Depression and its relationship with adherence to antihypertensive pharmacotherapy in elderly

Depressão e sua relação com a adesão à farmacoterapia anti-hipertensiva em idosos

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RESUMO

Objetivo: analisar a relação entre adesão ao tratamento medicamentoso anti-hipertensivo e a depressão em idosos hipertensos assistidos pela Estratégia Saúde da Família na cidade de Brazlândia, Distrito Federal. **Método:** Trata-se de estudo descritivo, transversal. Foi realizada entrevista estruturada e aplicação de questionários (EDG-15 e MMAS-8) em idosos hipertensos (n=261). **Resultados:** A análise mostrou 59% do sexo feminino, 90% de baixa escolaridade, 53% eram aposentados, 68% eram casados, 13% moravam sozinhos, 78% recebiam até 2 salários mínimos, 68% não faziam automedicação, 38% obtinham o medicamento no posto de saúde, 88% era sedentário, 81% não era tabagista, o medicamento mais usado foi o diurético 60%, 22% estava em monoterapia. **Conclusão:** A análise comparativa evidenciou que a medida de pressão arterial e a forma como adquire o medicamento são variáveis independentes da adesão ao tratamento. A prevalência de depressão foi de 37%. A razão de prevalência mostrou maior risco de depressão em pacientes com pressão arterial inadequada, com circunferência abdominal inadequada, com sobrepeso e que não aderem ao tratamento. A razão de prevalência mostrou menor risco de depressão nos homens e tabagistas.
Descritores: Idoso; Depressão; Adesão à medicação; Hipertensão; Atenção primária à saúde.

ABSTRACT

Objective: To analyze the relationship between adherence to antihypertensive drug treatment and depression in hypertensive elderly assisted by the Family Health Strategy in the city of Brazlândia, Federal District. **Method:** This is a descriptive cross-sectional study. Structured interviews and questionnaires (EDG-15 and MMAS-8) were performed in hypertensive elderly (n = 261). **Results:** The analysis showed 59% female, 90% low educated, 53% were retired, 68% were married, 13% lived alone, 78% received up to 2 minimum wages, 68% did not self-medicate, 38% obtained 88% sedentary, 81% non-smoker, 60% diuretic, 22% monotherapy. **Conclusion:** The comparative analysis showed that the measurement of blood pressure and the way you buy the drug are independent variables of treatment adherence. The prevalence of depression was 37%. The prevalence ratio showed a higher risk of depression in patients with inadequate blood pressure, inadequate waist circumference, overweight and not adhering to treatment. The prevalence ratio showed lower risk of depression in men and smokers.
Descriptors: Elderly; Depression; Medication adherence; Hypertension; Primary Health Care.

ORIGINAL

Introduction

Population aging is a worldwide phenomenon resulting from the reduction in birth and mortality rates, associated with the increase in life expectancy.[1] This change in the demographic profile also led to changes in the epidemiological and morbidity profile, highlighting the increase in chronic degenerative diseases, as well as the need for adjustments in family burdens, challenges for health, welfare, education, transportation, housing, leisure, among others, in order to ensure quality of life in the elderly.[2-3] This situation also led to changes in the demands of public health policies.[4-5]

Aging is a natural process with progressive decrease of the functional reserve of the individual and causes different geriatric syndromes, such as postural instability, vascular aging, cognitive and communicative disability.[6-7] This process does not occur homogeneously, varying in historical time, cultures, social classes, personal life history, educational conditions, lifestyles, genetic determinations, gender, professions, among other aspects.[3]

Hypertension is a highly prevalent chronic non-communicable disease in the geriatric population, and may exceed 60%.[2,7] This is a multifactorial clinical condition that leads to high and sustained blood pressure (BP) levels, leading to functional and/or structural alterations of target organs and metabolic alterations, being considered a risk factor for cardiovascular disease.[7] In the Federal District, cardiovascular diseases are the most prevalent and the leading cause of death in the elderly population..[4] Despite the well-known knowledge of the treatment and its importance, the percentage of blood pressure control is low, especially due to non-adherence to treatment.[8]

Several factors influence treatment adherence, necessary for therapeutic effectiveness and patient's quality of life.[8] Factors related to adherence in external (such as access to medicines, disease and treatment characteristics), internal factors (including socioeconomic and psychological factors, locus of control and health beliefs) and relational factors, including social support, are classified. and health professional-patient relationship.[9] Non-adherence to treatment has important consequences such as increased risk of cardiovascular complications and hospitalizations, as well as the impact on health costs.[8]

