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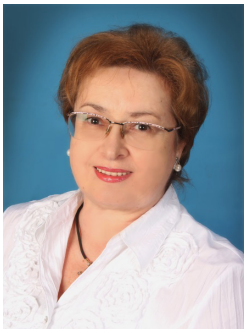

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Comparative Study of Methods of Differential Diagnosis of Essential Resistant and Pseudoresistant Arterial Hypertension in the Practice of Doctor of General Practice

Introduction. Arterial hypertension is the most common risk factor of cardio-vascular complications, while most objectively controlled by physician [3]. According to different studies, the effective control of blood pressure level in the population of patients with elevated blood pressure is not achieved [4]. It should be recognized that in majority of patients with hypertension, the prescribed treatment is ineffective. Clearly, this situation is the cause for concern and requires the measures for the improvement.

The prevalence of arterial hypertension in Ukraine reaches 35.0 % among the adult population [1]. The frequency of cases of resistant hypertension in the population of patients with hypertension varies from 5.0 to 18.0 % [7], however, there is no single view of its true prevalence. The number of these patients varies considerably depending on the place of the study [6]. Resistant hypertension occurs in 5.0-10.0 % of patients with hypertension in primary care practice, and in 25.0-30.0 % of hospitalized patients with hypertension [5]. However, the true prevalence of resistant hypertension is difficult to quantify because many patients actually suffer from pseudoresistant hypertension, the main reasons of which are the lack of adherence to treatment and ineffective antihypertensive therapy (the choice of ineffective drugs, their insufficient number, the use of them in small doses etc.) [9]. In the structure of resistant arterial hypertension, pseudoresistant is observed in 90.0-95.0 % of cases [8].

Existing general guidelines for the treatment of arterial hypertension do not provide doctors with a clear plan of selecting antihypertensive drugs and individualization of therapy in each particular case [1,7]. At the same time, in patients with pseudoresistant arterial hypertension, antihypertensive drugs effectively control the blood pressure, compared to patients with the resistant arterial hypertension [6]. In this regard, it is relevant to work out the methods of differential diagnosis of essential resistant and pseudoresistant arterial hypertension in the practice of doctor of general practice, which will accelerate the achievement of effective blood pressure control in this category of patients.

The aim of the study. To compare the various methods of differential diagnosis ofessential resistant and pseudoresistant arterial hypertension in the practice of doctor of general practice.

Materials and methods. After obtaining the written consent for the comprehensive survey in accordance with the principles of the Helsinki Declaration of Human Rights, the Council of Europe Convention on Human Rights and Biomedicine, relevant laws of Ukraine and international acts, in a randomized way with preliminary stratification by the presence of arterial hypertension (Order of the Ministry of Health of Ukraine N 436 dated July 03, 2006 "On Approval of Medical Treatment Protocols on the Specialty "Cardiology"), 317 patients were involved in the study (157 (49.5 %) women and 160 (50.5 %) men, aged 45 to 74 years (average age 55.2 ± 9.4 years), who were treated in 2014-2017 in the Center of Reconstructive and Restorative Medicine (University Clinic) of the Odessa National Medical University, Department of General Practice-Family Medicine.

After complex clinical-laboratory and instrumental examination of patients before the start of treatment, they were stratified by the presence of symptomatic arterial hypertension and uncontrolled essential arterial hypertension when taking three antihypertensive drugs, one of which is a diuretic. In all the patients, at first, the differential diagnosis between essential hypertension and symptomatic hypertension in accordance with the recommendations of the European and Ukrainian Cardiology Associations [1,7] was conducted. There were detected 120 patients were detected with uncontrolled essential arterial hypertension, when taking three antihypertensive drugs, one of which is a diuretic, in stable therapeutic doses for at least 30

days (50 (41.7 %) women and 70 (58.3 %) men, middle average age 54.9 ± 8.7 years), which were randomly assigned to two groups, which were approximately identical in clinical-functional and demographic parameters.

