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Artículos

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Adherencia farmacológica antihipertensiva en adultos que acuden al centro de salud Suscal, Ecuador

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Abstract:

Arterial hypertension (HT) is a worldwide public health problem because it is the number one risk factor for death. Objective: To determine antihypertensive drug adherence in adults attending the Suscal health center, Ecuador. Methodology: A quantitative, retrospective, cross-sectional study was conducted with a sample of 120 hypertensive patients. Results: 65% were female, 63% resided in rural areas, 54% had no education, 63% worked informally, 51% self-identified as indigenous, 50% spoke Spanish and Kichwa, 67% had a partner. In relation to the variables of antihypertensive treatment and compliance, 73% had HT as a baseline diagnosis, 71% had monotherapy, 54% had less than 5 years of diagnosis and treatment, 75% adhered to antihypertensive pharmacological treatment. Antihypertensive drug adherence according to the time of treatment was associated with the variables female sex, rural residence, indigenous ethnicity, Kichwa language, no schooling, occupation informal activity, marital status: it has a partner, adverse effects at the neurological level, comorbidities: if do not have another disease. The association of both clinical and sociodemographic variables corresponds to patients receiving treatment for less than 5 years. Conclusion: Pharmacological nonadherence could eventually accelerate the development of complications related to hypertension.

Keywords: Arterial hypertension, pharmacological adherence, associated factors.

Resumen:

La hipertensión arterial (HTA) es un problema de salud pública a nivel mundial por ser el factor de riesgo número uno de muerte. Objetivo: Determinar la adherencia farmacológica antihipertensiva en adultos que acuden al centro de salud de Suscal, Ecuador. Metodología: Se realizó un estudio cuantitativo, retrospectivo de corte transversal, con una muestra de 120 hipertensos. Resultados: El 65% fue de sexo femenino, el 63% residen en la zona rural, el 54% no tuvieron estudios, el 63% de ocupación trabajo informal, el 51% se auto-identificaron como indígena, el 50% hablan castellano y kichwa, el 67% tiene pareja. En relación con las variables de tratamiento y cumplimiento antihipertensivo se encontró que el 73% tenía HTA como diagnóstico de base, el 71% tenían monoterapia, el 54% tenía menos de 5 años con diagnóstico y tratamiento, el 75% si se adhiere al tratamiento farmacológico

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antihipertensivo. La adherencia farmacológica antihipertensiva según el tiempo de tratamiento se asoció con las variables sexo femenino, residencia rural, etnia indígena, idioma kichwa, sin instrucción escolar, ocupación actividad informal, estado civil: tienen pareja, efectos adversos a nivel neurológico, comorbilidades: no presentan otra enfermedad. La asociación de las variables tanto clínicas como sociodemográficas corresponden a los pacientes que reciben el tratamiento por menos de 5 años. Conclusión: La no adherencia farmacológica podrían eventualmente acelerar el desarrollo de complicaciones relacionadas con la hipertensión.
Palabras clave: Hipertensión arterial, Adherencia farmacológica, factores asociados.

Introduction

Uncontrolled arterial hypertension (AHT) affects target organs and is considered a current public health problem [1]. Therefore, the Clinical Practice Guidelines on Arterial Hypertension of the Ministry of Public Health (MPH) [2], mentions the factors that prevent its compliance such as low schooling [2-5], obesity [2-5], advanced age [2-5], ethnicity [2-5], sex [2-5], among others. The World Health Organization (WHO) shows that 25% of the population adheres to antihypertensive treatment, but the remaining 75% does not comply, resulting in an economic burden for several countries., from a social [6,7], economic [6,7] and health [6,7] point of view.

Over time, the health network has determined that antihypertensive non-adherence is a major and growing worldwide problem [8]. According to a study, uncontrolled arterial hypertension is responsible for 7.5 million deaths per year, which points to the need to create strategies for effective compliance [9]..

For this reason, the WHO recommends identifying these problems and creating awareness based on strategies to maintain adequate health in patients [10], in such a way that responsible follow-up and compliance with antihypertensive treatment reduces complications [11]. Despite the little information on the subject under study in our environment, this research aimed to contribute clarifying the *status* of hypertensive patients in relation to therapeutic adherence and the factors that define it [12,13]. Thus we asked the following question: Is antihypertensive drug adherence associated with age, sex, marital status, socioeconomic level, ethnicity, and language?

Evidence shows that lifestyles [14-17], insufficient information on the disease and treatment [14-17], economic situation [14-17], and bad habits [14- 17] are factors involved in adherence to antihypertensive treatment. However, different models describe that motivation, behavior, and information are important for identifying health risks and optimizing doctor-patient interpersonal relationships that contribute to pharmacological adherence [10].

