Emergency Medicine and Trauma Care Journal

Research Article

Pentón CRC, et al. Emerg Med Trauma Care J: EMTCJ-100003.

Behavior of Hypertensive Emergencies in Patients Admitted to the General Teaching Hospital "Mártires del 9 de Apbril" of Cuba

Pentón CRC[1*], Pazos CP[2], Acosta LAS[3], Alemán APA[4], Plaín LD[5], Plain APA[6] and Pérez LR[7]

[1]Instructor Professor, Medical Sciences Branch "Lidia Doce Sánchez". Sagua la Grande, Villa Clara, Cuba

[2]Assistant Professor, Medical Sciences Branch "Lidia Doce Sánchez", Sagua la Grande, Cuba

[3]Department of Anesthesiology and Resuscitation, General Hospital "Mártires del 9 de Abril", Cuba

[4]Assistant Professor, Teaching General Teaching Hospital "Mártires del 9 de Abril", Sagua la Grande, Cuba

[5]General Physician, Teaching Polyclinic "Mártires del 8 de Abril", Quemado de Güines, Cuba

[6]Department of Surgery, "Lidia Doce Sánchez", Sagua la Grande, Cuba

[7]Department of Medicine, "Lidia Doce Sánchez", Sagua la Grande, Cuba

[*]**Corresponding author:** Carmen Rosa Carmona Pentón, Instructor Professor, Medical Sciences Branch "Lidia Doce Sánchez", Sagua la Grande, Villa Clara, Cuba, Tel: +52135543; Email: carmencp@infomed.sld.cu

Citation: Pentón CRC, Pazos CP, Acosta LAS, Alemán APA, Plaín LD, et al. (2019) Behavior of Hypertensive Emergencies in Patients Admitted to the General Teaching Hospital "Mártires del 9 de Apbril" of Cuba. Emerg Med Trauma Care J: EMTCJ-100003.

Received date: 10 July, 2019; **Accepted date:** 15 July, 2019; **Published date:** 22 July, 2019

Abstract

Introduction: hypertensive crises are a set of clinical situations of varying severity and prognosis.

Objective: to characterize the behavior of hypertensive emergencies in patients admitted to the general teaching hospital "Mártires del 9 de Abril" in Sagua la Grande, Cuba.

Method: A cross-sectional descriptive investigation of all grown-up patient, over 18 years of age, of both genders, diagnosed with hypertensive crisis, admitted to the Teaching General Hospital "Mártires del 9 de Abril" of Sagua la Grande, Cuba in the year 2017. The information was obtained through a data collection model of the medical records of patients with hypertensive emergency. The study population consisted of 303 patients who had presented such urgency. No sample was selected.

Results: Male sex prevailed (52.8%) and the age group over 80 years old for both sexes. Prevalence of non-modifiable risk factors, such as age (90.42%) and family history of heart disease (66%) and modifiable factors related to lifestyles, smoking (57.42%), preponderated ischemic strokes (33%) and acute myocardial infarction (26.40%) and, to a lesser extent, aortic dissection (0.66%). Mortality was higher in the male sex (14.85%).

Conclusion: The diseases with the highest incidence were ischemic strokes and myocardial infarction, evidencing a low mortality in relation to survival.

Keywords: Arterial hypertension; Hypertensive crisis; Hypertensive emergency; Mortality; Risk factors

Introduction

Cardiovascular diseases constitute a serious epidemiological problem in the contemporary world [1]. High blood pressure (HBP) has been seen over the years as "the most common of conditions affecting the adult human being, in all latitudes", its incidence, whether direct or indirect, continues to occupy an important place in the indexes of mortality and morbidity of most of the countries of the contemporary world [2]. Control of chronic diseases is a challenge for health professionals. HBP is the most common and perhaps one of the most expensive for the individual, the family and the country [3,4]. Recent data suggest that systemic HBP is the cause of almost 7.1 million deaths worldwide per year. Approximately 1 to 2% of patients with hypertension will develop a hypertensive crisis [2].