The main group included 60 patients (26 (43.3 %) women and 34 (56.7 %) men, average age 54.6 ± 9.2 years), in which conducted a differential diagnosis of uncontrolled essential arterial hypertension in order to identify the patients with resistant and pseudoresistant arterial hypertension using the diagnostic method suggested by us. This method consisted of measuring the level of office blood pressure and electrocardiogram registration before and 3 hours after taking of the three previously prescribed antihypertensive drugs in maximum single doses, including diuretics without changing the dosage. The decrease of systolic blood pressure in comparison with its baseline by more than 5.0 % and/or improved electrocardiogram repolarization processes (an increase in T wave amplitude in V5 or V6 leads by more than 0.5 mm and/or a decrease in depression of the ST segment), allowed us to diagnose the pseudoresistant arterial hypertension, and the absence of such changes - resistant arterial hypertension.

The comparison group consisted of 60 patients (24 (40.0 %) women and 36 (60.0 %) men, average age 55.4 ± 8.5 years) for which the differential diagnosis of uncontrolled essential arterial hypertension in order to identify the patients with resistant and pseudoresistant arterial hypertension using the traditional method, namely, in accordance with national recommendations, by empirically increasing the dose of three previously assigned antihypertensive drugs to the maximum tolerated, with an assessment of the effectiveness of such treatment (measuring the parameters of office blood pressure): on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days was conducted. At each re-visit (on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days), the indexes of office blood pressure were evaluated and in those patients in which three antihypertensive drugs at the maximum tolerated dosages effectively lowered the arterial pressure to target indicators, we diagnosed the pseudoresistant arterial hypertension. In those patients, in whom at the time of the re-visit, three antihypertensive drugs at the maximum tolerated dose did not effectively reduce blood pressure, we continued treatment, increasing the doses. In those patients who failed to correct blood pressure for 28 ± 3 days effectively, we diagnosed resistant arterial hypertension.

The study consisted of three stages.

At the first stage, the frequency of resistant and pseudoresistant arterial hypertension in the main group (using the method proposed by us) was determined. Patients with detected pseudoresistant arterial hypertension by our acute pharmacological test continued to participate in the study and to take three previously assigned antihypertensive drugs in maximal tolerated doses in order to evaluate the sensitivity and specificity of our method and to verify the authenticity of pseudoresistant arterial hypertension by the traditional method, which is described above.

At the second stage, the frequency of resistant and pseudoresistant arterial hypertension in the comparison group (using the traditional method) was determined and compared with the frequency of resistant and pseudoresistant arterial hypertension in the main group (using the method proposed by us).

At the third stage, we evaluated the parameters of office blood pressure in patients of the main group (the differential diagnosis by our proposed method) and in the patients of comparison group (the differential diagnosis using the traditional method) on each visit (respectively, on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days).

The statistical processing of the obtained results was carried out using the Microsoft Excel 2010 statistical analysis package (Microsoft, USA, 2010) and Statistica 6.0 (StatSoft, 2006). To describe the data in normal distribution, the arithmetic mean and standard deviation (M ± SD), frequency and standard error (P ± q) were used. To determine the significance of the difference between the proportions (percentages, frequencies), the Z-criterion test, the criterion χ^2 were used. To compare the two groups, an independent t-test was used for the mean (for independent groups). The dynamics of the indicators in the same group at the stages of treatment was compared with the help of the dual double-test t-test for the middle (for dependent groups). For the threshold level of statistical significance were taken $p < 0.05$. The calculation of sensitivity, specificity, predictive value of the diagnostic test, the likelihood ratio, and their 95.0 % confidence interval (CI) were performed using the Latin square (four-field table) method.

Results and discussion. According to the results of the application of our proposed method of differential diagnosis of pseudoresistant and resistant hypertension, the frequency of pseudoresistant arterial hypertension detection in the main group of patients was 83.3 % (n = 50), the incidence of resistant arterial hypertension was 16.7 % (n = 10). That is, according to the results of an acute pharmacological test with three previously assigned antihypertensive drugs developed by us, pseudoresistant arterial hypertension was determined in 50 patients (83.3 %), who have continued to participate in the study and to take three previously assigned antihypertensive drugs in maximal tolerated doses, because these drugs were used in low-therapeutic doses, although they effectively lowered the blood pressure.