Therefore, in the present study, we determined antihypertensive drug adherence in adults attending the Suscal health center. To do so, we characterized the sociodemographic and clinical variables of the study population and analyzed whether the sociodemographic and clinical variables are associated with adherence to antihypertensive treatment, and its correlation with age, sex, marital status, and residence.

Methodology

This is a quantitative, retrospective, cross-sectional study. The study included a population comprised of all hypertensive individuals (N=145), who were treated at the Type A Suscal Health Center in the province of Cañar. The sample consisted of 120 hypertensive patients attending the Suscal health center in the province of Cañar, with a diagnosis of arterial hypertension. For the universe, the error (5%) that we made in the estimation of the sample size was calculated using the Sierra Bravo formula of 1988, starting from a confidence level of 99%. The inclusion criteria were persons diagnosed with arterial hypertension and

attending the Suscal Health Center. Hypertensive patients between 36 and 90 years of age. While the exclusion criteria were persons not receiving antihypertensive treatment at the health unit.

Instruments

To obtain this information, a data collection matrix was used as an instrument to collect variables related to pharmacological adherence such as age (36-90 years), gender (male and female), level of schooling (no education, first level, second level, third level, and fourth level), marital status (single, free union, married, divorced and widowed), occupation (housework, agriculture, merchant, carpentry, mason, other), language (Spanish or Kichwa), ethnicity (indigenous, mestizo, white, Afro-American), residence (urban and rural), drug adherence (compliant - non-compliant), drug treatment (losartan, enalapril, amlodipine, atenolol), side effects (cough, headache, gastritis). Through the review of compliance cards, which will be corroborated with the review of family records and clinical histories.

For the development of this research, we proceeded to request approval from the director of the 03D02 district unit, with which we could proceed to store information from the clinical history of each patient with a diagnosis of arterial hypertension that was within the study sample. A table was then used to collect sociodemographic and clinical characteristics such as age, gender, marital status, educational level, residence, ethnicity, other diagnoses, and compliance with pharmacological treatment.

Statistical analysis

Statistical analysis was performed using absolute and relative frequencies. Subsequently, a bivariate analysis was performed using the Chi-square test (x2) between sociodemographic variables, clinical variables, antihypertensive treatment, and treatment time.

Ethical Considerations

Nowadays, the role of the nurse in programs aimed at intervention and disease prevention for the individual, family, and community is significant to promote self-care for the health and well-being of the population.

The present study aimed to determine compliance with antihypertensive drug treatment in adults attending the Suscal Health Center. By reviewing the clinical history of the patients under study.

The information collected was kept confidential and was for the exclusive used of the research, which is based on the ethical principles of Autonomy, Beneficence, Non-maleficence, and Justice.

The confidentiality of the information obtained was guaranteed, and the processing and interpretation of the data were handled only by the researcher and the advisor.

Once the study was completed, it will be published as a scientific article in a journal of interest. This research was advised from the beginning to the end by a professor of the master's program of the Catholic University of Cuenca with ample knowledge about research.

Results

TABLA1

Table 1. Sociodemographic characteristics, treatment variables and antihypertensive compliance.

		f	%
Sex	*Female*	*78*	*65*
	Male	*42*	*35*
Residence	*Rural*	*76*	*63*
	Urban	*44*	*37*
Instruction	*With studies*	*55*	*46*
	Without studies	*65*	*54*
Occupation	*Formal employment*	*44*	*37*
	Informal employment	*76*	*63*
Ethnicity	*Indigenous*	*61*	*51*
	Mestiza	*59*	*49*
Language	*Spanish*	*60*	*50*
	kichwa	*60*	*50*
Marital status	*With a partner*	*80*	*67*
	Without a partner	*40*	*33*
Comorbidities	*Cardiorespiratory diseases*	*12*	*10*
	Metabolic diseases	*21*	*18*
	Without comorbidity	*87*	*73*
Antihypertensive treatment	*1 drug*	*85*	*71*
	2 or more drugs	*35*	*29*
Time on treatment	*0 to 5 years*	*64*	*53*
	5 to 10 years	*48*	*40*
	10 or more years	*8*	*7*
Compliance	*No*	*30*	*25*
	Yes	*90*	*75*
Adverse effects	*Digestive Effects*	*42*	*35*
	Neurological Effects	*44*	*37*
	No Effects	*34*	*28*
	Total	*120*	*100*

Prepared by the authors

From the review of the clinical history of 120 patients with a diagnosis of hypertension, the following characteristics were obtained: 78 (65%) were female, 76 (63%) lived in rural areas, 65 (54%) had no education, 76 (63%) were engaged in informal work, 61 (51%) were of indigenous ethnicity, 60 (50%) spoke Spanish and Kichwa, and 80 (67%) had a partner (Table 1).

