

LETTER TO THE EDITOR / ПИСМО УРЕДНИКУ

## Vasovagal syncope and infection – A new target approach in diagnostics and treatment

Dear Editor,

I have read with great interest a paper by Radovanović et al. [1] published in your esteemed journal.

A few years ago at a meeting in Targu Mures, Romania, the most famous experts from the field of syncope discussed that even after 20 years of clinical practice its cause is still unknown. It was the first time that I, as one of the experts, opened a question of target approach based on cause. The most common and most provocative question about syncope is pacemaker implantation and its time. According to guidelines of the European Society of Cardiology (ESC) and other scientific institutions, the best responder group for this indication is the one with cardioinhibitory syncope, with a history of injuries and multiple faints during one year [2]. During an interactive ESC session on syncope in 2016 in Rome, a case with interesting audience voting results regarding pacemaker implantation was presented. The result of the voting was pointing to a major problem regarding making a good selection of those indications for pacemaker implantation. Misdiagnosed pacemaker implantation results with no symptom reduction and leads to lower satisfaction, poor health care, and a potential lawsuit. In most of the cases, pacemaker implantation has a psychological effect and provides a feeling of safety more than it reduces the syncope event number. The question is what triggers vagal activation, hypotension, and bradycardia with asystole presentation. It is in fact an autonomic dysfunction, which is present in many cases with parasympathetic predominance, as well in cases with sympathetic predominance, for example in postural tachycardia syndrome. In order to make the right diagnosis of neurocardiogenic syncope, it is necessary to provide the right equipment with continuous beat-to-beat monitoring and a head-up tilt table [3]. This equipment is highly sophisticated and requires a trained professional who has to be educated in the autonomic nervous system testing. Syncope units are made according to the need for autonomic nervous system testing [4]. However, if you try to count the number of syncope units in Europe, a disappointing number is reached, which is true even at a global level. Syncope units are usually added to cardiology, neurology or endocrinology departments.

Cardiologist mostly performs head-up tilt test and pacemaker implantation without the neurological part of autonomic nervous system testing, using a protocol with nitroglycerin application. Neurologists use neurological diagnostics methods using Westminster's protocol without stimulation. Endocrinologists are mostly performing tests for diabetic autonomic neuropathy. The main lack is an absence of cooperation between several scientific disciplines, particularly in the treatment phase. When all requirements are satisfied, we are back to the begging of the story – what causes the autonomic dysfunction? Is it necessary to involve another scientific discipline for cause detection and target therapy? The potential answer is an infection disease expert involvement to complete the evaluation of this very specific problem.

Neurocardiological laboratory at the Clinical Hospital Center is a unique laboratory in the world, which applies a multidisciplinary approach in evaluation, treatment, and virological testing, with more than 1,000 patients examined each year. The result is the detection of acute or chronic infection in these patients. The most frequently detected microorganisms so far are coxsackievirus, cytomegalovirus, Epstein–Barr virus, *Chlamydia pneumoniae*, *Mycoplasma pneumoniae*, *Toxoplasma gondii*, and lately *Borrelia burgdorferi* (Lyme disease).

Causal diagnostics provides target treatment using antioxidant therapy during a course of several months, antibiotics, and a sympathomimetic. Surprisingly good results have been achieved using the programmed placebo effect, a method developed in cooperation with physicists. The second important answer and a new approach in treatment is the fact that syncope or orthostatic hypotension has almost always been in the clinical picture of chronic fatigue syndrome or autoimmune diseases [5]. In many cases there was comorbidity of psoriasis, urticaria, anxiety, phobia, inflammatory bowel disease, or even cancer. The main question that remains unanswered is whether syncope is a disease or a symptom of an underlying disease.

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