The prevalence is estimated that 1/6 of the world population suffers from the disease. The prevalence in Latin America is as follows: Argentina 28.1%, Brazil 30%, Chile 33.7%, Colombia 23%, Mexico 30.8%, Uruguay and Venezuela with 33% [5]. According to the statistical health yearbook in 2016, in Cuba, the prevalence rate of HBP was 219.4 × 1000 inhabitants, Matanzas was the most affected, followed by Havana, Cienfuegos and Villa Clara [6]. HBP is next to smoking and dyslipidemia, one of the three main cardiovascular risk factors to cause ischemic heart disease and stroke, affects approximately 30% of the European adult population and is responsible for almost 7.5 million of deaths per year [2].

Hypertensive crises are a set of clinical situations of varying severity and prognosis. They constitute a reason for frequent consultation in the emergency services, approximately between 1 and 17% of patients with hypertension will develop a crisis throughout their lives, so that their correct identification, focus and therapeutic management is fundamental in our half a day [7]. They represent the most immediate danger for the affected subjects, and on the other hand the most spectacular proof that antihypertensive treatment could save my life. An isolated figure for blood pressure (BP) alone does not define the clinical picture as a hypertensive crisis [8].

Hypertensive emergencies (HE) and hypertensive pseudocrisis or false hypertensive crises are included in the classification of hypertensive crises [9]. HE are defined as acute, important and sustained elevations of the BP that are accompanied by severe structural and functional alterations in the target organs, with a vital commitment for the patient. They require a rapid decrease in BP, not necessarily at normal levels, preferably with parenteral drugs and in a hospital center that allows the continuous monitoring of vital signs [2].

Examples of hypertensive emergencies are: hypertensive encephalopathy, intracranial hemorrhage, acute coronary syndrome (ACS), heart failure with acute pulmonary edema, dissection of the aorta, eclampsia-preeclampsia, and accelerated hypertension. Its therapeutic approach is not exactly the same. Thus, patients with acute extra cerebral injury (eg, aortic dissection, acute pulmonary edema) benefit from an intensive and faster BP decrease. In contrast, in patients with cerebrovascular injury, the goal of BP should be reached more slowly and with monitoring of neurological symptoms. The drugs used are administered intravenously and must be rapid acting, short half-life and easy dosage. Occasionally, intravascular volume replacement is usually necessary to restore perfusion of the target organs affected by the sudden fall of BP at the start of antihypertensive treatment [2].

Motivated by this reality and the high prevalence of hypertension, the objective is to characterize the behavior of hypertensive emergencies in patients admitted to the general teaching hospital "Mártires del 9 de Abril" in Sagua la Grande, Cuba.

Materials and Methods

A cross-sectional descriptive study of all adult patients, over 18 years of age, of both sexes, diagnosed with hypertensive emergency, admitted to the Teaching General Hospital "Mártires del 9 de Abril" in Sagua la Grande, Cuba, between January and December 2017.

The study population consisted of 303 patients who had presented such urgency. No sample was selected. Among the variables studied were: age groups, sex, cardiovascular risk factors present, type of emergency and patient's status at discharge.

For the processing of the information, the EPIDAT statistical program package was used. To determine the differences between the established groups, for deceased and living, the homogeneity test was applied based on the Chi-square distribution. According to the significance value $\alpha = 0.05$ the statistical differences were classified into:

$P \geq 0.05$ not significant

$P < 0.05$ significant

In addition, the percentage was used as a summary measure and a survey prepared for this purpose.

Results

It was found that the highest incidence of the hypertensive emergency was in the group of ages ≥ 80 years. The sex that predominated was male **(Table 1)**.

Age group (years)	Female	Male	Total			
-	No	%	No	%	No	%
20-29	6	4.1	-	-	6	1.9
30-39	3	2.1	-	-	3	0.9
40-49	7	4.8	13	8.1	20	6.6
50-59	11	7.6	27	16.8	38	12.1
60-69	38	26.5	37	23.1	75	24.8
70-79	36	25.1	37	23.1	73	24.5
≥ 80	42	29.3	46	28.7	87	28.9
Total	143	47.2	160	52.8	303	100,0

Table 1: Distribution of patients with hypertensive emergency according to age and sex groups. Teaching General Hospital "Mártires del 9 de Abril". January to December 2017.

