

Hospitalization due to complications of arterial hypertension in primary care patients

Hospitalização por agravos da hipertensão arterial em pacientes da atenção primária

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Abstract

Objective: To determine the prevalence of hospitalizations due to complications of arterial hypertension in individuals in the primary health care network and to identify the associated factors.

Methods: Cross-sectional study including 422 hypertensive individuals, who were randomly and proportionally selected from a municipality in the south of Brazil, considering the number of patients admitted in each basic health care unit. Data were collected from medical records and questionnaires completed by participants in their home.

Results: Some factors associated with hospitalization are modifiable and susceptible to intervention, indicating the need for a differentiated attitude of health professionals towards hypertensive individuals, especially men, the elderly and those who present with comorbidities.

Conclusion: The prevalence of hospitalization in the last 12 months was 12.08% and was found to be significantly higher among men, people aged 60 years or older, those noncompliant with drug therapy and those who presented comorbidities along with uncontrolled blood pressure.

Resumo

Objetivo: Determinar a prevalência de hospitalização por agravos ou complicações da hipertensão arterial em indivíduos tratados na Atenção Primária e identificar fatores associados.

Métodos: O estudo transversal abrangeu 422 pessoas hipertensas de um município do Sul do Brasil, selecionadas aleatória e proporcionalmente, considerando o número de inscritos em cada Unidade Básica de Saúde. Os dados foram coletados nos prontuários médicos e aplicação de questionários nos domicílios.

Resultados: Alguns fatores associados à hospitalização são modificáveis e passíveis de intervenção, indicando a necessidade de atuação diferenciada dos profissionais de saúde junto aos hipertensos, especialmente os do sexo masculino, idosos e que possuam comorbidades.

Conclusão: A prevalência de hospitalização nos últimos 12 meses foi de 12,08% significativamente maior entre os homens, pessoas com 60 anos ou mais, não aderentes à farmacoterapia, que possuíam comorbidades e pressão arterial não controlada.

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Introduction

Systemic arterial hypertension (SAH) is a highly prevalent disease in the adult population and is considered to be one of the most important factors dictating cardiovascular risk. However, despite the remarkable advances in treatment of SAH in the last decades the rates of adequate pressure control remain low in several countries, including Brazil. In addition, individuals with systemic arterial hypertension often seek emergency medical services due to symptoms caused by high blood pressure, which in general results from inadequate ambulatory control.⁽¹⁾

Controlling arterial hypertension is not an easy task, as its chronic-insidious character contributes to non-compliance with treatment.⁽²⁾ In this perspective, estimates indicate that two-thirds of the people utilizing basic health care services do not keep their blood pressure within desirable levels.⁽³⁾ Among these, approximately 30% suffer stroke and 70% develop heart failure, complications that lead to new hospitalizations.⁽⁴⁾ Therefore, it is the duty of the family health strategy team, especially the nurses on the team, to learn the profile of individuals with systemic arterial hypertension who live in the geographic area of their unit who require hospitalization, as well as the factors that contribute to this condition. This information will allow the planning and implementation of more effective interventions and strategies towards improved disease control, with a consequent reduction in hospitalizations, which are considered stressors for both the individual and his/her family, and are also a drain on the government's coffers.⁽¹⁾

The purpose of the present study was to determine the prevalence of hospitalizations due to complications of arterial hypertension in individuals utilizing primary health care services and to identify the associated factors.

Methods

This is a descriptive cross-sectional study developed with 422 individuals with systemic arterial hyper-

tension, receiving ambulatory treatment at primary health care services in a municipality in the south of Brazil.

The size of the studied sample was calculated based on the total number of hypertensive individuals older than 18 years who were registered in 23 basic health care units in the urban area of the municipality (40,073 hypertensive individuals). The prevalence of non-compliance with drug therapy was estimated at 50% so as to assure the maximum variability of the sample to a level of confidence of 95% and an estimate error of 5%, with an addition of 10% for possible losses, which resulted in a sample of 422 people.

