

Особливості перебігу артеріальної гіпертензії у пацієнтів, що перебували в Україні від початку

широкомасштабного вторгнення

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Мета – оцінити вплив різних зовнішніх чинників та стресу внаслідок повномасштабного військового вторгнення в Україну на добовий профіль артеріального тиску (АТ) у пацієнтів з артеріальною гіпертензією.

Матеріали та методи. Здійснено ретроспективний аналіз пацієнтів, яким проводили добове моніторування АТ (ДМАТ) за останні 5 років. Період спостереження умовно розділили на кілька часових інтервалів: спостереження під час війни – період з 24 лютого 2022 р. до моменту відбору даних 01.07.2022 (1-ша група); період стресу та перенапруження внаслідок анонсованих бойових дій – від моменту попередження від різних організацій про можливий початок повномасштабного військового вторгнення з 3 грудня 2021 р. до початку бойових дій 24 лютого 2022 р.

(2-га група); період психоемоційного перенапруження через пандемію коронавірусної інфекції та локдауну – з березня 2020 р. до жовтня 2021 р. (3-тя група); відносно спокійний період – із січня до грудня 2018 р. (4-та група, контрольна). У кожену групу методом випадкових чисел було відібрано по 20 пацієнтів. Усім пацієнтам було проведено ДМАТ за допомогою приладу Watch BP 03 (Microlife AG, Швейцарія).

Результати. Групи були зіставні за віком, співвідношенням статей та середньодобовими параметрами АТ і частоти скорочень серця (ЧСС). Встановлено, що в 1-й групі був статистично значуще менший відсоток зниження систолічного (САТ) і діастолічного (ДАТ) АТ уночі порівняно з усіма іншими групами ((7,6±1,3) % для САТ і (10,2±1,4) % для ДАТ). Стандартне відхилення САТ і ДАТ було статистично значуще вищим у 2-й групі (відповідно (19,8±1,1) і (14,2±0,7) мм рт. ст.) порівняно з 1-ю групою (відповідно (16,0±0,9) і (11,7±0,6) мм рт. ст.) та 3-ю (відповідно (16,2±0,7) і (11,8±0,7) мм рт. ст.). Найбільшу частку пацієнтів з профілем АТ non-dipper для САТ і ДАТ спостерігали в 1-й групі (60 і 45 % відповідно).

Висновки. Під час війни в пацієнтів з артеріальною гіпертензією зниження САТ і ДАТ уночі виявилось статистично значуще нижчим, ніж в інші досліджувані періоди. Також у цей період відзнача-

ли більшу кількість пацієнтів із профілем АТ non-dipper.

Investigation of modified oculocardiac probe influence on functional state of cardio-vascular system and typological changes in cardiohemodynamic parameters in healthy young-aged female subjects

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The goal of the study: to investigate typological changes in blood pressure parameters in the brachial artery during dosed compressive influence on the eyeballs in practically healthy young-aged female subjects and their possible diagnostic and prognostic significance.

Material and methods. 120 practically healthy young female volunteers were examined - 18-20 years old (the average age was (19,3 ± 0,71 years). Blood pressure (BP) was registered using a routine tonometer according to the generally accepted M.S. Korotkov's method: in the initial state, under the conditions of discretely increasing compressive influence on the eyeballs value of 10, 20, 30 mm Hg. For such compressive test we used our patented "Device for dosed compressive influence on the eyeballs" and "Method of reproduction of the oculocardiac reflex". On the basis of the obtained data of systolic (SBP) and diastolic (DBP) blood pressure, through arithmetic operations, pulse pressure (PP) and mean dynamic pressure (MBP) were calculated. Statistical analysis of the obtained data was performed by methods of parametric and non-parametric statistics on a personal electronic computer using Microsoft Excel software and STATISTICA Version 6.0.

Results. 3 main types of the response of cardiovascular system under the compressive test on the eyeballs were determined. The first type – hypertensive (n=30, 25 % of the total number of examined subjects) was characterized by a significant (P<0,05) increase in SBP, DBP, PBP and MBP. The second, hypotonic type of the response (56 subjects, 46,7 %) was characterized by a significant (P<0,05) SBP, DBP, PBP and MBP levels decreasing. In subjects with the third, dystonic, type of response (n=34, 28,3 % of the total number of subjects), significant multidirectional changes in BP parameters (SBP, DBP, PBP and MBP) were detected in a non-linear dependence from the value of the compressive influence on the eyeballs.

