The Influence of Adverse Climate Regions on The Complication of Hypertension Disease

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ABSTRACT

170 hypertensive patients living in regions with adverse climate were examined. All patients underwent subjective, objective, clinical-instrumental and laboratory tests. Changes in arterial blood pressure in patients with different air temperature and humidity in all seasons of the year, their complications and effectiveness of preventive measures were studied.

Keywords: Hypertension Disease, Arterial Hypertension, Meterological Factors.

INTRODUCTION According to the World Health Organization (WHO), "more than 1 billion people on earth suffer from hypertension, and 7.5 million per year suffer from complications of the disease." death status is recorded. This is 12.8% of all deaths." (Maslennikova G.Ya., Oganov R.G. Kardiovaskulyarnaya terapiya i profilikatika.2018; (17) №1 p.4).

For the first time, the European recommendations for the diagnosis and treatment of hypertension mentioned the importance of seasonal changes in blood pressure, and it was noted that this condition is often associated with climate change. This leads to deepening of pathogenetic mechanisms of many diseases of the cardiovascular system, including hypertension, in the dry and hot climate of Uzbekistan. Dry and hot climatic conditions naturally lead to a deterioration of blood rheology, an increase in blood viscosity and an increase in the aggregation of shaped elements. This increases the risk of micro- and macrorheological disorders and the formation of aggregates and thromboembolism.

Study objective: To study the effect of unfavorable climate on the development and complications of hypertension and to study the effectiveness and different aspects of its prevention procedures.

MATERIALS AND METHODS. In 2022-2023, in order to solve the scientific goals and tasks envisaged in our research work, examination and analysis of 170 patients who were admitted and treated with the diagnosis of hypertension in the Bukhara branch of the Republican Emergency Medical Research Center, emergency cardiotherapy departments, Peshko District Medical Association and Olot District Medical Association results are presented. Group I (living in Olot district) (Basic group BG) consists of 60 patients with a diagnosis of

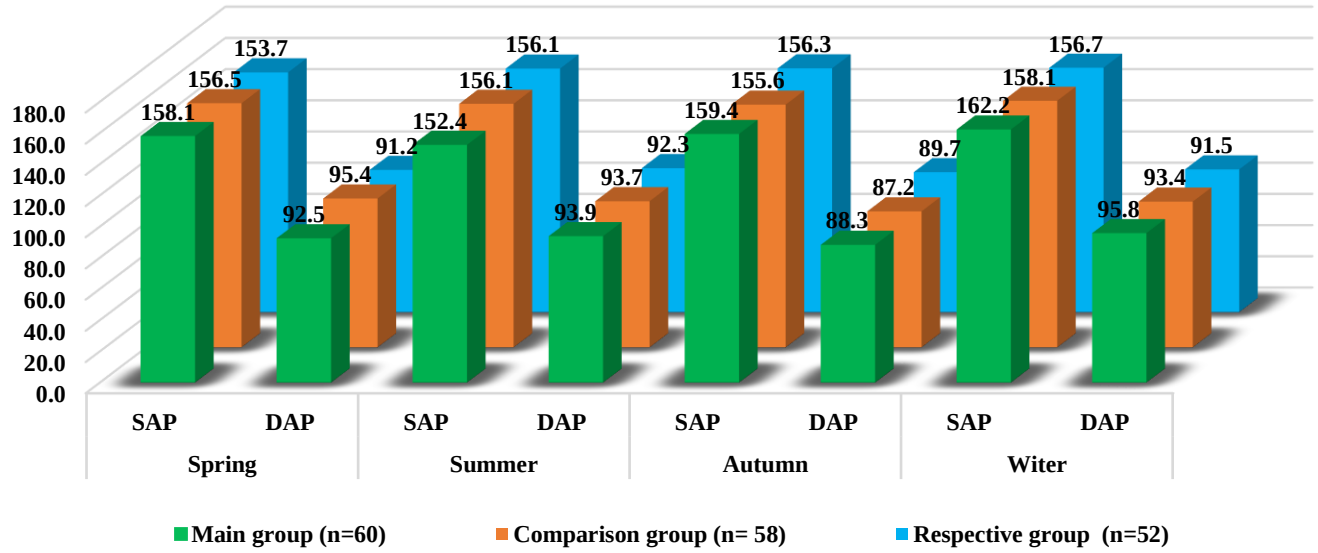
hypertension from Peshko and Olot districts, the majority of whose territory is in the desert zone. The average age is 57, the ratio of men to women is 1:1.3. 0±6.4, group II (living in Peshko district) 58 people (comparative CG) diagnosed with hypertension in the anamnesis and examinations, gender ratio 1:2.5 with the predominance of women and men, average age 61.2±6.9, and group III relatively moderate It consisted of 52 patients (respective RG) with a confirmed diagnosis of hypertension living in the city of Bukhara.

