

Clinical-epidemiological characteristics and medical record analysis of patients with systemic arterial hypertension in primary health care

Características clínico-epidemiológicas e análise dos prontuários de pacientes com hipertensão arterial sistêmica na atenção primária em saúde

Randerson José de Araújo Sousa¹, Adriana Vanessa Ribeiro Mafra², Tainara Silva homaz³, Maria Juliana Martins Souza⁴, Clara Serique Massaranduba e Silva⁵, Christian iniz Lima e Silva⁶, Ligia Amaral Filgueiras⁷

ABSTRACT

We aimed to analyze information on patients with SAH from their medical records and describe the clinical-epidemiological profile. It is a cross-sectional, retrospective research and the collection site was primary health care, with the medical records being the source of data. Of the 500 records, 482 were evaluated and more than half of the records (67.8%) were from women, who were younger than men (63.5 | 13.6 vs 66.5 | 12.0, $p < 0.020$) and significantly more overweight and obese (23.9% vs 15.4% / 31.5% vs 9.3%, $p < 0.10$). We observed a predominance of elderly people (67.8%), men with higher systolic blood pressure (129.2 | 19.0 vs 133.1 | 20.7, $p < 0.016$) and 58.2% of the sample without blood pressure control. We noticed 15.7% had other chronic diseases and the most prevalent cardiovascular events were brain stroke (Acidente Vascular Encefálico – AVE in portuguese) (26.5%) and acute myocardial infarction (AMI) (20.6%). No deaths from SARS-CoV-2 were identified. Our sample presented risk factors that increase the possibilities of unpleasant cardiovascular events and outcomes. Furthermore, the analysis of all items revealed flaws in the preparation of records, as well as it is likely that there are patients using antihypertensive medication without having in fact persistently high blood pressure levels.

Keywords: Medical Records, Systemic Arterial Hypertension, Basic Health Care, Amazon.

RESUMO

Objetivamos analisar as informações de pacientes com HAS a partir do seu prontuário e descrever o perfil clínico-epidemiológico. É uma pesquisa transversal, retrospectiva e o local de coleta foi a atenção primária à saúde, sendo os prontuários a fonte de dados. Dos 500 prontuários, foram avaliados 482 e mais da metade dos prontuários (67,8%) foram de mulheres, sendo elas mais novas que os homens (63,5 | 13,6 vs 66,5 | 12,0, $p < 0,020$) e significativamente com mais sobrepeso e obesidade (23,9% vs 15,4% / 31,5% vs 9,3%, $p < 0,10$). Observamos predominância de idosos (67,8%), os homens com maior pressão arterial sistólica (129,2 | 19,0 vs 133,1 | 20,7, $p < 0,016$) e 58,2% da amostra sem controle pressórico. Percebemos que 15,7% tinham outras doenças crônicas e os eventos cardiovasculares mais prevalentes foram o AVE (26,5%) e o IAM (20,6%). Não se identificaram óbitos por SARS-CoV-2. Nossa amostra apresentou fatores de risco que aumentam as possibilidades de eventos e desfechos cardiovasculares desfavoráveis, além disso, a análise de todos os itens evidenciou falhas na elaboração dos registros, assim como, é provável que existam pacientes fazendo uso de medicação anti-hipertensiva sem terem de fato níveis pressóricos persistentemente elevados.

Palavras-chave: prontuário, hipertensão arterial sistêmica, atenção básica de saúde, Amazônia.

¹ Postgraduate Program in Clinical Medicine, Federal University of Rio de Janeiro (UFRJ), Faculty of Medicine, State University of Pará (UEPA). ORCID: <https://orcid.org/0000-0003-3723-8955>.

E-mail: rajoarso@gmail.com

² Faculty of Medicine, State University of Pará (UEPA). ORCID: <https://orcid.org/0000-0001-6014-7715>.

³ Bachelor of Nursing, State University of Pará (UEPA). ORCID: <https://orcid.org/0000-0001-5080-745X>.