As evidenced in **(Table 2)**, cardiovascular risk factors were found in these patients, mostly not modifiable, such as age and family history of cardiovascular disease. Modifiable risk factors were exhibited at the expense of lifestyles such as smoking that was present in 174 patients.

Risk factor	Female	Male	Total			
-	No	%	No	%	No	%
Age ≥ 50	127	88.8	147	91.8	274	90.4
Smoking	76	53.1	98	61.2	174	57.4
Alcoholismo	5	3,4	42	26,2	47	15.5
Dyslipidemia	56	39.1	51	31,8	107	35.3
Mellitus diabetes	60	41.9	58	36.2	118	38.9
Obesity	43	30.0	12	7.5	55	18.1
APF	98	68.5	102	63.7	200	66.0

Table 2: Distribution of patients with hypertensive emergency according to risk factors. Teaching General Hospital "Mártires del 9 de Abril". January to December 2017. FPB: Family pathological background.

In **(Table 3)**, patients were distributed according to the type of hypertensive emergency, the highest percent was represented by ischemic stroke, females predominated, and myocardial infarction prevailing in male sex.

Types of hypertensive emergency	Female	Male	Total			
-	No.	%	No	%	No.	%
Hypertensive encephalopathy	2	1.3	6	3.7	8	2.6
Intracranial hemorrhage	9	6.2	19	11.8	28	9.2

Acute aortic dissection	-	-	2	1.2	2	0.6
Acute myocardial infarction	23	16.0	57	35.6	80	26.4
Acute edema of the cardiogenic lung	28	19.5	12	7.5	40	13.2
Acute renal failure	15	10.4	20	12.5	35	11.5
Severe preclampsia-eclampsia	10	6.9	-	-	10	3.3
Ischemic stroke	56	39.1	44	27.5	100	33.0
Total	143	47.1	160	66.23	303	100.0

Table 3: Patient's distribution according to the type of hypertensive emergency. Teaching General Hospital "Mártires del 9 de Abril". January to December 2017.

The patient's status at discharge is shown in **Table 4**, where a total of 77 deaths are evidenced, mortality was slightly higher in the male sex, although this difference was not significant.

State at discharge	1. Female		Male		Total	
	No	%	No	%	No	%
Alive	111	36.6	115	37.9	226	74.5
Dead	32	10.5	45	14.8	77	25.4
Total	143	47.20	160	52.80	303	100.0
Note: Chi square: 1,316, p>0.05 (not significant)						

Table 4: Patient status at discharge. Teaching General Hospital "Mártires del 9 de Abril". January to December 2017.

Discussion

In the present study, the predominance of males was found, in which several authors describe a progression at younger ages of coronary artery disease compared to females, in relation to the appearance of cardiovascular risk factors and not counting with the protection from the hormonal point of view presented by women through estrogens [1,11-13]. Prevalence of the age group of more than 80 years as in females, not behaving in this way at younger ages of 50 years, although it is important to reflect that 235 patients of the total are included in more than 60 years, it is important to note that in the municipality of Sagua la Grande, which is the area where the study was conducted, the general population is very old with a Rosset index of 26.19, which could explain the high incidence of the disease in these ages. Similar results were found in a study conducted in North America [14], where ages over 60 prevailed, and in contradiction with the present investigation [15], in a study conducted in an intensive municipal area in Centro Habana in 2014, there was a high number of patients in the age range of 40 to 49 years.