Result and discussion. All three groups of patients were under the dispensary's supervision with the diagnosis of complicated hypertension in their region, and the pathological changes of arterial blood pressure were studied in the patients who were receiving standard medical treatments at certain times of the season with different air temperature and humidity in different seasons of the year. Complications of the disease were studied and unique comprehensive preventive methodological measures were recommended. Diet, quality of life of patients, indicators of disease complications were dynamically analyzed at the beginning and at the end of the study, in the main and comparison groups where comprehensive preventive methodological measures were recommended, and in comparison groups where complex preventive methodological measures were not recommended. The condition of the patients was assessed using the NIHSS scales at the beginning of the study by studying changes in arterial blood pressure for 10 days in each season of the year.

In subjective examinations, complaints were reported by 26.25±4.92% in BG, 11.43±3.8% in CG, headache in AG 90±3.35%, CG 87.14±4.0%, dizziness in BG 87, 5±3.7 , CG 90±3.59%, nausea AG 23.75±4.76, CG 22.86±5.02%, vomiting BG 11.25±3.53%, CG 7.14 ±3.08% and weakness was observed in BG 88.75±3.53%, CG 88.57±3.8% cases. It can be observed that the general symptoms are expressed more deeply in the main group than in the comparison group.

All patients in the research groups underwent a thorough objective examination, and during the study, regular dynamic monitoring and somatic parameters were recorded. Patients with acute organ failure were not included in the study. During the study, when there were sharp changes in the measurements of hemodynamic and other somatic indicators, the patient was placed in a calm state, vital signs were normalized, and the study was continued after 24 hours.

In all three groups, all patients had hypertension, and symptomatic arterial hypertension was not detected.



1-figure.
Hemodynamic parameters of the study group patients during the year

Vital signs: number of breaths in 1 minute in spring days BG 18.3±0.2, CG 18.4±0.2, (p<0.05). In 1-2 days, BG 83.3±0.9, RG 84.2±0.9 pulses per minute, (p<0.05), in summer days BG 78.7±0.7, RG 79.2±0 It was .6 (p<0.05). In spring days, SAP, BG - 158.1±3.0, RG-156.5±1.8, mm mercury column and RG 153.7±0.7, and DAP AG-92.5±0.9 . ,2 and RG ± 156.0±1.0 mm Hg, DAP was BG 93.9±0.9, CG 93.7 and RG 92.3± 0.8 (p<0.05) . In autumn days, SAP BG-159.4±0.7, RG- 156.3±1.1 CG 155.6±1.2 and RG 156.3±1.1 mm Hg (p<0.05) , DAP AG-8.3±0.7, TG – 87.2±0.6, CG 89.7, mm.mercury column (p<0.05). In winter, SAP AG-162.2±0.7, RG-156.7±1.1 CG 158.1±1.2 mm mercury column (p<0.05), DAP AG- 95.8±0 ,7, RG- 91.5±0.6, CG-93.4±0.6 mm mercury column (p<0.05).

In order to determine the total cholesterol content in the blood, the deposit taken from the cubital vein of an empty stomach after 12 hours of fasting was analyzed using the "CYAN Start" automatic analyzer using an enzymatic colorimetric method. Triglycerides were also determined enzymatically in an automatic analyzer. The amount of LPL XS was determined based on the Friedwald formula (LPL=TX-HLP-TG/2.2 mmol/l). Total cholesterol in the blood was 5.0 mmol/l and more hypercholesterolemia, and triglyceride levels of 1.7 mmol/l or more were considered hypertriglyceridemia.