⁴ Faculty of Medicine, State University of Pará (UEPA). ORCID: <https://orcid.org/0000-0001-9670-1386>.

⁵ Faculty of Medicine, State University of Pará (UEPA). ORCID: <https://orcid.org/0009-0001-5108-2881>.

⁶ Bachelor of Pharmacy. Faculty of Medicine, State University of Pará (UEPA). ORCID: <https://orcid.org/0000-0002-0359-9309>.

⁷ PhD. Professor at the State University of Pará (UEPA). ORCID: <http://orcid.org/0000-0001-8845-8654>.

1. INTRODUCTION

Systemic Arterial Hypertension (SAH) is a chronic, non-communicable disease, related to cardiovascular disorders and is the result of multiple factors, such as genetic, social and environmental characteristics, with the clinical picture being determined by the verification of blood pressure levels at which systolic blood pressure is ≥ 140 mmHg and/or diastolic blood pressure is ≥ 90 mmHg, measured in two different situations, applying the correct measurement technique and without the patient using antihypertensive medication.¹

Hypertension is one of the main causes of premature deaths (< 70 years), ranking first in 2019 and it is estimated that more than 1.13 billion people in the world have hypertension and around two thirds of cases are concentrated in underdeveloped countries.² SAH increases the risk of developing comorbidities, such as: heart failure, chronic kidney disease and cerebrovascular diseases, which requires urgent adjustments to health services.³

According to data made available in 2015 by the WHO, the proportion of hypertensive patients in relation to sex is 1 in 4 men and 1 in 5 women². Regarding global estimates, less than a fifth of the population with SAH has the disease under control and, in view of this, a global commitment was made called the Global Combating Plan for Chronic Noncommunicable Diseases, with the aim of reducing SAH cases by 25% in the period from 2015 to 2025.^{4,2}

In Brazil, there are more than 35 million people with high blood pressure and data show an increasing trend in the coming years.⁵⁻⁶ This problem has become a national public health issue⁷ due to the number of patients, the time taken to diagnose the disease, which is generally late, and the burden on public coffers caused by the great demand for care addressed, mostly, to the Unified Health System (Sistema Único de Saúde – SUS in portuguese).^{5,8}

In this sense, upon being received at SUS, mainly within the scope of Primary Care (Atenção Primária – AP, in portuguese,), the patient's clinical and follow-up record is carried out in the medical record, whether electronic or commonly on paper, this document being unique and in which the personal information of the individual, their reported signs and symptoms, prescribed treatments, requested and evaluated exams, comorbidities, as well as general guidelines regarding all care provided during follow-up in the healthcare environment.⁹⁻¹⁰⁻¹¹

Recording this information is important, as collecting and knowing about the patient's lifestyle and risk habits allows for a more assertive adaptation of the multidisciplinary team, becoming an indispensable tool in the agile and correct management of the patient in the short and long term¹², not to mention that these documents, in addition to recording the clinical history, serve as legal support, making it, therefore, vital to complete them correctly, although this is still challenging.¹³

This research aimed to analyze the information contained in the medical records of patients with SAH, in order to verify how basic information about the patient is filled in and describe the clinical-epidemiological profile based on the records.

2. MATERIALS AND METHODS

This is a cross-sectional, retrospective research with a descriptive approach using data collected from medical records of patients with SAH, developed in the city of Santarém, state of Pará, Brazil. The collection sites comprised three primary health care units, all located in the urban area, with the following number of registered patients, respectively: Santo André Basic Health Unit (128 patients), Maracanã Family Health Unit (367 patients) and Santana Health Center (450 patients).

In each health unit, the sample size, with a confidence level of 95% and a margin of error of 5%, was: Santo André Basic Health Unit: 97 medical records; Maracanã Family Health Unit: 191 medical records and Santana Health Center: 212 medical records. In this sense, the final sample corresponded to 500 medical records, selected randomly.