In relation to the variables of antihypertensive treatment and compliance, we found: 87 (73%) do not have another disease in addition to their baseline diagnosis, 85 (71%) hypertensives take only one medication every day mainly angiotensin II receptor antagonists and ACE inhibitors commonly known as losartan and enalapril, 64 (54%) patients who are diagnosed and treated for hypertension less than 5 years, 90 (75%) if they adhere to antihypertensive drug treatment and 42 (35%) most frequently present digestive disturbances including gastritis, diarrhea or constipation.

TABLA2

Table 2. Analysis of antihypertensive treatment in relation to sociodemographic variables.

Antihypertensive treatment					
		1 drug f(%)	***2 or more drugs f(%)***	***X^2 square***	***p***
Sex	*8y6u89*	*52 (43.3)*	*26 (21.6)*	*8.67 13.71*	*0.0032 0.0002*
	Male	*33 (27.5)*	*9 (7.5)*		
Residence	*Rural*	*57 (47.5)*	*19 (15.8)*	*19.00*	*0.0001*
	Urban	*28 (23.3)*	*16 (13.3)*	*3.27*	*0.0704*
Ethnicity	*Indigenous*	*46 (38.3)*	*15 (12.5)*	*15.75*	*0.0001*
	Mestiza	*39 (32.5)*	*20 (16.6)*	*6.12*	*0.0134*
Language	*Spanish*	*40 (33.3)*	*20 (16.6)*	*6.67*	*0.0098*
	Kichwa	*45 (37.5)*	*15 (12.5)*	*15*	*0.0001*
Instruction	*With studies*	*39 (32.5)*	*15 (12.5)*	*10.67*	*0.0011*
	Without studies	*46 (38.3)*	*29 (24.1)*	*10.24*	*0.0014*
Occupation	*Formal employment*	*31 (25.8)*	*13 (10.8)*	*7.36*	*0.0067*
	Informal employment	*54 (45)*	*22 (18.3)*	*13.47*	*0.0002*
Marital status	*With a partner*	*60 (50)*	*20 (16.6)*	*20*	*0.0001*
	Without a partner	*25 (20.8)*	*15 (12.5)*	*2.50*	*0.0138*
Adverse effects	*Digestive Effects*	*28 (23.3)*	*14 (11.6)*	*4.67*	*0.0308*
	Neurological Effects	*32 (26.6)*	*12 (10)*	*9.09*	*0.0026*
	No Effects	*25 (20.8)*	*9 (7.5)*	*7.53*	*0.0061*
Comorbidities	*Cardiorespiratory diseases*	*0 (0)*	*12 (10)*	*0.00*	*0.0000*
	Metabolic diseases	*0 (0)*	*21 (17.5)*	*0.00*	*0.0000*
	Without comorbidity	*44 (36.6)*	*43 (35.8)*	*79.18*	*0.0001*
Prepared by the authors					

Antihypertensive treatment was associated with sex (p<0.05), the highest percentage was 43.3% (n=52) corresponding to the female sex, residence (p<.05), the highest percentage was 47.5% (n=57) corresponding to people living in the rural area of the canton, ethnicity (p<. 05), the highest percentage was 38.3% (n=46), belonging to users who consider themselves indigenous, language (p<.05), the highest percentage was 37.5% (n=45) corresponding to people who speak Kichwa, education (p<.05), the highest percentage was 38.3% (n=46) corresponding to those with no education, occupation (p<. 05), the highest percentage was 45% (n=45) corresponding to people who are engaged in informal activities such as cattle raising, agriculture, among others, marital status (p<.05), the highest percentage was 50% (n=60) corresponding to those who have a partner, adverse effects (p<0.05), the highest percentage was 26.6% (n=32) corresponding to those who present neurological side effects such as headache and insomnia, and comorbidity (p<.05), the highest percentage was 36.6% (n=44) corresponding to patients who do not present diseases associated with the current one. Each of these sociodemographic and clinical variables pertained to patients consuming a drug as an antihypertensive treatment.

TABLA3

Table 3. Sociodemographic variables in relation to time on antihypertensive treatment.