Depression is another common chronic disease that occurs during aging and has been linked to hypertension by psychosocial and genetic aspects.[10] Depression has been increasing in prevalence, up to 15% in the elderly living in the community, leading to negative consequences on the quality of life of affected individuals.[11-12] The occurrence of depression varies according to gender, education, socioeconomic status, health conditions and is related to cognitive impairment.[11] Depression is an independent risk factor for high blood pressure, especially if recurrent episodes occur and is lifestyle related.[10]

Depression is an important public health problem that undermines the quality of life of individuals and their social relationships.[11-12] Depression in the elderly is underdiagnosed in Brazil and its importance is underestimated by health professionals.[12]

The role of primary health care (PHC) is relevant in the promotion of mental health in communities, underlining the role of family health strategy teams (FHS), in order to track, refer and monitor individuals with mental illness.[12] The FHS teams are also fundamental in monitoring individuals with

other chronic diseases, especially hypertension.[6,12]

The FHS is a model of PHC services organization, based on multiprofessional teams, responsible for the integral and continuous attention to individuals of families registered in a restricted area.[6] Considering that the elderly are accompanied by the FHS, the health team should be alert to early detection, monitoring and treatment of diseases such as hypertension and depression, actively searching for cases. Special attention should be given to assessing adherence to the proposed treatments.

From this perspective, the objective of this paper is to analyze the relationship between adherence to antihypertensive drug treatment and depression in hypertensive elderly assisted by Family Health Teams (FHS) in Brazlândia, Federal District, in order to qualify care for the elderly.

Method

Descriptive and cross-sectional study conducted in hypertensive elderly assisted by the 11 FHS teams from Brazlândia, Federal District. Data were collected from December 2015 to April 2016.

The sample, calculated by simple random sampling without replacement, consisted of 261 individuals, of both sexes, aged 60 years or older with hypertension on antihypertensive medication.

Elderly people who refused to participate and those with diabetes mellitus (DM) were excluded from the study, since there is an association between DM and depression, which could be a bias in this study.[12]

Data were collected from the Primary Care Information System (SIAB). This system was created in 1998 by the Department of Information and Informatics of the Unified Health System (DATASUS) and by the Community Health Coordination / Health Care Secretariat (COSAC / SAS) enabling the monitoring of activities performed by the health team and profile. populational.[13]

It consists of a computer program, fact sheets (A, B, C and D) and reports (SSA-2 and PMA-2). This national health database is fed by each FHS team on a monthly basis from the information in these updated records. In this study we highlight the hypertensive follow-up form, which is the B-HA.

Three instruments were applied to the research participants. The first was a structured interview with all 261 elderly who investigated the sociodemographic, economic, epidemiological and pharmacotherapeutic profile. The second instrument was the 15-item Geriatric Depression Scale (EDG-15) to classify participants into two groups: non-depressed and depressed. The third instrument was Morisky's 8-item Therapeutic Adherence Scale (MMAS-8) classifying participants into two groups: individuals with satisfactory adherence to drug treatment for hypertension and individuals with poor adherence to drug treatment for the same disease. On the day of the interview, blood pressure was measured and anthropometric data were measured.

The EDG-15 is a frequently used tool for screening depression in the elderly with valid and reliable measures.[14-15] This is a short version of the original scale and was designed by Sheikh and Yesavage in 1986 from items that most strongly correlated with the diagnosis of depression, and is attractive

for screening for depression in non-specialized settings, with good diagnostic accuracy. with adequate sensitivity, specificity and reliability.[16-17]

MMAS-8 was developed from a previously validated 4-item scale and supplemented with additional items to more broadly capture barriers to adherence to drug treatment.18 This is a widely used adherence scale and highly reliable.

The drugs were classified according to the Anatomical Therapeutical Chemical Classification System (ATC) and analyzed according to the Beers criteria for potentially inappropriate drugs for use in the elderly.[19]

Blood pressure was measured by the researcher at the time of the interview with a calibrated mercury sphygmomanometer measured in millimeters of mercury with the individual sitting and after a 5-minute rest. Anthropometric measurements were performed on a digital scale with kilogram measurement and inextensible tape measure with centimeter measurement. The elderly were weighed barefoot in light clothing.