From the medical records obtained to compose the sample, the following information was extracted and recorded on a pre-established form: year of birth, race/color, gender, height and weight (two last recorded measurements) to calculate the average body mass index (BMI). – kg/m², office blood pressure values (two last recorded measurements) systolic (SBP) and diastolic (DBP), laboratory tests, medications, clinical complications, history of infection and records of sequelae caused by SARS-CoV-2, other chronic diseases and pathological conditions.

In the survey, records of pregnant women and non-hypertensive patients were excluded. All data collected corresponded to the two-year interval (2019-2021), except for the variables “clinical complications”, “other chronic diseases” and “pathological conditions”,

which comprised the entire history documented until 2021. After reviewing the forms, those that did not contain gender and date of birth were disregarded.

For statistical analysis, SPSS 26.0 software was used. Normality was verified using histogram and Q-Q graph. Categorical variables were expressed in absolute numbers and percentages and compared using the Chi-Square test. Continuous variables were expressed as mean numbers and standard deviation and compared using the Student's T test for two independent samples (normal distribution) and the Mann Whitney test (asymmetric distribution). For all tests, the level of statistical significance considered was 5% (p -value < 0.05).

The computerized data did not contain the identity of the patients and the technical team – doctors, nurses, nursing technicians, dentists – only the name of the health unit where they were collected. This study was approved by the ethics committee of the State University of Pará, under 4.589.140.

3. RESULTS

Of the 500 records, 18 were disregarded after the review, therefore 482 records were evaluated. More than half of the records (67.8%) were from women, who were younger than men (63.5 | 13.6 vs 66.5 | 12.0, $p < 0.020$) and in the distribution by age range, we observed a predominantly elderly sample (67.8%), with the 60 + 70 year-old class concentrating more hypertensive patients (32.6%) (Figure 1).

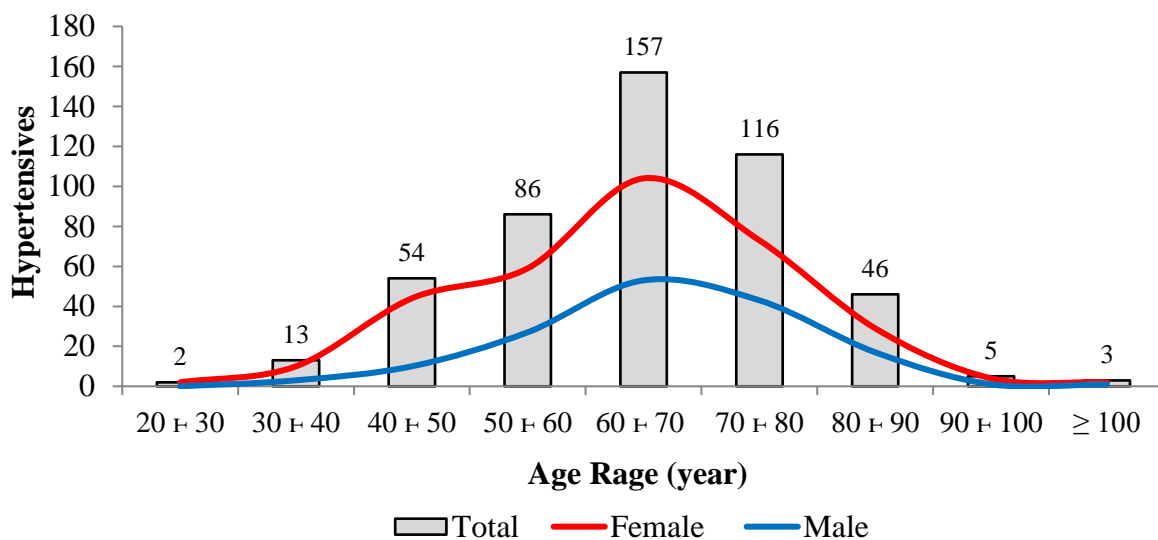


Figure 1: Distribution in absolute numbers of data on patients with systemic arterial hypertension by age group, collected in medical records from three basic health units in the city of Santarém, Pará, Brazil.

