

Sexual disorders in men suffering from hypertension and their possible correction

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The investigation of the effectiveness of the combined therapy with sildenafil, sildenafil and arginin, sildenafil, arginin and LNP therapy was carried out in 120 hypertensive patients with erectile dysfunction.

The patients were divided into several groups. Group I (25 patients) got therapy with inhibitors of phosphodiesterase of 5 type (sildenafil) on demand; Group II (25 patients) got sildenafil in a dose of 50 mg every other day; Group III (25 patients) – sildenafil in a dose of 50 mg every other day + arginin; Group IV (25 patients) – sildenafil + arginin + LNP therapy; Group V (20 patients) was a group of comparison. The final estimation of the effectiveness of complex therapy in a month showed good and perfect results in 96,0% of patients of Group IV and 84,0% of patients of Group III. Poorer results were revealed in patients of Group I and Group II. In Group V indexes didn't change but in 2 patients (10,0%) results worsened.

On the basis of carried out investigation it was established that arginin and LNP therapy improved treatment.

Key words: *erectile dysfunction, IIEF, sildenafil, arginin, LNP therapy.*

Erectile dysfunction (ED) is a typical complication of an arterial hypertension (AH) which among other more studied complications such as: micro- and macroangiopathy, retinopathy etc. often causes damage to patients' health and also initiates and keeps a depression. It was established that in 80% of cases it occurs due to various organic substances and 20% of cases constitute psychological factors. From all etiological and organic factors of sexual disorders 70% of cases constitute a vascular erectile dysfunction. Such percentage demands the search of prolonged, safe and effective treatment of ED with the following cardiopathology.

In hypertensive patients NO production is low, which is a vasodilator released from endothelium of vessel cavernous tissue in a sexual stimulation. In turn, NO causes an increase of cyclic guanosine monophosphate level of blood vessels' smooth muscles of penis. It causes blood flow and erection. The reverse effect is detumescence, which occurs as a result of cyclic guanosine monophosphate breakdown in the cavernous tissue under the influence of enzyme of phosphodiesterase of type 5 (PDE 5). That's why, sildenafil is used for the treatment of ED.

In a range of the controlled investigations the safety, good tolerance and high effectiveness of sildenafil use for more than 3700 cardiac patients aged 19-87 were proved. This medication was the first widely used in clinical practice.

Due to prognostic data of experts in the nearest 15 years a number of patients with ED will increase intensively. The spread of the given pathology requires the search of new methods of diagnostics and improvement of ED treatment. Some patients which got sildenafil monotherapy didn't notice positive results. Such patients undergo LNP therapy, therapy with intracavernous injections and surgery. Lack of efficacy, contraindications and side-effects of medicines which are in the disposal of an andrologist for ED treatment initiates the research of new pharmaceuticals and carrying out of the complex therapy schemes on

the basis of the well-known medications. The promising way is a simultaneous effect on various stages of etiology and pathogenesis of ED with the combined therapy. Positive effect of a simultaneous prescription of medications of various groups intensifies synergic effect of the common positive one and allows to reduce the dose of inhibitors PDE 5 and their side-effect (in patients with an accompanied cardiac pathology).

Aim of the research. The aim of the research is to investigate the effectiveness of combined therapy with sildenafil, arginin and LNP therapy in hypertensive patients with ED.

MATERIALS AND METHODS

The examination and complex therapy of 120 hypertensive patients with ED were carried out. The patients were divided into several groups such as: Group I (25 patients), which got therapy with inhibitors of phosphodiesterase of 5 type (sildenafil) on demand; Group II (25 patients) got sildenafil in a dose of 50 mg every other day; Group III (25 patients) – sildenafil in a dose of 50 mg every other day + arginin; Group IV (25 patients) – sildenafil + arginin + LNP therapy; Group V (20 patients) was a group of comparison.

To reveal ED in male with arterial hypertension and to estimate the effectiveness of the used therapy special questioner was used. International Index of Erectile Function – IIEF includes 15 questions. Patient's answer to every question was estimated in scores (from 1 to 5); the higher total number of scores the better sexual function of a male. The subunit of an erectile function included 6 questions, maximal total number of scores was 30, ED was diagnosed in less than 26 scores. The stage of ED sign was established depending on the total number of scores: 21–25 scores – the absence of sexual dysfunctions, 16–20 scores – mild form of ED, 11–15 scores – moderate ED and 5–10 scores – severe ED.

