

Cardiovascular autonomic neuropathy

Cardiovascular autonomic neuropathy (CAN) is a complication associated with heart rhythm and vascular flow due to autonomic nerve damage. It is a serious complication of diabetes mellitus, yet it is often overlooked.

Autonomic neuropathy (AN)

Autonomic neuropathy (AN) is manifested by a group of symptoms that occur as a result of damage to the peripheral autonomic system. The peripheral autonomic system consists of autonomic nerves, which are the units that regulate the body's visceral functions (blood pressure, bowel motility, bladder emptying, body temperature regulation, and others). Neuropathy is damage or dysfunction of one or more nerves and manifests as numbness, tingling or pain in the affected area.

Causes of neuropathy :

- Trauma
- Chemotherapy
- Alcoholism
- Autoimmune diseases
- Chronic renal insufficiency
- Vitamin B deficiency
- Complications of diabetes mellitus

Cardiovascular autonomic neuropathy (CAN)

AN can affect any organ, most often it manifests first in the cardiovascular system. CAN is one of the specific complications of diabetes. Specific functional and structural changes of the myocardium are characteristic. Hyperglycemia, excess free fatty acids and insulin resistance affect cardiomyocytes.

Speeches:

- Abnormality of heart rate control
- Dysfunction of the left ventricle of the heart
- Resting and fixed tachycardia - fixed tachycardia with no response when the load changes
- Load intolerance
- Disturbances in diurnal fluctuations of blood pressure (insufficient decrease during the night hours)
- Orthostatic hypotension - a state of chronic arterial hypotension,
- Decreased secretion of catecholamines (hormones also produced in sympathetic adrenergic postganglionic neurons)
- Increased production of reactive radicals

Diagnostics:

- Subjective medical history (see *Table*)
- Objective clinical internal and neurological examination: 6-step muscle test according to Jand and Semmes-Weinstein monofilament, we examine anesthesia using a pin or needle
- Use of selected methods of clinical neuro-physiology - mainly electromyography (EMG) is used
- Quantitative examination of sensory functions
- Examination of individual autonomic functions
- Biopsy
- Biochemical examination CAN

Table : **Questionnaire on the presence of autonomic neuropathy**

<p><i>I. Cardiovascular system:</i></p> <ol style="list-style-type: none"> 1. Do you have palpitations? 2. Do you faint or feel dizzy when you stand up?
<p><i>II. Gastrointestinal System:</i></p> <ol style="list-style-type: none"> 1. Do you have a feeling of fullness after eating, difficulty swallowing, or hiccups? 2. Do you have difficulty with bowel movements - diarrhea or constipation? 3. Can you hold a stool?
<p><i>III. Urogenital system:</i></p> <ol style="list-style-type: none"> 1. Do you have problems with urinary retention? 2. Do you have other difficulties with urination? 3. Do you have problems in your intimate life (e.g. erectile dysfunction)?
<p><i>IV. Goat:</i></p> <ol style="list-style-type: none"> 1. Do you have bursts of sweat after eating or at night? 2. Do you sweat more noticeably on the upper body? 3. Don't you sweat on your lower legs? (Yes, I don't sweat.) 4. Do you tolerate heat and higher temperature fluctuations well?
<p><i>V. Do you not recognize hypoglycemia (a drop in blood sugar)? (Yeah, I don't recognize it.)</i></p>
<p>The evaluation is done individually. Any positive answer leads the doctor to verify the cause of the difficulty.</p>

Links

Related Articles

- Heart beat
- Peripheral autonomic system
- Hyperglycemia
- Nerves
- Diabetic neuropathy
- Tachycardia
- Complications of diabetes mellitus
- Orthostatic hypotension
- Disorders of glucose metabolism

Source

- Diabetic autonomic neuropathy
- Milan Kvapil; Barbora Pelechová; Pavlína Krollová; Šárka Malá Published in the magazine: Forum Diab 2018; 7(3): 149-152, Review paper Cardiac autonomic neuropathy as a serious complication of diabetes mellitus
- J. Opavský, Česk Slov Neurol N 2018; 81(6): 625-644 Mini-Monograph
- 1112 MD Milan Grofik, M.D. Vladimír Nosál, doc. MD Egon Kurča, PhD. , MD Pavol Kučera, PhD., NEUROLOGICAL MANIFESTATIONS OF DIABETES MELLITUS, Neurol. practice, 2005; year 6 (1): 28-33

Reference

1. Schumer MP, Joyner SA, Pfeifer MA. Cardiovascular autonomic neuropathy testing in patients with diabetes. Diabetes Spectr . 1998; 11: 227-223.
2. ↑ <http://solen.cz/pdfs/int/2012/01/04.pdf> (<http://solen.cz/pdfs/int/2012/01/04.pdf>)

Endokrinologie a metabolismus Kategorie:Vnitřní lékařství