Data organization and analysis were conducted in the Statistical Package for the Social Sciences (SPSS, version 18).

The descriptive analysis analyzed the frequency of observations in each category and calculated the percentage that represents the studied population. Sex, education, retirement, marital status, living alone, family income (in minimum wages), access to medication, self-medication, physical inactivity, smoking, drug classes in use, amount of drugs in use were analyzed.

In the comparative analyzes, a chi-square test was performed for double entry tables. The variables adherence to treatment versus blood pressure and adherence to treatment versus access to medication were compared (such as purchase, personal purchase, purchase at the popular pharmacy or purchase at the clinic, and there may be a combination of these options).

For prevalence analysis, the frequency of each category was calculated for the categories of the other related variables. The prevalence ratio (PR) was calculated with 95% confidence. In these analyzes, the following variables were observed: blood pressure (BP), waist circumference (WC), arm circumference (BC), calf circumference (PC), body mass index (BMI), physical inactivity, smoking, gender, age, treatment adherence. and depression.

The project was approved by the Research Ethics Committee of the Health Sciences Teaching and Research Foundation (CEP / FEPECS) under number CAEE 51576715.6.0000.5553. All participants signed the Informed Consent Form (FICF), as recommended by CNS Resolution No. 466/2012.

Results

The epidemiological profile of the 261 participants showed that 59% were women and 90% of the sample had completed elementary school. Regarding marital status, 68% of the sample was married and 20% widowed. Regarding the occupation of the elderly interviewed, 53% were retired and 78% reported family income between 1 and 2 minimum wages (Table 1).

Table 1- Characterization of hypertensive elderly assisted by FHS teams in Brazlândia, DF, 2016.

Variable	N	%
Gender		
Female	154	59
Male	107	41
Education		
Illiterate	73	30.3
Basic School incomplete	124	47.5
Basic School complete	32	12.3
High School incomplete	8	3.1
High School complete	8	3.1
College	1	0.4
Marital Status		
Married	176	67.4
Divorced	16	6.1
Single	13	5.0
Stable union	3	1.1
Widow	53	20.3
Family income		
No income	3	1.1
1-2 minimum wages	205	78.5
3-4 minimum wages	48	18.4
Over 4 minimum wages	5	1.9
Sedentarism		
Yes	229	87.7
No	32	12.3
Smoking		
Yes	49	18.8
No	212	81.2

In addition, 38% of respondents purchased medication exclusively at the health post. Most, 68%, answered that they did not use self-medication. As for the number of medications used to treat hypertension, only 22% are on their own. Regarding risk factors for cardiovascular disease, 88% of the elderly were sedentary and 19% were smokers.

Blood pressure and adherence to drug treatment are independent variables (p-value of 12%), as well as how you buy the drug and adherence to treatment (p-value of 56%).

In this study, the prevalence of depression in each variable and category was calculated, and the prevalence in 100 cases represented by the% symbol. The prevalence ratio (PR) that measures the risk that the patient has of presenting depression motivated by the category of other variables was also represented, with presentation of the associated confidence interval (CI) (Table 2).

The results of this study identified the prevalence of elderly with depression of 37%, highlighting the majority of females. Among patients diagnosed with depression, 53% had inadequate blood pressure levels, and this decreased to 47% among individuals without depression.

In relation to anthropometric parameters, waist circumference values were inadequate in 57% of individuals without depression, compared to 43% of individuals with depression. Regarding the arm circumference, inadequate values were 32% of individuals with depression and 68% of individuals without depression. Regarding calf circumference, 42% of the elderly with depression and 58% of the elderly without depression had values outside the limit, i.e., less than 31cm. As for BMI only 29% were eutrophic among individuals with depression and this value increased to 71% in those without depression.

Regarding risk factors for chronic diseases, physical inactivity was identified in 69% of the elderly without depression. It should be noted that smoking was found in higher percentage among the elderly without depression, with a prevalence of 66%. Regarding adherence to antihypertensive drug treatment, the percentage of elderly people who adhered to treatment was significantly higher in those without depression, corresponding to 86%.

Table 2- Prevalence ratio of depression in elderly with hypertension (n = 261) assisted by primary health care in Brazlândia, Distrito Federal.

