelium-dependent reactions and functions of nerve cell structures. Blockade of glucose metabolism is

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caused by activation of special polymerases, which occurs in response to destruction of mitochondrial DNA by superoxide. Oxidative stress, which is caused by formation of large amount of free radicals against the background of weakness of own antioxidant system (reduced content of antioxidant enzymes), is responsible for disruption of glucose metabolism in cytoplasm of cells. It is assumed that the correlation between the number of nerve fibers in the peripheral nerve and the wall thickness of the endoneural vessels is fundamental for the development of DPN in diabetes mellitus [2]. The toxic effect caused by the metabolic disorder has a direct effect on the nervous tissue. An additional aggravating factor in the suffering of peripheral nerves in diabetes mellitus is the damage to small vessels that provide blood supply to the nerve trunks. A common clinical syndrome of peripheral nervous system damage in diabetes and other somatic diseases is symmetrical distal sensory polyneuropathy (SDSP), which is characterized by predominant damage to the nerves of the lower extremities. With SDSP, an intense neuropathic pain syndrome is observed, which is associated with a high risk of developing diabetic foot. Neuropathic pain syndrome is manifested by hyperpathy - intense pain that persists after stimulation is stopped, hyperalgesia, and allodynia [6]. Neuropathic pain syndrome of varying severity occurs in 20-30% of patients 38 medical advice with SDSP, the frequency of its presence correlates with the severity of the disease [7].

Population studies have shown that varying degrees of peripheral nerve damage are found in 15–90% of patients. with diabetes. The frequency and PERIPHERAL DISEASES NS severity of complications increases with the duration of the disease and the severity of metabolic disorders, in 5-10% of cases in patients with newly diagnosed type 2 diabetes there are already signs of peripheral nerve damage.

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