In light of the proportional stratification, the number of individuals from each health care service that should be included in the study was defined. A random sampling was applied, with electronic selection, based on the list of patients registered. Inclusion criteria were: individuals aged 18 years or older, who had been using antihypertensive medication for at least one year, and whose medical record included at least five blood pressure measurements in the last 12 months. When the selected person did not meet the inclusion criteria or refused to participate in the study, the following person on the list was invited; this operation was repeated up to three times.

Data were collected between December 2011 and March 2012 by means of medical record analysis to obtain blood pressure levels, as well as semi-structured interviews conducted in the homes of the subjects, including the application of two questionnaires. The first questionnaire contained questions regarding the personal, socioeconomic and health follow-up profile of the individuals, whereas the second was the Questionnaire of Non-Compliance to Drug Therapy developed by the Qualiaids Team to address the act (whether the individual takes prescribed medication and when he/she takes the medication), the process (how he/she takes the medication over a period of seven days) and the results of compliance (in this case, whether the blood pressure was controlled).⁽⁵⁾ The answers resulted in a compound measurement in which compliant individuals were described as

those who reported they had taken at least 80% of the doses prescribed adequately and whose blood pressure was normal at the last measurement (clinical outcome).

Hypertensive individuals with uncontrolled blood pressure were considered to be those who, according to the medical records from the last 12 months, presented with a systolic blood pressure value, in three out of the five last measurements above 140mmHg and/or diastolic blood pressure above 90mmHg.⁽⁶⁾

In analyzing the data, the interviewees were divided into two groups, namely hospitalized and non-hospitalized subjects. The data collected were typed into an Excel Windows 2007® spreadsheet and were later analyzed statistically using the Statistical Analysis System – SAS software®. Pearson's chi square test was used with a significance level of $p < 0.05$ and the Relative Risk (RR) was calculated in order to verify the association of the studied variables with the outcome of interest and the measure of association.

The development of this study complied with national and international ethical guidelines for research involving human beings.

Results

Among the 422 studied individuals, 51 (12.08%) had been hospitalized in the last year due to complications of systemic arterial hypertension, of which the most common complications were hypertensive crisis or pseudocrisis (24 – 47.05%), cardiovascular (23 – 45.10%) and cerebrovascular problems (04 – 7.85%). The characteristics associated with hospitalization were: male individuals, aged 60 years or older, who were noncompliant with drug therapy, and/or who had uncontrolled blood pressure along with the presence of comorbidities (Table 1).

Discussion

The limitations of the results of this study refer to its cross-sectional design, which does not allow the establishment of causal relationships, and to the fact that the primary source of data is the participants themselves, who may be susceptible to subject bias (forgetfulness).

It is possible to state that the proportion of individuals who required hospitalization due to problems resulting from systemic arterial hypertension

Table 1. Distribution of factors associated with hospitalization

Characteristics	Hospitalization		Total n(%)	p-value	RR** (CI***)
	No n(%)	Yes n(%)			
Gender					
Female	228(54.02)	23(5.46)	251(59.48)	0.03*	1.7(1.07 – 2.98)
Male	143(33.88)	28(6.64)	171(40.52)		
Age					
< 60 years	143(34.12)	11(2.64)	154(36.76)	0.03*	2.0(1.05 – 3.64)
≥ 60 years	228(54.41)	37(8.83)	265(63.24)		
Compliance					
Yes	223(52.85)	19(4.50)	242(57.35)	0.00*	2.2(1.33 – 3.76)
No	148(35.07)	32(7.58)	180(42.65)		
Controlled BP					
Yes	204(52.05)	12(3.06)	216(55.11)	0.00*	3.4(1.92 – 5.87)
No	140(35.71)	36(9.18)	176(44.89)		
Comorbidities					
Yes	218 (51.65)	40 (9.49)	258 (61.14)	0.00*	2.3(1.26 – 4.24)
No	153 (36.25)	11 (2.88)	164 (38.86)		

Legend: *significant p-value in Pearson's chi square test; **RR: Relative Risk; ***CI: Confidence Interval

in the last year (12.08%) was lower than that found in studies developed in other Brazilian cities.^(7,8)

It is believed that lower hospitalization rates may indirectly indicate that, in the studied setting, there is early diagnosis, treatment and health education, leading to the control and prevention of systemic arterial hypertension, which contribute to the reduction in morbidity related to the disease.

