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Spreading of Autonomic Neuropathy

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Abstract: This article explores the global prevalence of autonomic neuropathy, with a primary focus on its diabetic form, which is one of the most common and serious complications of diabetes mellitus. The study reviews data from various international sources, revealing significant variability in prevalence rates depending on patient populations, diagnostic criteria, and assessment methods. Particular attention is given to the influence of age, disease duration, and diabetes type on the development of autonomic dysfunction. The article also addresses non-diabetic forms of autonomic neuropathy, including amyloid neuropathy. Emphasis is placed on the importance of early diagnosis and a multidisciplinary treatment approach, especially considering the high mortality rate associated with cardiac autonomic neuropathy.

Keywords: Autonomic neuropathy, diabetic neuropathy, prevalence, diabetes mellitus, autonomic dysfunction, diagnosis, amyloidosis, cardiac neuropathy.

Introduction: Autonomic neuropathy is a common complication of various diseases, primarily diabetes mellitus. Analysis of available data shows significant variability in the prevalence of this pathology depending on the type of underlying disease, age of patients, duration of the disease and diagnostic methods. In diabetic autonomic neuropathy, the incidence rate among patients with type 1 diabetes mellitus reaches 54%, and in type 2 diabetes mellitus - 73%. Different diagnostic approaches give a wide range of prevalence rates from 7.7% to 90%, which indicates the difficulty of standardizing diagnostic criteria for this condition.

General characteristics of autonomic neuropathy. The autonomic (vegetative) nervous system regulates vital functions and maintains homeostasis. Diseases affecting the autonomic nervous system can affect both its central and peripheral parts. Clinical manifestations of autonomic neuropathy are very diverse and include cardiovascular, gastrointestinal, genitourinary, thermoregulatory, sudomotor and pupillomotor disorders [2]. Autonomic, or vegetative, disorders accompany most generalized, symmetrical neuropathies to varying degrees due to damage to unmyelinated or weakly myelinated nerve fibers. However, conditions with isolated or predominant damage to the autonomic nervous system are considered to be autonomic neuropathies proper. Such neuropathies include Guillain-Barré syndrome, diabetic, amyloid, or toxic neuropathies [2]. Modern research has made it possible to classify autonomic neuropathies according to various characteristics, including course (acute/subacute and chronic), etiology (hereditary, acquired) and prevalence (focal or generalized, predominantly sympathetic or parasympathetic) [2].

Prevalence of diabetic autonomic neuropathy. Diabetes mellitus occupies a leading position in the structure of causes of development of chronic autonomic neuropathies. The prevalence of autonomic disorders significantly depends on the type of diabetes mellitus and is 54% for type 1 and 73% for type 2[1][2].

Diabetic autonomic neuropathy (DAN) is one of the complications of diabetes mellitus, which negatively affects both survival and quality of life of patients. At the same time, DAN remains one of the rarely

diagnosed complications, despite its prevalence [3].

According to foreign studies, the overall prevalence of polyneuropathy is 66% in type 1 diabetes mellitus and 59% in type 2 diabetes mellitus (based on the results of a study of a population of patients with diabetes mellitus in Rochester, Minnesota) [3].

Variability in prevalence rates. The prevalence of diabetic autonomic neuropathy based on autonomic status testing varies widely, from 7.7% to 90% [3]. This wide range of values is due to differences in:

1. Studied patient groups

2. Forms of testing used by researchers

3. Criteria used to determine the presence of autonomic dysfunction [3].

For example, according to a study conducted in Oxford (England), the prevalence of autonomic neuropathy was 16.7% (the results were obtained by analyzing heart rate variability) [3].

A study using simple noninvasive tests (fall in systolic blood pressure and heart rate in response to standing) found that 47 of 110 children and adolescents with diabetes (approximately 42.7%) had cardiovascular abnormalities when performing one or more tests [3].

Factors Affecting the Prevalence of Autonomic Neuropathy. In a study of 506 insulin-treated diabetic patients (mean age 43 years, mean diabetes duration 15 years), 84 (16.6%) had autonomic dysfunction and 119 (23.5%) had peripheral neuropathy, with only 44 patients (8.7%) having both conditions simultaneously [4].

It is significant that the prevalence of both autonomic and peripheral neuropathy increased with the duration of diabetes. However, autonomic neuropathy was more common in individuals with early onset of diabetes (before 20 years - 18.2%, after 40 years - 11.1%), whereas the prevalence of peripheral neuropathy, on the contrary, increased with the age of onset of diabetes (before 20 years - 13.5%, after 40 years - 36.8%) [4]. It was also noted that the prevalence of autonomic neuropathy peaked in the 40-49 age group, while the incidence of peripheral neuropathy progressively increased with age. Twenty years after the diagnosis of diabetes mellitus, the prevalence of peripheral neuropathy exceeded the prevalence of autonomic neuropathy (40.2% versus 30.7%) [4].

Prognosis and mortality in autonomic neuropathy. The most unfavorable prognosis is typical for cardiac diabetic autonomic neuropathy. Mortality in this type of neuropathy in the five- to ten-year perspective is 27-56%[1][2]. This emphasizes the importance of timely diagnosis and treatment of this complication of diabetes mellitus.

Prevalence of non-diabetic forms of autonomic neuropathy. Autonomic neuropathy may also develop in other diseases, including amyloidosis. The estimated prevalence of transthyretin familial amyloid polyneuropathy (ATTR -PN) worldwide is approximately 1 in 1,000,000 people [6]. In Europe, the prevalence of ATTR -PN is somewhat higher and is at least 1 in 100,000 population [6]. These data indicate that amyloid autonomic neuropathy is much less common than diabetic neuropathy.

CONCLUSION

The prevalence of autonomic neuropathy varies considerably depending on the underlying disease, diagnostic methods, and the population studied. The most common cause of autonomic neuropathy is diabetes mellitus, with prevalence ranging from 54% to 73% depending on the type of diabetes. Prevalence rates vary significantly across studies (from 7.7% to 90%), which is due to the variability of diagnostic criteria and approaches. Autonomic neuropathy is more common in patients with early-onset diabetes, while peripheral neuropathy is more common in individuals with late-onset disease. Given the high prevalence and poor prognosis, especially in the cardiac form (mortality 27-56% within 5-10 years), diagnosis and treatment of autonomic neuropathy require a multidisciplinary approach and early initiation of rehabilitation measures.

REFERENCES

Azpiroz F., Malagelada S. (2015) Diabetic intestinal neuropathy: pathogenesis and diagnosis. Diabetologia. doi: 10.1007/s00125-015-3831-1

Intagliata N, Koch KL (2007). Gastroparesis in type 2 diabetes. Diabetes mellitus: prevalence, etiology, diagnosis, and treatment. Carr Gastroenterol Rep 9: 270–279.

Izbeki F, Rostozi A, Varkonyi T, Wittmann T (2012). Clinical studies. Presentation, diagnosis and therapy of gastrointestinal autonomic neuropathy.

Kempler P, Varkonyi T (eds) Neuropathies: A global clinical guideline. Zafir Press, Budapest, pp. 131–150

Kempler P, Ameranko G, Freeman R, et al. (2011) Gastrointestinal tract. autonomic neuropathy, erectile, urinary, and sudomotor dysfunction in patients with diabetes mellitus: clinical impact, assessment, diagnosis, and treatment. Diabetes Metab ResRev 27: 665–677

Trusov V.V., Danilova M.L. Evaluation of the therapeutic effectiveness of balneotherapy carried out for the purpose of correction of biliary insufficiency in patients with type 2 diabetes // International Journal of Applied and Fundamental Research. 2009. – No. 3. –