In order to evaluate the sensitivity and specificity of our method and to verify the authenticity of detected pseudoresistant arterial hypertension, we measured the office blood pressure of these patients on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days of treatment. At each re-visit (on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days), the indexes of office blood pressure were evaluated and in those patients in which three antihypertensive drugs at the maximum tolerated dosages lowered the arterial pressure to target indicators effectively, we diagnosed pseudoresistant arterial hypertension. In those patients, in whom at the time of the re-visit, three

antihypertensive drugs at the maximum tolerated dose did not effectively reduce blood pressure, we continued treatment, increasing the doses. In those patients who failed to correct the blood pressure for 28 ± 3 days effectively, we diagnosed resistant arterial hypertension.

On the 3th-5th day, 18 (36.0 %) patients failed to reach the target level of systolic blood pressure, they continued therapy with drugs at increased doses, assessing the effectiveness of such therapy by measuring the office blood pressure on the 14th ± 2 days of treatment. In 32 (64.0 %) patients, three antihypertensive drugs were effective in controlling blood pressure, so they continued to take three antihypertensive drugs at the previous doses.

On the 14th ± 2 days, the target blood pressure level (<140/90 mm Hg) was not achieved in 22.0 % (n = 11) patients, so they continued therapy with drugs at increased doses, assessing the effectiveness of such therapy by measuring the office blood pressure in 14 days, that is on the 28th ± 3 days of treatment. In 78.0 % (n = 39) of the patients, the target blood pressure level was achieved and they continued to take three antihypertensive drugs at the previous doses.

On the 28th ± 3 days of treatment, only 6 (12.0 %) patients failed to reach the target level of systolic blood pressure, they got the final diagnosis of resistant arterial hypertension and they were referred to a cardiologist for further correction of treatment. In 88.0 % (n = 44) of patients, three prescribed antihypertensive drugs effectively controlled the blood pressure, so they got a final diagnose of pseudoresistant arterial hypertension.

The calculation of the reliability of the new method of differential diagnosis of essential resistant and pseudo-resistant arterial hypertension was carried out using the Latin square (four-field table) method. It is established that the sensitivity of the proposed method of differential diagnosis is 95.7 % (95.0% CI 91.8-99.6), the specificity is 57.2 % (95.0% CI 47.5-66.9), compared to the traditional one. The accuracy index (diagnostic value of the test) is 86.7 % (95.0% CI 80.1-93.3) (Table).

True presence or absence of a disease (four-field table for calculating the reliability of a diagnostic test)

Test results	There is a disease	No disease	Total
Positive diagnosis of pseudoresistant arterial hypertension	44 (really positive) a	6 (not really positive) b	50 a+b
Negative diagnosis of pseudoresistant arterial hypertension	2 (false negative) c	8 (true negative) d	10 c+d
Total	46 a+c	14 b+d	60

At the second stage of the study, in patients of the comparison group, which empirically increased the dose of three previously assigned antihypertensive drugs to the maximum tolerated, the effectiveness of such therapy was evaluated by the traditional method: by measuring the office blood pressure on the 3th-5th day, on the 14th ± 2 days and on the 28th ± 3 days of treatment.

On the 3th-5th day of treatment, the target blood pressure level (<140/90 mm Hg) in the patients of the comparison group was achieved only in 11.7 % (n = 7) of patients, who have continued to take three antihypertensive drugs at previous doses. That is, previously prescribed antihypertensive drugs in these patients effectively lowered blood pressure, but were used in low-therapeutic doses, which prevented previously effective control of blood pressure. In the remaining 88.3 % (n = 53) of patients, the blood pressure remained above the target level (<140/90 mm Hg) against the background of receiving three previously prescribed antihypertensive drugs at maximum tolerated doses, they continued to take three antihypertensive drugs in increased dosages.