Age was highlighted as a non-modifiable risk factor and family history of cardiovascular disease, coinciding with several national and foreign authors [2,16], indicating that the risk of a future cardiovascular event is greater in individuals with a family history of heart disease followed by smoking. This condition is accepted as a risk factor for the development of cardiovascular diseases [17]. In a study conducted in the province of Matanzas, Dr. Achiong Estupiñán et al. Relate the presence of smoking as a factor associated with poor control of cardiovascular disease arterial hypertension [18]. Other risk factors that were found were high glycemia and lipid levels coinciding with several authors [5,19], in the presence of such risk factors for the onset of hypertension, mainly due to the therapeutic adherence in the treatment of diabetes mellitus and dyslipidemias, they constitute the main problem for obtaining a good control of blood pressure and the reduction of chronic complications that this pathophysiological state brings [5]. Either due to educational, socioeconomic factors, quantity of drugs, number of daily doses, age of the patient, cognitive deterioration and evolution. The vast majority of patients with hypertensive emergency have a previous diagnosis of hypertension, and have received some treatment, however, in many of the patients the previous control of the HBP, it has not been correct. Several authors state that the failure or lack of adherence to antihypertensive treatment has been associated with the development of the hypertensive emergency [20].

The highest incidence, according to type of emergency, were ischemic strokes, followed by acute myocardial infarction and acute cardiogenic lung edema, these being the most frequent cardiac emergencies reported as well as other authors [2,21]. The ischemic stroke presented a predominance of the female sex, whereas in the IMA it behaved with a marked superiority of the masculine sex, the authors of the present investigation consider important to emphasize that it is greater the index of smokers and of men who ingest alcoholic beverages and these Risk factors are related to myocardial infarction. With less prevalence, acute renal

failure, intracranial hemorrhage, severe preeclampsia-eclampsia and aortic dissection were observed only in 2 male patients, coinciding with the authors Meszaros and Morocs [22,23], in which the last mentioned is hypertensive emergency less frequent, and most of them are over 50 years of age, since with age there is a lower resistance of the arterial walls.

In the case of severe preeclampsia-eclampsia, a low percentage figure was found in relation to the number of pregnant women who show in a behavioral study of this pregnancy complication of a group of authors [23] this speaks in favor of preconceptional risk control and control of pregnant women since its inception.

The mortality found by this condition was low compared to that found by other authors, which describe a mortality of up to 35%, [23] and a mortality rate of up to 79% per year, [20] mainly due to acute myocardial infarction and acute pulmonary edema [23]. This lower percentage of deaths could be related to early and timely diagnosis, in addition to the antihypertensive treatment used, cardiovascular events related to hypertensive emergencies are fatal situations that require immediate evaluation to avoid visceral involvement, all authors report that the choice of treatment depends on the clinical presentation of the patient. The pharmacological resources for this entity have increased but a deep knowledge of the characteristics of each one is needed to achieve the best results.

The authors of the present investigation consider that a very significant aspect of the care of these patients is to ensure high quality outpatient follow-up, since a large proportion of them will return to the hospital with a recurrent emergency, there must be a connection between the care primary health care and secondary care, through horizontal coordination. Adequate control of blood pressure and therapeutic adherence should be sought as a way to avoid these serious complications of high blood pressure.

Conclusion

The diseases with the highest incidence were ischemic strokes and myocardial infarction. The mortality found by this condition was low compared to that found by other authors. It is important to control arterial hypertension and therapeutic adherence from primary health care, given the importance for Cuban public health of knowledge of these aspects in view of the work of promotion, prevention and rehabilitation carried out by family medicine in the country.