Regarding race/color, 64.9% of the medical records did not contain this information. The height and weight of hypertensive patients were not recorded in 17% and 1.45% of the medical records respectively, which made it impossible to calculate the BMI in 17.6% of the patients. However, the BMI was calculated at 82.4% and we identified an obese population, with women showing a statistically greater body mass than men (25.1 | 12.4 vs 22.5 | 12.2, $p < 0.012$), as well as, by bivariate analysis, they showed a greater association with overweight and obesity (23.9% vs 15.4% / 31.5% vs 9.3%, $p < 0.10$) (Table 1).

Systolic blood pressure was higher among men (129.2 ± 19.0 vs 133.1 ± 20.7 , $p < 0.016$) and 41.7% of hypertensive patients had a SBP $\geq 120 < 140$ mmHg and DBP $\geq 70 < 90$ mmHg, with more than half (58.2%) being outside this blood pressure control target when considering measurements taken in the office. The most prescribed antihypertensive medications, which were recorded in medical records, were the receptor antagonists of angiotensin II (140) and thiazide diuretics (88).

Table 1: Baseline characteristics of patients with systemic arterial hypertension, collected from medical records of three basic health units in the city of Santarém, Pará, Brazil.

Characteristics	Total População (n=482)	Women (n=327)	Men (n=155)
Age Range (years)	64.6 (13.1)	63.5 (13.6)	66.5 (12.0) £
Brown, n(%)	136 (28.2)	82 (17)	54 (11.2)
Weight (kg)	69.6 (18.6)	67.7 (18.7)	73.6 (17.8)
Height (m)	1.28 (0.58)	1,28 (0.54)	1.28 (0.65)
BMI (m ² /kg) ¹	24.3 (12.3)	25.1 (12.4)	22.5 (12.2) #
Overweight, n(%) ²	156 (39.3)	95 (23.9)	61 (15.4) *
Obesity, n(%) ²	162 (40.8)	125 (31.5)	37 (9.3) *
Systolic Blood Pressure (mmHg) ³	130 (19.6)	129.2 (19.0)	133.1 (20.7) ¥
Diastolic Blood Pressure (mmHg) ³	80.2 (12.0)	80.0 (11.9)	80.6 (12.2)

Legenda: £ $p < 0.020$; # $p < 0.012$; * $p < 0.010$; ¥ $p < 0.016$

Values are expressed as absolute numbers and percentages (categorical variables) and mean and standard deviation (continuous variables). In the bivariate analysis, men and women were compared using the Mann-Whitney test (asymmetric continuous variables) and the Chi-square test (categorical variables).

¹ BMI, body mass index / ² Overweight: BMI between 25.1 and 30 kg/m² / Obesity: BMI > 30 kg/m² / ³ BP, blood pressure

Among hypertensive patients, it was noted 15.7% had other chronic diseases that increase cardiovascular risk, of which 93.4% had diabetes mellitus and 5.3% had chronic kidney disease. Furthermore, the most prevalent cardiovascular events were stroke (26.5%) and acute myocardial infarction - AMI - (20.6%). When it comes to SARS-CoV-2 infection, 14 hypertensive patients were registered in this item and of these, 57.1% were positive and reported and 42.9% were just suspected. No deaths were identified.

Other pathologies with greater frequency among hypertensive patients recorded in medical records were heart diseases (22), osteopathies (20), psychiatric (11) and neurological diseases (8). However, in relation to complementary evaluation, the record of 61 different laboratory tests was evidenced and the frequency of those associated with the routine laboratory evaluation of hypertensive patients was: triglycerides (97); blood glucose (95); total cholesterol (88); creatinine (84); HDL (44); uric acid (30); urine test (26); electrocardiogram (12) and potassium (3).

4. DISCUSSION

This research did not carefully evaluate the quality of the records made in the medical records, since this would require the use of validated quality analysis instruments. Therefore, only a feasible description of the variables proposed in the methodology was adopted, which made it possible to find not only problems similar to those reported in the literature, but also to outline the clinical-epidemiological profile of patients with SAH.