On the 14th ± 2 days, 32 (53.3 %) patients failed to reach the target level of systolic blood pressure, they continued therapy with drugs at increased dosages, assessing the effectiveness of such therapy by measuring the office blood pressure on the 14th ± 2 days of treatment. In 28 (46.7 %) patients, three antihypertensive drugs were effective in controlling blood pressure, so they continued to take three antihypertensive drugs at the previous doses.

That is, on the 28th ± 3 days of treatment, the target blood pressure level (<140/90 mm Hg) was achieved in 80.0 % (n = 48) patients of comparison group, so they got the final diagnosis of pseudoresistant arterial hypertension. In the remaining 20.0 % (n = 12) patients, true essential resistant arterial hypertension was identified and they were referred to a cardiologist for further correction of treatment.

The frequency of pseudoresistant arterial hypertension detection in the comparison group of patients was 80.0 %, in the main group - 88.0 %, the incidence of resistant arterial hypertension was 20.0 and 12.0 %, respectively ($\chi^2 = 1.7$; df = 1; $p > 0.05$). That is, according to the results of the differential diagnosis of essential resistant and pseudoresistant arterial hypertension, as a traditional method and developed by us, pseudoresistant arterial hypertension was determined in 92 patients (83.6 %) and resistant arterial hypertension – in 18 patients (16.4 %).

At the third stage of the study, evaluation of the parameters of office blood pressure in patients of the main group and comparison group on each visit showed, that the method proposed by us, due to the original approach to the determination of the effectiveness of the three previously prescribed antihypertensive drugs in the control of blood pressure, allowed to reduce the timing of the differential diagnosis of essential resistant and pseudoresistant arterial hypertension significantly - to 3.9 ± 2.6 days, in comparison with the traditional method - 16.4 ± 6.8 days ($p < 0.05$), which allowed to achieve the significant decrease in systolic blood pressure (>10.0 % of the baseline level) on average 4.5 ± 1.5 days than in the traditional method - (20.2 ± 3.6) days ($p < 0.05$) (Fig. 1).

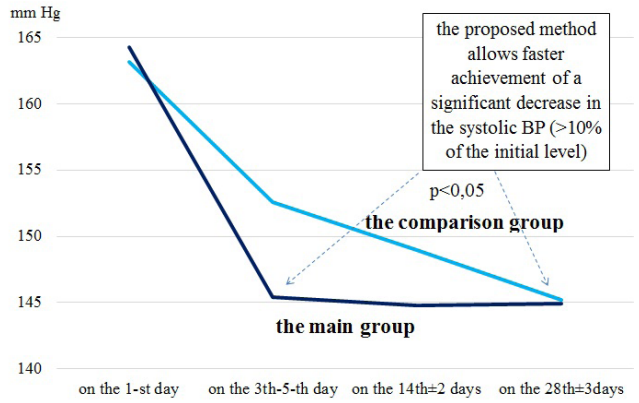

Fig. 1. Dynamics of the average systolic blood pressure level for patients of the comparison group and of the main group on Day 1, Day 3-5, 14 ± 2 days and 28 ± 3 days of treatment.

The dynamics of diastolic blood pressure indicators was less pronounced, but it had a similar orientation as systolic blood pressure (Fig. 2).

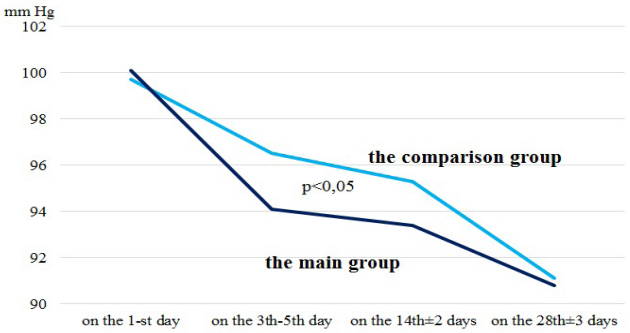

Fig. 2. Dynamics of the average diastolic blood pressure level for patients of the comparison group and of the main group on Day 1, Day 3-5, 14 ± 2 days and 28 ± 3 days of treatment.