Blood pressure parameters detection immediately and 3 and 5 minutes after decompression of air in a

compression device made it possible to determine the subtype of the mobility of nerve centers as a sign that complements the main type system reaction. If BP parameters returned to the background levels 3 minutes after the exposure nivelation, the subtype of normal mobility was diagnosed. In the other case, when BP parameters returned to the baseline level after 5 minutes and later after decompression, an inert subtype of mobility was diagnosed. The subtype of normal motility was diagnosed in 53,3 % (n=16) of subjects with the main hypertonic response type, 53,6 % (n=30) of the subjects with the main hypotonic response and 38,2 % (n=13) with the main dystonic response type of response of the cardiovascular system. The inert subtype of the motility of the cardiovascular system was found in 46,7 % (n=14) of people with a hypertensive main type of response, in 50,9 % (n=26) of people with a hypotonic main type of response and 61,8 % (n=21) – with dystonic.

Conclusions. The resulting typological changes in blood pressure parameters changes under the conditions of the compressive influence on the eyeballs we can revealed a tendency to hypertension, hypotension, dystonic states and such types of cardiovascular system reactions, possibly, can be used for prediction of the development of arterial hypertension in persons with a hypertensive type of cardiovascular system response. The risk of arterial hypertension may be highest in persons with a hypertensive inert type of cardiovascular system reaction to the compressive influence on the eyeballs. Additional studies are being conducted to confirm this assumption.

Study of the influence of the effects of antihypertensive therapy on the functional state of the BP regulation system in patients with essential hypertension stage II and a normal body mass index

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The data of the multiple modern multicenter studies convincingly demonstrates that the pathogenesis of essential hypertension includes a great number of pathophysiological mechanisms, therefore, for the adequate treatment of arterial hypertension in most patients, the combined use of antihypertensive drugs is appropriate. To monitor the effectiveness of antihypertensive therapy, a wide range of diagnostic procedures are used - from general clinical tests, routine blood pressure (BP) measurement, to echocardiographic research etc. But these methods do not provide detection and evaluation

of the individual reactivity of the blood pressure regulation system at rest in response to changes in the regulation constant. Determining the functional state of the blood pressure regulation system before and after of antihypertensive therapy will allow to establish the adequacy of antihypertensive therapy not only based on the obtained blood pressure parameters from a one-time measurement of blood pressure or daily monitoring, but also on the basis of the revealing of the tendency to react according to the hypertensive type with drugs.

The goal of the present study was to investigate the effects of combination of angiotensin-converting enzyme (ACE) inhibitors and a selective imidazoline receptor agonist on the functional state of the blood pressure regulation system in male patients with essential hypertension (EH) stage II with a normal body mass index.

Material and methods. 120 male patients with a normal body mass index with stage II essential hypertension with mild and moderate hypertension, aged 45-57 years (average age was $51 \pm 5,9$ years), who did not receive any medication during the 3 months prior to inclusion in the study, were examined. As for antihypertensive therapy, all subjects were prescribed the ACE inhibitor Perindopril 5 mg (Prestarium, SERVIER, France) and the imidazoline receptor agonist Moxonidine 0,3 mg (Moxogamma, Woerwag Pharma, Germany). Before the initiation of antihypertensive therapy and at the end of the 12th week period of antihypertensive therapy, systolic blood pressure (SBP) and diastolic blood pressure (DBP) were determined in the initial state and under conditions of compressive influence on the mechanoreceptor structures of the abdominal cavity organs (MRSACO) with a value of 10; 20; 40; 60; 80; 100 mm Hg, immediately and 3 and 5 minutes after the end of compressive influence. Pulse arterial pressure (PBP) and mean dynamic arterial pressure (MDP) were determined according to well-known formulas. Statistical analysis of the obtained data was performed by methods of parametric and non-parametric statistics on a personal electronic computer using Microsoft Excel software and STATISTICA Version 6.0.

Results. Before the start of treatment, one, main – hypertensive, type of response of the blood pressure regulation system was identified, which was characterized by a significant ($P < 0,05$) increase in SBP, DBP, PBT, and MDP during compressive irritation of the MRSACO. After 12 weeks, on the background of antihypertensive therapy, target blood pressure levels were achieved in all (100 %) patients. At the same time, 2 main types of response of the blood pressure regulation system to compressive irritation of the compressive influence on the mechanoreceptor structures of the abdominal cavity organs were identified - normotonic and hypotonic. The normotonic type of response (48 examined (40 %) was characterized by the absence of significant ($P > 0,05$)