Antihypertensive treatment time						
		0 to 5 years f(%)	*5 to 10 years f (%)*	*10 or more years f(%)*	*X^2 square*	*P*
Sex	*Female*	*40 (33.3)*	*32 (26.6)*	*6 (5) 2 (1.6)*	*24.31 17.71*	*0.0001*
	Male	*24 (20)*	*16 (13.3)*			*0.0001*
Residence	*Rural*	*49 (40.8)*	*23 (19.1)*	*4 (3.3)*	*40.29*	*0.0001*
	Urban	*15 (12.5)*	*25 (20.8)*	*4 (3.3)*	*15.05*	*0.0005*
Ethnicity	*Indigenous*	*36 (30)*	*19 (15.8)*	*6 (5)*	*22.26*	*0.0001*
	Mestiza	*28 (23.3)*	*29 (24.1)*	*2 (1.6)*	*23.86*	*0.0001*
Language	*Spanish*	*29 (24.1)*	*29 (24.1)*	*2 (1.6)*	*24.30*	*0.0001*
	Kichwa	*35 (29.1)*	*19 (15.8)*	*6 (5)*	*21.10*	*0.0001*
Instruction	*With studies*	*29 (24.1)*	*24 (20)*	*1 (0.8)*	*24.78*	*0.0001*
	Without studies	*35 (29.1)*	*24 (20)*	*7 (5.8)*	*18.09*	*0.0001*
Occupation	*Formal employment*	*25 (20.8)*	*18 (15)*	*1 (0.8)*	*20.77*	*0.0001*
	Informal employment	*39 (32.5)*	*30 (25)*	*7 (5.8)*	*21.50*	*0.0001*
Marital status	*With a partner*	*50 (41.6)*	*26 (21.6)*	*4 (3.3)*	*39.70*	*0.0001*
	Without a partner	*14 (11.6)*	*22 (18.3)*	*4 (3.3)*	*12.20*	*0.0022*
Adverse effects	*Digestive Effects*	*20 (16.6)*	*19 (15.8)*	*3 (2.5)*	*13.00*	*0.0015*
	Neurological Effects	*24 (20)*	*16 (13.3)*	*4 (3.3)*	*13.82*	*0.0010*
	No Effects	*20 (16.6)*	*13 (10.8)*	*1 (0.8)*	*16.29*	*0.0003*
Comorbidities	*Cardiorespiratory diseases*	*5 (4.1)*	*5 (4.1)*	*2 (1.6)*	*1.50*	*0.0324*
	Metabolic diseases	*8 (6.6)*	*12 (10)*	*1 (0.8)*	*8.86*	*0.0119*
	Without comorbidity	*51(42.5)*	*31(25.8)*	*5 (4.1)*	*36.69*	*0.0001*

Prepared by the authors

Time on antihypertensive treatment was associated with sex ($p<0.05$), the highest percentage was 33.3% (n=40), corresponding to the female sex, residence ($p<0.05$), the highest percentage was 40.8% (n=49) rural, ethnicity ($p<0.05$), the highest percentage was 30% (n=36) indigenous, language ($p<0.05$), the highest percentage was 29.1% (n=35), corresponding to those who speak Kichwa, education ($p<0.05$), the highest percentage was 29.1% (n=35) corresponding to those with no education, occupation ($p<0.05$), the highest percentage was 32.5% (n=39), corresponding to those who are engaged in informal activities, marital status ($p<0.05$), the highest percentage was 41.6% (n=50), corresponding to those who have a partner, adverse effects ($p<0.05$), the highest percentage was 20% (n=24) corresponding to neurological side effects, comorbidities ($p<0.05$), the highest percentage was 42.5% (n=51), corresponding to those who do not have another disease. The association of both clinical and sociodemographic variables corresponds to patients receiving treatment for less than 5 years.

Discussion

The data found in the study allow us to affirm according to the sociodemographic variables that of the 120 patients with a diagnosis of arterial hypertension 65% are female and 63% reside in the rural area, 54% have no education, 63% are engaged in informal work, 51% are of indigenous ethnicity, 50% speak Spanish and Kichwa, 67% have a partner. Similar data were obtained by Rojas et al., 2018 [18] whom observed that the female sex was the most prevalent, black ethnicity predominated, according to the habits it is observed that the associated factors were drinking alcoholic beverages, sedentary, obesity or overweight. On the other hand, Zubeldia et al., 2016 [19] in their population-based study in 413 men and 415 women, the prevalence of hypertension of 38.2%, 40.7% male sex, the associated factors were overweight, obesity, and suffering from diabetes mellitus. While, Veg et al., 2018 [20] determined that the prevalence rate of HT was 111.5 × 103. White ethnicity predominated, the age group between 45-59 years, with no sex differences. Risk factors were salt intake, coffee, sedentary lifestyle, and smoking, and obesity.