	Suspect	%	Absence	%	Total	PR	CI	
Blood Pressure								
Adequate	62	32%	131	68%	193	1.000	-	-
Inadequate	36	53%	32	47%	68	1.648	1.216	2.233
Abdominal circumference								
Adequate	30	29%	72	71%	102	1.000	-	-
Inadequate	*68*	43%	*91*	57%	159	1.454	1.024	2.064
Brachial Circumference								
Adequate	*85*	39%	*135*	61%	220	1.000	-	-

Inadequate	13	32%	28	68%	41	0.821	0.508	1.325
Calf circumference								
Adequate	80	37%	138	63%	218	1.000	-	-
Inadequate	18	42%	25	58%	43	1.141	0.770	1.690
BMI								
Low weight	*15*	35%	*28*	65%	43	1.208	0.717	2.034
Eutrophic	26	29%	64	71%	90	1.000	-	-
Overweight	57	45%	71	55%	128	1.541	1.057	2.248
Sedentary								
Yes	10	31%	22	69%	32	0.813	0.474	1.395
No	*88*	38%	*141*	62%	229	1.000	-	-
Smoking								
Yes	73	34%	139	66%	212	0.675	0.485	0.940
No	25	51%	24	49%	49	1.000	-	-
Gender								
Female	66	43%	88	57%	154	1.000	-	-
Male	32	30%	75	70%	107	0.698	0.495	0.983
Age								
Old	57	36%	103	64%	160	1.000	-	-
Very old	*41*	41%	*60*	59%	101	0.923	0.723	1.177
Adherence to treatment								
Insatisfactory	*94*	40%	*139*	60%	233	2.824	1.125	7.091
Satisfactory	4	14%	24	86%	28	1.000	-	-

Among the most relevant findings, the prevalence of depression was 2.3 times higher in patients with inadequate blood pressure; 1.79 times higher in patients with inadequate waist circumference; 4 times higher in patients with poor treatment adherence. It was also identified a 2 times smaller association between depression in smokers and 1.75 times less in men than in women.

Regarding the drugs used in the treatment of hypertension, considering the Anatomical Therapeutic Chemical Code (ATC), 5 classes of antihypertensive medication and others that are part of the prevention of complications of hypertension were classified as group B (blood and organs). hematopoietic) and group C (cardiovascular system). From group B we found the subgroup B01 - antithrombotic. From group C were found the subgroups C02 - antihypertensive, C03 - diuretics, C07 - beta blockers, C08 - calcium channel blockers, C09 - agents acting on the renin-angiotensin system and C10 - hypolipidemics, as described: Diuretics: 59%; Angiotensin Receptor Blocker (ARB): 46%; Adrenergic Inhibitors (beta-blockers and centrals): 36%; Angiotensin-converting enzyme (ACE inhibitor) inhibitors: 30%; Calcium channel antagonists (ACC): 13%; Direct vasodilators: 1%. About the drugs related to the prevention of complications of hypertension, only 22% of patients are on monotherapy regarding the treatment of hypertension and its complications, as described: Antiplatelet (AAS): 35%; Statins: 28%.

Discussion

The results found mostly agree with the literature. Most of the population in this sample was female, which is corroborated in the national and international literature and is related to longer life expectancy in women and male over-mortality, leading to a feminization of aging.[4,10]

The prevalence of depression was 37%, predominantly in women, similar to other recent studies.[10,20] The high prevalence of depression in this population asserts the need for specific interventions by health teams, highlighting the importance of a multidisciplinary team, available mainly in Primary Care, through the Family Health Strategy.[6] It is noteworthy that despite offering adequate strategies for the treatment of depression, it has been found difficulty in diagnosing this disease by the Primary Care team.[20]

The diagnosis of depression does not depend on expert clinical assessment. The high prevalence of this condition in the population requires other means of detection, since the opportunity for consultation with the specialist is remote in public health services. In this context, the identification of depression can be facilitated by the use of validated instruments such as EDG-15, of fast application and low cost, becoming a valuable public health instrument for detecting the disease in non-specialized environments.[16]

This scale has been widely used in many countries and in different types of health services, showing good performance in detecting depression in the elderly and monitoring the severity of symptoms over time.[15] This information shows the importance and usefulness of the application of this scale by PHC health professionals, including the FHS, in order to better identify and treat this disease.[6]

Regarding medication adherence, defined as the extent to which the patient's behavior coincides with that prescribed by the healthcare professional[9], we found that patients with poor adherence were more associated with depression. Adherence was considered unsatisfactory when grade was lower than 8 in MMAS-8.[19] In both groups, with and without depression, unsatisfactory adherence rates were high, corroborating literature data showing adherence rates below 50%.[6,10]

Among the options of ways to acquire the drugs, most obtained it exclusively at the health post, with 33% of the elderly getting part of their own medication and part of the post. Only 5% of respondents had the only option to buy their own medicines, which is in line with family income data.