The medical record, which is prepared by the health professional, is the property of the patient, who has the right to access and even a copy.¹⁴ In this document, all information related to the individual must be organized and contain: identification, anamnesis, physical examination, diagnostic hypotheses, diagnoses, treatments and all documents related to the provision of clinical care and that are timely for assistance.^{15,12} However, frequent problems are highlighted in the literature, such as the lack of basic information, incoherent, inadequate and illegible records.¹³

This problem was noticed among the 482 records considered. Information ranging from the simplest to the essential was not recorded, such as blood pressure measurement; weight and height measurements; evolutions with illegible handwriting – sometimes done with a brush, which stained the information on the back. Furthermore, there was an excess of acronyms, especially when evaluating laboratory tests when there was only the request,

but not the results, in addition to disorganization, with sheets torn or attached in the wrong order, altering the chronology of care.

Several aspects are related to the inadequate completion of medical records, including the lack of awareness, along with the lack of encouragement for continued education, in addition to factors associated with the technical structure that can impact the quality of information consistent with the care scenario, one of which is work overload, with few professionals for many patients. Thus, a demand compatible with the number and size of health teams would, in part, solve major gaps in documentation of care.¹³

The frequent renewal of the professional staff in health units can also lead to loss or omission of information in medical records, violating the patient's basic right to have their clinical facts correctly documented and preserved, contributing to the discontinuity of care.¹⁶⁻¹⁷ On the other hand, adequate registration allows teaching and research to know the clinical and epidemiological profile of the community, which contributes to the formulation of censuses and more effective proposals for promoting and evaluating the medical care provided.¹⁵

Regarding the epidemiological profile, the prevalence of SAH in females was corroborated by Macedo¹⁸ and Lima¹⁹, reporting 65.5% and 68% of hypertensive women, respectively. The Brazilian Guidelines on Arterial Hypertension – 2020 also showed a higher prevalence among women.¹ At the same time, the high prevalence of overweight and obesity among them, noted in the survey, was also found in the findings of Silva²⁰ who identified, in a study carried out in the legal Amazon, a 40% higher prevalence among overweight hypertensive women and 145% higher among obese women.

These numbers may be associated with physiological hormonal changes, such as the drop in estrogen that precipitates a reduction in basal metabolism and consequent weight gain, in addition to insulin resistance and dyslipidemia, which appear to have an effect on the vasculature²²⁻²³, regarding women's greater perception of diseases, which favors the search for assistance and better adherence to care.^{24,21}

The higher prevalence of hypertension in elderly people ≥ 60 years is in line with the meta-analysis by Picon²⁵, who, when checking the prevalence of hypertension, found a higher occurrence at ages ≥ 60 or ≥ 65 years, approximately 68%. Estimates show the prevalence of hypertension increases with age, therefore, given the growth in life expectancy in Brazil and because elderly are the group most affected by comorbidities, understanding

the characteristics of the prevalence of hypertension is relevant when it comes to the formulation of health policies, to prevent and reduce diseases triggered by high blood pressure levels.²⁶

It was identified men had higher SBP and more than half of the sample was outside the therapeutic target. Silva²¹, also showed this pattern, with women showing lower systolic pressure values [136.6 (21.5) mmHg vs 142.5 (23.5) mmHg]. In contrast, the control of individual blood pressure levels is challenging and insufficient around the world, including Brazil, which in a meta-analysis showed a control rate ranging between 43.7% and 67.5%.²⁷ This trend is due to the fact that SAH is asymptomatic, which complicates adherence to care, especially drug therapy.¹

Nonetheless, in antihypertensive treatment, the most dispensed medications were also reported by Mengue²⁸, who, when verifying access and use of medications for high blood pressure in Brazil, demonstrated that the classes of angiotensin receptor blockade and thiazide-type diuretics were the most prescribed. These medications are made available free of charge to patients within the scope of primary care policies, which places the country as an example of public interventions for chronic non-communicable diseases – NCDs.²⁹