On the 3th-5th day of treatment in the comparison group, in which differential diagnosis was carried out in the traditional way, reaching the target level of blood pressure, the diagnosis of pseudoresistant arterial hypertension was established only in 11.7 ± 4.2 % of patients, against 64.0 ± 6.2 % of patients from the main group ($p < 0.01$), and on the 14th ± 2 days - in 46.7 ± 6.4 % of patients against 78.0 ± 5.3 % of patients from the main group ($p < 0.05$). Thus, in two weeks of the treatment the target level of blood pressure (BP <140/90 mm Hg) was achieved in the majority of patients in the main group and the diagnosis of pseudoresistant arterial hypertension was established (Fig. 3).

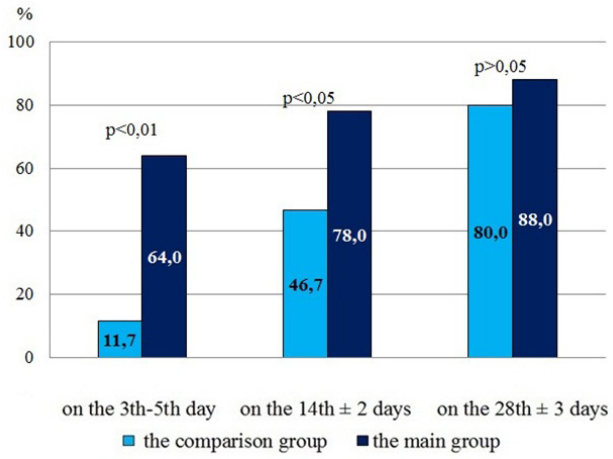

Fig. 3. Percentage of patients who have reached the target level of blood pressure.

Thus, based on the conducted research, the effectiveness of the new method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension in the reduction of the timing of the diagnosis of pseudoresistant arterial hypertension and the faster achievement of blood pressure control in this category of patients is scientifically substantiated.

Conclusions. The sensitivity of the proposed method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension, in comparison with the traditional one, is 95.7 % (95.0% CI 91.8-99.6), the specificity is 57.2 % (95.0% CI 47.5-66.9), the accuracy index (diagnostic value of the test) is 86.7 % (95.0% CI 80.1-93.3), compared to the traditional one.

The frequency of pseudoresistant arterial hypertension detection in the comparison group of patients was 80.0 %, in the main group - 88.0 %, the incidence of resistant arterial hypertension was 20.0 and 12.0 %, respectively ($\chi^2 = 1.7$; df = 1; $p > 0.05$).

The application of the developed by us method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension can significantly reduce the timing of differential diagnosis and accelerate the timing of the diagnosis of pseudoresistant arterial hypertension - to 3.9 ± 2.6 days, compared with the traditional method - 16.4 ± 6.8 days ($p < 0.05$), that allows to achieve a significant reduction in systolic blood pressure (> 10% of the baseline level) on average 4,5 ± 1,5 days than with the traditional method - 20,2 ± 3.6 days ($p < 0.05$).

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Порівняльне дослідження методик диференційної діагностики есенціальної резистентної та псевдорезистентної артеріальної гіпертензії у практиці сімейного лікаря

О. Б. Волошина, В. О. Збітнєва, І. С. Лисий, Т. О. Дичко, В. В. Саморукова, О. Р. Дукова

Вступ. Частота випадків резистентної гіпертензії у популяції хворих на артеріальну гіпертензію коливається в межах 5,0–18,0 %. У структурі резистентної артеріальної гіпертензії псевдорезистентна становить 90,0–95,0 %.

Мета. Порівняти методики диференційної діагностики есенціальної резистентної та псевдорезистентної артеріальної гіпертензії у практиці сімейного лікаря.