Table-1.
The amount of lipoproteins in the study groups.

indicator	In the spring	In the summer	In the autumn	In the winter
Total cholesterol	5,6±0.7	5,3±0,6	5,1 ± 0,5	5,2 ±0,6
LDL	1,2±0.3	1,2±0,2	1,2 ±0.3	1,1 ±0,2
HDL	3,2±0.7	3,2±0,6	3,1 ±0.7	3,0 ± 0,5
TG	2,1±0.5	2,0±0,4	2,1± 0.4	2,0± 0,3

In clinical practice, the diagnosis of lipid metabolism disorders is based on the assessment of the state of the lipid spectrum, according to which the amount of total cholesterol, triglycerides, LPL and HLP is determined. In most patients with arterial hypertension, dyslipidemia is manifested in the form of an increase in the amount of very low-density lipoprotein cholesterol (VLDL) and a decrease in the amount of high-density lipoprotein cholesterol. In most cases, low-density lipoprotein (LDL) cholesterol levels were either normal or slightly increased.

Table 2.
Indicators revealed in MRI and MSCT examinations.

Indicator	Main group (n=60)		ɔmparison group (n= 58)		Respective group (n=52)	
	n	M±m	n	M±m	n	M±m
MSCT	54	91.25%	53	88.60%	52	100%
MRI	6	8.75%	3	11.40%	0	0
Subatrophy	58	72.5±4.99%	33	58.6±5.9%	13	25 ± 6.8 %
Atrophy	12	15±3.99%	4	11.4±3.8%	3	5 ± 3.4 %
Encephalopathy _	56	95±2.4%	54	90±3.8%	45	87.5 ± 5.2%

Brain subatrophy BG 72.5±4.99%, CG 58.6±5.9% and RG 25±6.85% (p<0.001), atrophy BG 1.15±3.99%, CG and RG 5±3.45%, 11.4±3.8%, also 5±3.45% (p<0.001), vascular encephalopathy BG 95±2.44%, CG(63\70), 90±3 .8% and RG 87.5±5.23% (p<0.001), determined in cases.

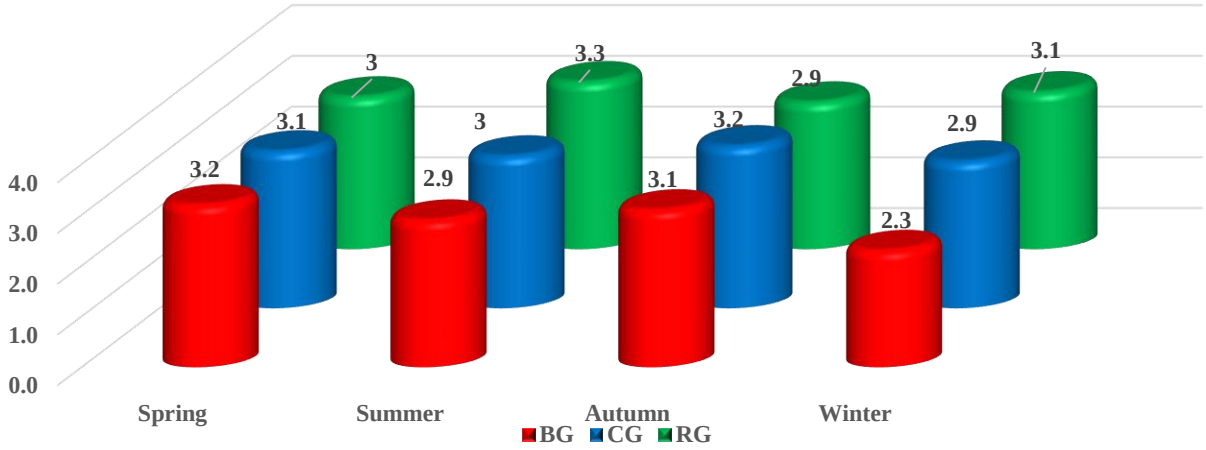


figure.-2
Dynamics of NIHSS scale indicators.