Regarding the characteristics associated with the outcome of interest (hospitalization), it was observed that older people were hospitalized significantly more often due to complications of the disease than younger adults, which may be related to the fact that they constitute the majority of the studied people; in addition, they have more time to seek health care and they more quickly recognize the need for hospital care.⁽⁷⁾ Hypertensive crises have been increasingly affecting younger adults, a situation that contributes to the development of cerebrovascular complications among the elderly.⁽⁴⁾

The fact that women regularly seek basic health care and present greater compliance to drug therapy could justify the lower hospitalization rates among them.⁽⁹⁾

The question of compliance with recommended treatment deserves special emphasis. The control of blood pressure levels is fundamental to adequate treatment of systemic arterial hypertension. Hypertensive people who comply with drug therapy significantly reduce morbimortality from cerebrovascular diseases, allowing an increase in longevity and quality of life.⁽¹⁰⁾

In this perspective, a study developed in a university hospital with 200 individuals diagnosed with systemic arterial hypertension, seen in emergency and ambulatory units, showed that non-compliance with drug therapy was more frequent among patients seen in the emergency sector (35.0% versus 19.0%), confirming that lower compliance with drug therapy culminates in a greater need for emergency services.⁽¹¹⁾

Another characteristic that has been indicated as influencing the hospitalization of individuals with systemic arterial hypertension is the concomitant presence of other chronic diseases.⁽⁷⁾ In this study, among the 51 individuals who had been hospitalized, 40

(78.43%) reported the existence of another chronic condition, which agrees with the results of another study that was also developed in the south of Brazil in which increased blood pressure levels were associated, among other factors, with the presence of comorbidities, resulting in an increased risk of hospitalization.⁽⁷⁾

Nevertheless, even in light of concomitant chronic diseases, it is worth highlighting that the performance of basic health care services and the professionals working in these settings may reduce hospitalization rates and deaths resulting from complications of these diseases.⁽¹²⁾ Hence, the professional performance of the nurse may help to decrease the general rates of morbimortality, especially if this professional is qualified and motivated to work with the hypertensive population, making these individuals aware of the damage resulting from the lack of blood pressure control.

A study developed in a municipality in the southern region of Brazil, which aimed to evaluate the hospitalization and death rates resulting from cardiac and cerebrovascular diseases before and after the implementation of the family health strategy, showed that despite an increase of 10% in hospitalizations there was a reduction in the coefficients of mortality due to these causes, mainly among the elderly and female populations.⁽¹³⁾ These results justify the investment in the prevention, treatment and control of systemic arterial hypertension, which still constitutes an important challenge to be overcome by the health system and its professionals, since the development and implementation of health promotion strategies aimed at this population remain insufficient.^(14,15)

Considering the results of this study, it is suggested that health professionals from the primary health care network act together with the individual with systemic arterial hypertension to reduce the rates of hospitalization due to complications of the disease, especially in the elderly, men, individuals noncompliant with drug therapy and those who present comorbidities along with uncontrolled blood pressure levels. Therefore, by becoming aware of this profile, the health team is able to design more effective intervention strategies according to the needs of the individuals, leading to an increased

compliance with treatment and an improvement in blood pressure control rates, as well as a decrease in hospitalization due to complications of the disease.

Conclusion

The prevalence of hospitalizations due to complications related to systemic arterial hypertension over a period of 12 months, among individuals under the care of a public primary health care service, was 12.08%. The characteristics found to be significantly associated with hospitalization were: male gender, age 60 years of older, non-compliance with drug therapy and uncontrolled blood pressure levels coupled with the presence of comorbidities.

Collaborations

Barreto MS participated in the conception, project, analysis and interpretation of data, as well as the composition and critical review of the intellectual content. Marcon SS contributed to the conception, analysis and interpretation of data, critical review of the intellectual content and approval of the final version to be published.

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