Most, 68%, said they did not use self-medication when asked. It is possible to conjecture that this value should be overestimated, due to the limitation of the study of possible denial of self-medication by the patient because he felt inhibited, since the interviewer was a doctor.

Since the purpose of this study was to evaluate adherence to antihypertensive drug treatment, using a validated scale specific to this theme, the drugs analyzed were those related to the treatment of hypertension.

Regarding the classes of drugs found, the 5 classes of antihypertensive drugs and those that are part of the prevention of complications of hypertension are classified according to the Anatomical Therapeutic Chemical Code - ATC: the drugs used by this group of elderly. they are from group B (blood and hematopoietic organs) and group C (cardiovascular system). From

group B we found the subgroup B01 - antithrombotic. From group C were found the subgroups C02 - antihypertensive, C03 - diuretics, C07 - beta blockers, C08 - calcium channel blockers, C09 - agents acting on the renin-angiotensin system and C10 - hypolipidemics.

According to Beers[19] criteria, AAS for primary prevention of cardiac events should be used with caution in elderly over 80 years of age due to lack of evidence of risk versus benefit. Vasodilators should also follow the same logic in the geriatric population as they can exacerbate episodes of syncope. Clonidine, in turn, is a centrally acting adrenergic inhibitor and is considered potentially unsuitable for use in the elderly by the Beers criteria. It is strongly recommended to be avoided as it may cause orthostatic hypotension, bradycardia, syncope, sedation and impaired function. Cognitive impairment is not recommended as a first line in the treatment of hypertension.

The awareness of patients regarding their illness and pharmacotherapeutic treatment associated with educational actions and the correct use of medicines are fundamental for monitoring adherence to drug treatment.[6,8] Health professionals should consider the culture and beliefs of patients about medications for effective treatment of hypertension, a viable process through the Family Health Strategy, in which patient care must be integral and longitudinal.[10]

There is no ideal way to evaluate adherence to drug treatment, since the theme is subject to multifactorial characteristics such as access to medicines, health beliefs, side effects of drugs, among others. [9-10] Nevertheless, the application of the MMAS-8 instrument proved to be satisfactory and relevant in the clinical screening and identification of patients who do not adhere to treatment, being an important tool for use within the SUS.[19]

No relationship was found between adherence to antihypertensive drug treatment and blood pressure control. Inadequate blood pressure values are systolic blood pressure greater than or equal to 140mmHg and diastolic blood pressure greater than or equal to 90mmHg.[7] We need to reflect that even among patients considered adherent by MMAS-8, they may take the medicine incorrectly.[19]

No relationship was established between how to obtain the drug and adherence to treatment. The literature shows that cost is the most widely studied predictor of non-adherence, however, according to this study, there is evidence that free access to treatment did not imply satisfactory levels of BP control and, consequently, direct relationship with adherence to treatment.[19]

There was no significant variation in smoking and sedentary percentages.

The limitation for generalizing these findings stems from the fact that the study sample consisted only of elderly assisted by the FHS, not portraying the total elderly population of the Federal District, since FHS coverage is not absolute. In addition, as the interview was conducted by a health professional, responses about their behavior as patients may be biased. Nevertheless, the sample characteristics were similar to those of other national and international studies. It is noteworthy that studies with these relationships specifically in the elderly population are scarce.

Conclusion

Older people are more likely to have depression when they do not adhere to antihypertensive drug treatment.

Regarding the association of depression and hypertension in the geriatric population, the elderly often have depressive symptoms and this association tends to lead to a longer or recurrent course of depression. In addition, depression increases the incidence of high blood pressure.

It is important to emphasize that it is up to the health teams to early identify hypertension, depression and any other factor that may compromise the quality of life of the elderly accompanied by their team and promote healthy living habits in order to maintain the autonomy of these individuals.

Continuous and intense efforts by the health team to develop strategies to improve treatment adherence are mandatory since it impacts the prognosis of the disease and the patient's quality of life.

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