To improve the effectiveness of treatment and to provide prolonged therapy, patients of Group 3 and Group 4 were given arginin (an active substance arginine, a substrate for NO-synthase, an enzyme which catalyzes nitrogen oxide synthesis in endotheliocytes. The medication activates guanilatcyclase and increases the cyclic guanidinmonophosphate level (cGMF) in an endothelium of vessels, reduces the activity and adhesion of leukocytes and thrombocytes to the endothelium of vessels, inhibits of endothelin-1 synthesis, which is a potent vasoconstrictor and stimulator of proliferation and migration of smooth myocytes of a vascular wall. Patients of Group IV were given a conservative therapy with physiotherapeutic procedure – LNP therapy. In this therapy penis was placed in a transparent mini chamber and exhausting was created. In such conditions the inner blood pressure on the vessels' wall is higher than outer one on the created pressure (0, 2-0,4MPa) thus, blood flow to the cavernous tissue occurs. Additional nonfunctional arterial sources and the intensive enrichment of the cavernous tissue with oxygen are revealed. It causes the intensity of NO release. The intensity of cavernous tissue's blood flow blocks a venous flow, which is the main mechanism of the erection rise. Patients of all groups got an individual recommendation on keeping the healthy way of life (proper diet, preservation of day regimen and the regimen of an outdoor walking).

Patients aged 34–65 took part in the investigation got baseline

Index changes of IIEF due to questioning of the patients

IIEF indexes after a month of treatment	Group 1 (n=25)	Group 2 (n=25)	Group 3 (n=25)	Group 4 (n=25)	Control group (n=25)
Varied indexes $\geq 50\%$ from primary ones	-	10 (25,0%)	15 (60,0%)	19 (76,0%)	-
Good $\geq 25-30\%$	4 (16,0%)	12 (48,0%)	6 (24,0%)	5 (20,0%)	-
Satisfactory $\geq 10\%$	21 (84,0%)	3 (12,0%)	4 (16,0%)	1 (4,0%)	-
Bad $\leq 10\%$	-	-	-	-	2 (10,0%)

therapy. It was defined that their body weight was $78,3 \pm 5,2$ kg, an index of body weight was $25,6 \pm 2,3$ kg/m², arterial hypertension of type II. The signs of an endocrine and psychogenic ED were excluded. The effectiveness of carried out therapy was analyzed in a month of the given therapy. Safe effect of medications due to the absence of side effects during the course of treatment was estimated. The effectiveness of therapy was perfect, when indexes of erectile function increased more than 50%, good results were in 25–30% of cases, satisfactory ones in indexes' improvement to 10% and bad results were noticed in the decrease of indexes above 10%.

RESULTS OF INVESTIGATION AND DISCUSSION

All patients finished the investigation and their data were matched in the analyses of the investigation results. As for the complaints of treatment the impaired adequate erections, ejaculation disorder, orgasm disorder and libido decrease were noticed the most often.

In a month from the beginning of treatment the index of EF increased in Group 2, Group 3 and Group 4. But in Group 3 of patients got sildenafil+arginin and Group 4 with sildenafil, arginin and LNP therapy indexes were much better (figure). Thus, in patients of Group 4 perfect effect of therapy was noticed in 19 patients (76,0%), good – in 5 (20%), satisfactory – in 1 patient (4,0%). In patients of Group 3 perfect effect was in 15 patients (60,0%), good – in 6 (24,0%) and satisfactory in 4 patients

Сексуальні розлади у чоловіків, хворих на артеріальну гіпертензію, та можливості їх корекції Є.А. Литвинець, О.Р. Вінтонів

Проведено дослідження ефективності комбінованої терапії силденафілом; силденафілом та аргініном; силденафілом, аргініном та ЛВД-терапією у 120 хворих з еректильною дисфункцією на фоні артеріальної гіпертензії.

Хворі були поділені на групи: I група (25 пацієнтів) – отримували терапію інгібіторами фосфодіестерази 5-го типу (силденафіл) «на вимогу»; II група (25 пацієнтів) отримували силденафіл у дозі 50 мг через день; III група (25 пацієнтів) – силденафіл 50 мг через день + аргінін; IV група (25 пацієнтів) – силденафіл + аргінін+ЛВД-терапія; V група (20 пацієнтів) – група порівняння. Заключна оцінка ефективності комплексної терапії через 1 міс показала відмінний і добрий результати у 96,0% пацієнтів IV групи і у 84,0% пацієнтів III групи. Значно гірші показники виявлені в пацієнтів I та II групи. У контрольній групі показники еректильної функції не змінилися, а у 2 пацієнтів (10,0%) результати погіршилися. За результатами проведеного дослідження встановлено, що терапія з включенням у схему лікування аргініну та ЛВД-терапії дозволяє значно покращити результат лікування.