Records were noted that indicated a lack of medication and a diverse or incomplete dispensation of antihypertensives used by patients. In this sense, in addition to knowledge about his/her health condition, which can be offered by the multidisciplinary team, adequate treatment, and this includes the free availability of all medications necessary for assistance, facilitates both the beginning and continuity of treatment, being this absence a major complication when it comes to, for example, hypertensive males, a group that denotes lower adherence to medication use.³⁰

In addition to SAH, other Non-Transmissible Chronic Diseases (NTCDs) were simultaneously detected. This multimorbidity stands out in the spheres of public health for generating overload on health services, such as the supply of medicines for continuous use, specialized medical assistance and hospitalizations, and for impacting the collective, by associating expenses with services necessary for health maintenance.³¹ From this perspective, encouraging prevention, promotion and recovery of health are strategies to improve the quality and increase the life expectancy of people with these diseases.³¹⁻³²

The most frequent clinical complications were: stroke and AMI. In this scenario, Gorgui³³, stated women have a high risk of stroke associated with hypertension, but showed

antihypertensives as relevant in reducing the incidence. Meantime, although in this study the patient's outcome is unknown, especially in the two most recorded complications, the Brazilian Guidelines on Arterial Hypertension¹, presented data related to mortality from these events, with AMI being responsible for 39% of deaths and stroke for 22%.

Cardiovascular disease (CVD) is considered the main cause of death in Brazil and the world and classic risk factors such as dyslipidemia, obesity, physical inactivity, hypertension, family history, smoking and diabetes increase the need for pre-testing for CVD, above all, emphasizing coronary artery disease (CAD), in order to achieve primary and secondary prevention³⁴. Given the complications and multimorbidity that affects part of the sample, it can be suggested that there are patients at “high risk” for cardiovascular events.

Regarding SARS-CoV-2 infection, even with few positive patients according to the records, Yang³⁵, when carrying out a meta-analysis, concluded that hypertension is one of the underlying diseases that may be a risk factor for patients progressing to a serious condition in terms of infection. Lai³⁶, also demonstrated that patients with comorbidities and older people are more likely to develop the severe form compared to mild cases.

In relation to exams, the quantity recorded was not proportional to the number of medical records collected and this leads to the suggestion of several hypotheses, which may include: the patient's own failure to seek care, the failure to record both the request and the evaluation of the exams by the professional, the limitation in carrying out exams imposed by public administration variables, which can weaken the service provided, the absence/turnover of professionals in the units, among others.

Another point not identified in the survey is the diagnosis of SAH and the procedures recommended to monitor BP. The diagnostic method is undefined, but this does not exclude the possibility of patients having carried out the proposed tests and confirmed their diagnosis, even without records. However, it is common practice in health units for the patient to be advised, when high blood pressure levels are suspected, to carry out BP measurements casually or in the office in two shifts, generally for five days and, from this, the professional infers their diagnosis.

Nonetheless, the 6th Ambulatory Blood Pressure Monitoring Guidelines and the 4th Home Blood Pressure Monitoring Guidelines³⁷, state casual or office BP measurement, although it is a procedure used in the analysis of various blood pressure behaviors and in

the monitoring of hypertensive patients, is influenced by several interfering factors, as well as providing a reduced number of measurements, which may not reflect the real behavior of BP, especially in the long term.

5. CONCLUSION

More than half of the sample is made up of women, elderly, obese and who are out of blood pressure control, which predisposes them to a greater likelihood of unfavorable cardiovascular events and outcomes. The analysis of all items highlighted flaws in the preparation of records, which makes the implementation of electronic medical records and the encouragement of continuing education for professionals valid measures to improve the quality of recording, care and follow-up of these patients. Finally, it is likely that there are patients using antihypertensive medication without actually having persistently high blood pressure levels and which confirms chronicity, due to possible errors in the diagnosis.

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