Матеріали й методи. Обстежено 120 пацієнтів із неконтрольованою есенціальною артеріальною гіпертензією. У рандомізований спосіб їх поділено на дві ґрупи – основну – 60 пацієнтів (26 (43,3 %) жінок і 34 (56,7 %) чоловіки, середній вік 54,6 ± 9,2 року та ґрупу порівняння – 60 пацієнтів (24 (40,0 %) жінки та 36 (60,0 %) чоловіків, середній вік 55,4 ± 8,5 року). Дослідження поділили на три етапи.

На першому етапі пацієнтам основної ґрупи проводили диференційну діагностику есенціальної резистентної та псевдорезистентної артеріальної гіпертензії за допомогою власної методики. Надалі пацієнти з діагнозом «псевдорезистентна артеріальна гіпертензія» за результатами запропонованої нами методики продовжили участь у дослідженні. Вони вживали три раніше призначені антигіпертензивні лікарські засоби у максимально переносимих дозах із оцінкою ефективності такого лікування шляхом вимірювання показників офісного артеріального тиску на 3–5-й день, на 14-й ± 2 дні, на 28-й ± 3 дні.

На другому етапі за традиційною методикою оцінювали результати проведення диференційної діагностики есенціальної резистентної та псевдорезистентної гіпертензії у ґрупі порівняння. Емпірично збільшували дози трьох раніше призначених антигіпертензивних препаратів до максимально переносимих, оцінюючи ефективність лікування шляхом вимірювання показників офісного артеріального тиску на 3–5-й день, на 14-й ± 2 дні, на 28-й ± 3 дні. На третьому етапі оцінювали показники офісного артеріального тиску у пацієнтів обох ґруп на кожному візиті.

Результати. Чутливість, специфічність, індекс точності (діагностичну цінність) нового методу диференційної діагностики есенціальної резистентної і псевдорезистентної артеріальної гіпертензії та їх 95,0% довірчий інтервал (ДІ) визначали за методом латинського квадрата (чотирипільної таблиці). Чутливість запропонованого нами способу диференційної діагностики, з традиційним, становить 95,7 % (95,0% ДІ 91,8–99,6), специфічність – 57,2 % (95,0% ДІ 47,5–66,9), індекс точності (діагностична цінність тесту) – 86,7 % (95,0% ДІ 80,1–93,3).

Частота виявлення псевдорезистентної артеріальної гіпертензії у пацієнтів ґрупи порівняння досягала 80,0 %, в основній групі – 88,0 %, частота виявлення резистентної артеріальної гіпертензії – відповідно 20,0 і 12,0 % (χ^2=1,7; df=1; $p > 0,05$). Тобто за результатами проведеної диференційної діагностики есенціальної резистентної і псевдорезистентної артеріальної гіпертензії, як загальноприйнятим методом, так і розробленим нами, переважно була визначена псевдорезистентна артеріальна гіпертензія – 92 пацієнти (83,6 %), резистентна артеріальна гіпертензія – 18 пацієнтів (16,4 %).

На основі порівняльного дослідження різних методів диференційної діаґностики есенціальної резистентної та псевдорезистентної гіпертензії науково обґрунтовано ефективність удосконаленого нами методу в значному зменшенні тривалості проведення диференційної діаґностики та в скороченні термінів виставлення діаґнозу псевдорезистентної гіпертензії, завдяки оригінальному підходу до визначення ефективності трьох раніше призначених антигіпертензивних препаратів у контролі артеріального тиску, та більш швидкому досягненню контролю артеріального тиску цієї категорії хворих.

Висновки. Чутливість запропонованого нами способу диференційної діаґностики, порівняно з традиційним, становить 95,7 % (95,0% ДІ 91,8–99,6), специфічність – 57,2 % (95,0% ДІ 47,5–66,9), індекс точності (діаґностична цінність тесту) – 86,7 % (95,0% ДІ 80,1–93,3).

Частота виявлення псевдорезистентної артеріальної гіпертензії у ґрупі порівняння досягала 80,0 %, у основній ґрупі – 88,0 %, частота резистентної артеріальної гіпертензії становила 20,0 і 12,0 % відповідно ($\chi^2 = 1,7$; df = 1; $p > 0,05$).