Ключові слова: еректильна дисфункція, ПЕФ, силденафіл, аргінін, ЛВД-терапія.

(16,0%). The final estimation of the effectiveness of complex therapy showed perfect and good results in 96,0% of patients of Group 4 and 84, 0% in patients of Group 3. Worse results were revealed in patients of Group 1 i.e. satisfactory result in 21 patient (84,0%), perfect result in 10 patients of Group 2 (25,0%) and in 12 patients (48,0%) satisfactory result were noticed. In Group 5 (a control group) the indexes of erectile function were not changed. 2 patients (10,0%) had bad results. During the course of treatment side effects were not revealed in four groups of patients.

Thus, the obtained data show much effect of complex treatment of male with erectile dysfunction, which suffer from arterial hypertension, including arginin and LNP therapy. With LNP therapy the treatment effect of arterial erectile dysfunction is notably improved. The effectiveness of this treatment scheme shows anti-hypoxic and antioxidant action of arginin. Thus, the role of NO in a genesis of ED in hypertensive patients takes an important part. LNP therapy contributes to the defining of new non-functional sources of arteries, and intensive enrichment of cavernous tissue with oxygen takes place and it contributes to NO release.

CONCLUSIONS

The use of arginin and LNP therapy in addition to sildenafil in hypertensive patients with ED allows to improve the effectiveness of treatment and such therapy may be recommended for the wide use.

Сексуальные расстройства у мужчин, больных артериальной гипертензией, и возможности их коррекции Е.А. Литвинец, О.Р. Винтонив

Проведено исследование эффективности комбинированной терапии силденафилом; силденафилом и аргинином; силденафилом, аргинином и ЛОД-терапией у 120 больных с эректильной дисфункцией на фоне артериальной гипертензии. Больные были разделены на группы: I группа (25 пациентов) – получали терапию ингибиторами фосфодиэстеразы 5-го типа (силденафил) «по требованию»; II группа (25 пациентов) – получали силденафил в дозе 50 мг через день; III группа (25 пациентов) – силденафил 50 мг через день + аргинин; IV группа (25 пациентов) – силденафил + аргинин +ЛОД-терапия; V группа (20 пациентов) – группа сравнения. Заключительная оценка эффективности комплексной терапии через 1 мес показала отличный и хороший результаты у 96,0% пациентов IV группы и у 84,0% пациентов III группы. Значительно худшие показатели выявлены у пациентов I и II группы. В контрольной группе показатели эректильной функции не изменились, а у 2 пациентов (10,0%) результаты ухудшились. По результатам проведенного исследования установлено, что терапия с включением в схему лечения аргинина и ЛОД-терапии позволяет значительно улучшить результат лечения.

Ключевые слова: эректильная дисфункция, ПЕФ, силденафил, аргинин, ЛОД-терапия.

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Статья поступила в редакцию 25.05.2015

Н О В О С Т И М Е Д И Ц И Н Ы

УЧЕНЫЕ, ВОЗМОЖНО, НАШЛИ ПРИЧИНУ
АУТОИММУННЫХ ЗАБОЛЕВАНИЙ

Группа исследователей нашла энзим, который вполне подходит на роль главного виновника развития аутоиммунных заболеваний. Активация энзима выглядит для иммунной системы как сигнал тревоги.

И данный процесс приводил к развитию двух смертельных аутоиммунных недугов у мышей.

При этом торможение активности данного энзима спасало животных. Все это говорит о том, что подавление энзима cGAS может быть эффективной

терапией аутоиммунных заболеваний вроде синдрома Айкарди-Гутьерье и системной красной волчанки, связанных единым воспалительным путем.

При аутоиммунном расстройстве иммунитет обращается против тела хозяина вместо того, чтобы защищать его. Например, для синдрома Айкарди-Гутьерье и системной красной волчанки нет лекарств. Врачи могут лишь сдерживать симптомы. Однако сделанное открытие меняет все.

Есть надежда на то, что cGAS будет подавляться низкомолекулярными препаратами. Кстати, ученые также исследовали грызунов, генетически измененных. У животных не было энзима, ДНКазы II. В результате животные теряли способность разлагать лизосомальную ДНК. Это приводило к развитию смертельных аутоиммунных заболеваний. Но подавление активности cGAS спасало животных.

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