Regarding the variables of antihypertensive treatment and compliance, it was found that 73% have AHT as a baseline diagnosis, 71% of hypertensive patients take only one medication among them losartan and enalapril, 54% of patients were diagnosed and receive treatment less than 5 years, 75% have adherence to pharmacological treatment, 35% present more frequently digestive alterations among them gastritis, diarrhea, or constipation. Similarly, Conte et al., 2016 [21] mentions in their study of 1,200 people 91% suffer from some type of disease and take several medications, 40% did not comply with the ordered pharmacotherapy. Within this framework Pomares et al., 2016 [22] describe in his study that the predominant age group was over 60 years old, female, and with a higher level of schooling, the time of evolution of the disease was over 10 years. It should be noted that the population studied showed partial adherence to treatment.

Torres 2018 [23] evaluated the risk factors associated with non-adherence to pharmacological treatment in hypertensive patients, the results were the average age of 69.5 years; the most prevalent sex was female; married marital status, primary education and with more than 2 years of pharmacological treatment, pointing out as risk factors for non-adherence to antihypertensive pharmacological treatment the female sex and the deficit of knowledge about HTA. On the other hand, Jarquin et al., 2020 [24] assessed the relationship between factors and adherence to antihypertensive treatment. The results were: prevalent male sex, 41 to 45 years of age, urban area origin, married, evangelical religion, high school academic level, security guard occupation. The factors influencing adherence to antihypertensive treatment were occupation, sedentary lifestyle, feeling of well-being, forgetting to take the drug, and adverse drug reactions.

Compliance with antihypertensive treatment was associated with female sex, rural residence, indigenous ethnicity, Kichwa language, no education, occupation informal activity such as livestock farming, agriculture, among others, marital status, adverse effects at the neurological level such as headache and insomnia, and comorbidity patients who do not have diseases associated with the current one. Each of these sociodemographic and clinical variables pertains to patients consuming a drug as an antihypertensive treatment. Similarly, Quintana et al., 2009 [25] determined that 37.4% of hypertensive patients had pharmacological adherence and it was favorably related to age, sex, schooling, physical activity, living in the company, adequate diet, and regular attendance to consultations. On the other hand, Jiménez et al., [26] described that 58.8% of hypertensive patients without adherence to pharmacological treatment were related to the following factors: incorrect follow-up, inadequate prescription, and professionals with deficient knowledge.

Antihypertensive drug adherence according to the length of treatment was associated with the variables female sex, rural indigenous residence, Kichwa language, no education, occupation informal activity, marital status, partner, adverse effects at the neurological level, comorbidities, and no other disease. The association of both clinical and sociodemographic variables corresponds to patients receiving treatment for less than 5 years. Similarly, Avila et al., 2019 [27] determined in their study that being older than 60 years, female gender, married marital status or having a spouse, income level, unemployment, education level, number of medications, time of the disease, beliefs, attitudes, and attributions about health, doctor-patient relationship, and the factor access to health services are directly related to adherence to treatment of HTN. Like Asto 2018 [28] points out that low adherence to treatment is significantly associated with female sex, age over 65 years, incomplete primary education, single marital status, taking only one type of drug, and treatment time of less than 5 years.

In summary, adherence is important in the treatment of chronic diseases such as HT, whose control is increasingly close due to the relationship it has, not only on the cardiovascular disease but also on the patient's knowledge of the disease. The decrease in adherence to treatment should be a cause for concern, verification, and analysis.

Conclusions

The adherence to treatment found was high with 75% who do adhere to antihypertensive pharmacological treatment, and the factors that were statistically associated with adherence to treatment were female sex, rural residence, indigenous ethnicity, Kichwa language, instruction have no studies, occupation informal activity such as livestock, agriculture, among others, marital status have partner, adverse effects at the neurological level as headache and insomnia and comorbidity patients who do not have diseases associated with the current.

The sociodemographic and economic characteristics were similar to the profiles found at the national level and, as are the age range for the risk of complications international studies on chronic diseases, the prevalence of risks, and the number of hospitalizations. The importance of pharmacological adherence in arterial hypertension should be strengthened, with activities that include frequent explanation and education of the patient about the importance of not suspending the treatment, even if he/she does not feel symptoms and signs of the pathology or feels well.

On the other hand, it would be interesting to conduct empirical studies in older adults on the fear of COVID-19 in the face of the health emergency due to the COVID-19 pandemic both in confinement, estrangement, and vaccination stage in various populations [29,30, 31] related to emotional [32] and educational [33,34,35] aspects.

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Conflict of Interest

There are no personal, professional, or other conflicts of interest.

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