Науково обґрунтовано ефективність удосконаленого нами методу в значному зменшенні тривалості проведення диференційної діаґностики до 3,9 ± 2,6 днів, порівняно з традиційною методикою – 16,4 ± 6,8 днів ($p < 0,05$), що дає змогу досягти суттєвого зниження систолічного артеріального тиску (>10,0 % від показників на початку лікування) у середньому за 4,5 ± 1,5 днів порівняно з традиційною методикою – 20,2 ± 3,6 днів ($p < 0,05$).

Ключові слова: резистентна гіпертензія, псевдорезистентна гіпертензія, диференційна діаґностика псевдорезистентної гіпертензії від резистентної.

Comparative Study of Methods of Differential Diagnosis of Essential Resistant and Pseudoresistant Arterial Hypertension in the Practice of Doctor of General Practice

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Introduction. The prevalence of arterial hypertension in Ukraine reaches 35.0 % among the adult population. The frequency of cases of resistant hypertension in the population of patients with hypertension varies from 5.0 to 18.0 %. In the structure of resistant arterial hypertension, pseudoresistant is observed in 90.0-95.0 % of cases.

The aim of the study. To compare the various methods of the differential diagnosis of essential resistant and pseudoresistant arterial hypertension in the practice of doctor of general practice.

Materials and methods. 120 patients with uncontrolled essential arterial hypertension, taking three antihypertensive drugs, and randomly divided into two groups - the main group - 60 patients (26 (43.3%) women and 34 (56.7 %) men, average age 54.6 ± 9.2 years) and comparison group - 60 patients (24 (40.0 %) women and 36 (60.0 %) men, average age 55.4 ± 8.5 years) were examined. The study consisted of three stages. At the first stage, the differential diagnosis of essential resistant and pseudoresistant arterial hypertension, using the method proposed by us for the patients from the main group was performed. Subsequently, the patients with detected by our acute pharmacological test pseudoresistant arterial hypertension continued to participate in the study and to take three previously assigned antihypertensive drugs in maximal tolerated doses in order to evaluate the sensitivity and specificity of our method and to verify the authenticity of pseudoresistant arterial hypertension by the traditional method. At the second stage, the differential diagnosis of essential resistant and pseudoresistant arterial hypertension using the traditional method for the patients from the comparison group was performed and the frequency of resistant and pseudoresistant arterial hypertension in both groups was determined. In the third stage, the assessment of the parameters of office blood pressure in the patients of both groups was performed on each visit.

Results. Based on the conducted research, the effectiveness of the new method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension in the reduction of the timing of the diagnosis of pseudoresistant arterial hypertension and the faster achievement of blood pressure control in this category of patients is scientifically substantiated.

Conclusions. The sensitivity of the proposed method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension, in comparison with the traditional one, is 95.7 % (95% CI 91.8-99.6), the specificity is 57.2 % (95% CI 47.5-66.9), the accuracy index (diagnostic value of the test) is 86.7 % (95% CI 80.1-93.3), compared to the traditional one.

The frequency of pseudoresistant arterial hypertension detection in the comparison group of patients was 80.0 %, in the main group - 88.0 %, the incidence of resistant arterial hypertension was 20.0 and 12.0 %, respectively ($\chi^2 = 1.7$; df = 1; $p > 0.05$).

The application of the developed by us method of differential diagnosis of essential resistant and pseudoresistant arterial hypertension can significantly reduce the timing of differential diagnosis and accelerate the timing of the diagnosis of pseudoresistant arterial hypertension - to 3.9 ± 2.6 days, compared with the traditional method - 16.4 ± 6.8 days ($p < 0.05$), that allows to achieve the significant reduction of systolic blood pressure (>10.0 % of the baseline level) on average 4.5 ± 1.5 days earlier than using the traditional method – 20.2 ± 3.6 days ($p < 0.05$).

Keywords: resistant hypertension, pseudoresistant hypertension, differential diagnosis of pseudoresistant and resistant hypertension.