The average score on the NIHSS scale in the spring days of the study was 3.2±0.36 BG in the spring days, (p<0.001) 2.9±0.29 in the summer days of the study, 3.1±0.23 in the autumn days and 2.3 in the winter days. CG is ±0.22, TG is 3.0±0.4 in spring days, (p<0.001) 3.3±0.29 in summer days of the study, 2.9±0.2 in autumn days and 3 in winter days. was 1±0.3, CG was 3.1±0.4 in spring days, (p<0.001) 3.0±0.29 in summer days of the study, 3.2±0.2 in autumn days and 2 in winter days. It was 9±0.2. Based on the NIHSS scale indicators, positive changes were observed in the initial indicators of BG and RG, recovery in BG patients was less observed than in CG, and it was found that RG improved the quality of life relatively little.

Conclusions.

1. Changes in the lipid spectrum of blood are one of the influencing factors in the course of hypertension, and it was studied that the amount of ZLPP and cholesterol in the lipid spectrum increases relatively in summer and autumn, and the amount of ZYuLP and TG increases in winter and spring.
2. During the dynamic analysis of arterial blood pressure depending on air temperature and humidity in different seasons of the year, it was observed that arterial blood pressure is relatively high in winter, and complications increase due to deterioration of blood rheology in summer.
3. In regions with unfavorable climate, hypertension is relatively severe and the frequency of complications is observed, and it was found that the complex of non-medicinal recommendations suitable for the seasons of the year against the background of standard therapy can relatively reduce the level and complications of arterial hypertension.

References

1. Kakorin S.V., Tulyakova E.V., Voronkova K.V., Mkrtumyan A.M. “Acute

cerebrovascular accident in patients with type 2 diabetes mellitus," // Diabetes mellitus. –2013;(1): – b.63-70.
2. Karimov Sh.I., Rakhimbaeva G.S. Screening and diagnosis of the asymptomatic stage of chronic cerebral vascular insufficiency. // Information letter. 2010, b. - 2-3.
3. Ismailov S.I., Berdykulova D.M. Late complications of diabetes mellitus in people living in the Tashkent region of the Republic of Ubekistan, // International Endocrinological Journal, - No. 8(48), - 2012, - b.27-31.
4. Gudkova V.V., Usanova E.V., Stakhovskaya L.V. Diabetes mellitus and stroke: from pathophysiological mechanisms of damage to reasonable treatment, // Diabetes mellitus and stroke, - Medical Affairs, - No. 4, - 2013, - b.83-89.
5. Decree of the President of the Republic of Uzbekistan On approval of the National Program for Improving Endocrinological Care to the Population of the Republic of Uzbekistan for 2019 - 2021 ID-2361 // PC - 4295 - April 19, 2019 pp. 1-2.
6. Рузиев, Ф. Г., & Пулатов, С. С. (2020). Совершенство реабилитации больных после инсульта. In Наука и инновации-современные концепции (pp. 90-102).
7. Roziev F., Khodjaeva N. Cardiovascular system diseases in ischemic strokes BGainst the background of diabetes mellitus //Journal "Meditsina i innovatsii". – 2022. – no. 3. - S. 41-49.
8. Giyosovich R.F., Sayfullaevich P.S. The score of significant lechebnyx function and early rehabilitation in ischemic stroke and diabetes //British Medical Journal. - 2022. - T. 2. – no. 1.
9. Nyo Nyo Tun, Ganesan Arunagirinathan, Sunil K Munshi, Joseph M Pappachan Diabetes mellitus and stroke: A clinical update,// World J Diabetes 2017 June 15; 8(6): P. 235-248.
10. Rakhmatova Dilbar Ismatilloyevna, Narzilloeva Sitora Jakhongirovna The effectiveness of neuroprotective therapy in ischemic stroke // Europen journal of modern medicine and practice Vol.2 №1, 2022, P. 17-21