Evaluation of the Efficiency and Safety of Combined Treatment with Impaza and Nitrates in CHD Patients with Erectile Dysfunction

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The safety of combined administration of ultralow doses of antigens to endothelial NO synthase (impaza) and nitrates for the treatment of erectile dysfunction in CHD patients was evaluated in an open non-comparative clinical trial. The efficiency and safety of impaza and the possibility of its administration to patients receiving nitrates were demonstrated.

Key Words: *coronary heart disease; erectile dysfunction; ultralow doses of antibodies to endothelial NO-synthase; nitrates*

The prevalence of erectile dysfunction (ED) in CHD patients is 44-75% [1,3]. So frequent combination of these disorders can be explained by endothelial dysfunction underlying both these states [6]. Endothelial dysfunction is characterized by imbalance between vasodilator and vasoconstrictor transmitters produced by endothelial cells or realizing their effects on their surface [4,5]. Reduced production of NO regulating the vascular tone is the major pathogenetic component in the development of endothelial dysfunction. In modern medicine, this problem is solved by the use of NO donors, nitrates. The effect of these drugs is based on vasodilation induced by NO, which decreases pre- and afterload, heart work, and myocardial oxygen demands.

Impaza containing ultralow doses of antibodies to endothelial NO synthase (mixture of homeopathic dilutions C12+C30+C200) is successfully used in the therapy of ED since 2001. The effect of impaza is related to restoration of adequate NO production in tissues and elevation of cGMP content in the cavernous bodies of the penis [2]. In view of high incidence of CHD and ED comorbidity, the possibility of simultaneous administration of impaza and nitrates is an important problem.

Here we evaluated the efficiency and safety of combined administration of impaza and nitrates in the therapy of ED in CHD patients.

MATERIALS AND METHODS

Our open non-comparative trial (period of observation of 12 weeks) included 30 CHD patients aging 49.20±0.88 years with effort angina functional class I (n=22; 73%) and II (n=8; 27%; Table 1) suffering from ED (International Index of Erectile Function, IIEF score 10-24). 1).

Before inclusion into the study, all patients time to time received short-acting nitrates, 1 patient received prolonged nitrates. Among antihypertensive preparations used by the patients, inhibitors of angiotensin-converting enzyme (perindopril, lysinopril, and enalapril) and Ca^{2+}-channel blockers (amlodipine and nifedipine) predominated.

The patients received impaza in a dose of 1 tablet every other day and took 1 more tablet 1 h before intercourse, if needed.

The efficiency of therapy was evaluated by the dynamics of IIEF parameters. The following parameters

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TABLE 1. Initial Characteristics of CHD Patients with ED (*M*±*m*)

Parameter	Value
Mean history of CHD, years	2.23±0.25
Mean number of attacks per week	3.57±0.46
Mean duration of the disease, years	6.20±0.78
Mean body mass index, kg/m^2	28.00±0.64
Mean HR, bpm	70.60±1.04
Mean systolic BP, mm Hg	139.33±2.45
Mean diastolic BP, mm Hg	87.67±0.95
Patients with essential hypertension, %	100
Age of ED manifestation, years	45.50±0.87
Duration of ED, years	3.8±0.3
Patients with organic character of ED, %	85
Patients with psychogenic and mixed character of ED, %	15

were also evaluated: dynamics of CHD symptoms (quantity of nitrates taken, frequency of heart attacks per day/week), blood pressure (BP), heart rhythm (ECH, Holter), exercise tolerance (treadmill test), and laboratory parameters of the blood and urine (safety control).

RESULTS

Impaza considerably increased the integral IIEF score by the 12th week of treatment: the mean "erectile function" score increased by 38.4% (p<0.05) and attained 26.13±0.43.

Analysis of functional parameters of the cardiovascular system revealed stable course of CHD, functional class I and II effort angina.

The number of anginal attack decreased, which reduced nitrate consumption. In 66.7% patients, the frequency of attacks decreased to 1-3 per week, in 33.3% patients nitrates were discontinued. Thus, the mean number of attacks per week by the end of impaza treatment was 1.20±0.22. Moreover, treadmill testing revealed increased exercise tolerance: oxygen capacity index increased by 23.4% (p<0.001).

Stabilization of BP at a level of 130/80 was noted by the 12th week of impaza treatment. The mean systolic and mean diastolic BP decreased by 6.3% (p<0.05) and 6.7% and attained 130.50±1.11 and 81.7±1.4 mm Hg, respectively. No cases of BP drop or a tendency to a decrease below the mean levels were observed. No sharp potentiation of the hypotensive effect of NO donors was noted.

The patients enrolled into the study well tolerated the therapy (Table 2). No undesirable events caused by the therapy were recorded.

TABLE 2. Laboratory Tests of the Blood in CHD Patients with ED (*M*±*m*)

Parameter	Initial	After 12 weeks
Erythrocytes, 10^{12}/liter	4.88±0.09	4.88±0.08
Hemoglobin, g/liter	133.57±1.41	133.67±1.17
Total leukocytes, 10^9/liter	6.55±0.08	6.40±0.07
Platelets, 10^9/liter	320.30±8.38	317.47±7.45
ESR, mm/h	6.63±0.61	4.03±0.31
Glucose, mmol/liter	4.90±0.11	4.89±0.10
Creatinine, μmol/liter	0.76±0.01	0.75±0.00
Cholesterol, mmol/liter	163.90±3.04	165.87±3.03
Triglycerides, mmol/liter	87.33±2.28	89.37±2.44

Thus, our clinical study proved high efficiency of impaza in the treatment of ED in CHD patients and its positive effect on the course of the main disease. An undoubted advantage of impaza is its high safety, which is confirmed by the absence of cases with sharp BP drops during combined administration of impaza with nitrates.

Impaza is characterized by an optimal combination of efficiency and safety and can be used as a first-line preparation for the treatment of ED in CHD patients.

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