References

1. Poll Pineda JA, Rueda Macías NM, Poll Rueda A, Linares Despaigne MD (2017) Clinical and epidemiologicalcharacterization of patientswith-acutecoronarysyndromeaccording to sex MediSan 21: 3003-3010.
2. Rosas Peralta M, Borrayo-Sánchez G, Madrid-Miller A, Ramírez-Arias E, Pérez-Rodríguez G (2016) Cardiovascular complications of hypertensive crises. RevMedMex Seguro Soc 54: 1567-1574.
3. Pino García A, Álvarez JS, Rodríguez de la Rosa G (2017) Effectiveness of auriculotherapy in primaryhypertension in adultsaccording to traditional diagnosis. Archivo Médico de Camagüey 21: 18.
4. Pérez Caballero MD (2011) The control of arterial hypertension: anun resolved problem. RevCubanaMed 50: 13.
5. KunertAid J (2015) Adherence to antihypertensive treatment in outpatients of an urban hospital. Rev. virtual Soc. Parag. Med. Int 2: 43-51.
6. National Directorate of Medical Records and Health Statistics, Statistical Year book of Health 2016. Havana: Ministry of Public Health 2017.
7. Sobrino Martínez J, Doménech Feria-Carot M, Morales Salinas A, Coca Payeras A (2016) Crisis hipertensivas: urgencia y emergencia hipertensiva. Medwave 18: e6612.
8. Albaladejo Blanco C, Sobrino Martínez J, Vázquez González, S (2014) Crisis hipertensivas: seudocrisis, urgencias y emergencias. Elsevier 31: 132-142.
9. Ponce I (2011) Crisis hipertensiva. RevClínMedFam 4: 1.
10. Mejía A (2016) Muerte Súbita del Adulto de origen cardiovascular. Abordaje Médico Forense Revisión de la Literatura. Rev. cienc. forenses Honduras 2: 31-44.
11. Pemberthy López C, Caraballo-Cordovez C, Gallo-Echeverri S, Jaramillo-Gómez N, Velásquez-Mejía C, et al. (2016) Treatment of older adults with acute coronary syndrome. Rev Colomb Cardiol 23: 514-522.
12. Leenen FH and Schiffrin EL (2010) Control rates of hypertension in North America. Hypertension 56: 571.
13. Naranjo Casañas EA, Fernández Arias MA, Espín Falcón JC (2014) Comportamiento de las crisis hipertensiva en el Área Intensiva Municipal de Centro Habana. Revista Cubana de Medicina General Integral 30: 160-167.
14. Pinto García LJ, Enrique Lobo Cerna F, Andrade-Romero JR, Soriano EV (2017) Caracterización de los factores de riesgo cardiovascular para infarto agudo de miocardio en población Garífuna. Rev Cien t CiencMéd 20: 16-19.
15. Fernández RM (2017) Tabaquismo e Infarto agudo al Miocardio. Rev. chil. enferm. Respir 33: 230-231.
16. Achiong Estupinan FJ, Ramírez EF, MorenoMO, Alfonso León JA (2011) Intervención en hipertensos no controlados pertenecientes a la provincia de Matanzas en el año 2010. RevCubHigEpidemiol 49: 3.
17. Mora Marcial GR, Tamallo KV, Vergara TMR, del Pino BN, Cabrera CG (2017) Adherencia terapéutica en pacientes con algunas enfermedades crónicas no transmisibles. Revista Cubana de Medicina General Integral 36: 3.
18. Mendoza-González C, Rosase M, Estrada CL, Lorenzo JA, Méndez A, et al. (2008) Elevación extrema de la presión arterial (crisis hipertensiva): Recomendaciones para su abordaje clínico-terapéutico. Arch. Cardiol. Méx 78: 74-81.
19. Caldevilla Bernardo D, Pérez JM, Rodenas LMA, Garrote JAD, Herencia JAC, et al. (2008) Hypertensive crises. Revista Clínica de Medicina de Familia 2: 7.
20. Mészáros I, Morocz J, Szlavi J, Schmidt J, Tornóci L, et al. (2000) Epidemiology and clinicopathology of aortic dissection. Chest 117: 1271-1278.
21. Khan IA and Nair CK (2002) Clinical diagnosis and managments perspectives of aortic dissection. Chest 122: 311-28.
22. Cuenca Duque YI, Caballero ZR, Suárez BC, Carballosa YC (2016) Comportamiento de la preeclampsia con agravamiento en gestantes o puérperas en Mayarí 20: 657-666.
23. Vila Córcoles A, Forcadell J, Diego C, Ochoa-Gondar O, Rull E, et al. (2015) Incidencia y mortalidad por infarto agudo de miocardio en la población mayor de 60 años del área de Tarragona. Rev. Esp. Salud Publica 89: 597-605.

Citation: Pentón CRC, Pazos CP, Acosta LAS, Alemán APA, Plaín LD, et al. (2019) Behavior of Hypertensive Emergencies in Patients Admitted to the General Teaching Hospital "Mártires del 9 de Apbril" of Cuba. Emerg Med Trauma Care J: EMTCJ-100003.