


Chapter 126

Hypertensive crisis in hospital emergency and urgent care: how to care?

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ABSTRACT

The hypertensive crisis is one of the complications of arterial hypertension, characterized by a sudden increase in blood pressure, with the possibility of damage to target organs, which increases the risk of death. This article aimed to analyze the care provided to hypertensive crisis in urgent and emergency care through scientific production. This is a bibliographic review. The selection of works for this review was based on bibliographical research carried out in scientific production indexes (BIREME, LILACS, SCIELLO) with the descriptors hypertensive crisis, urgent and emergency care in hypertensive crisis, full scientific articles and published abstracts were chosen. This study focused on the hypertensive crisis, showing the importance of emergency care, the risk factors associated with the crisis, the common characteristics and the clinical conditions presented. It then becomes necessary to disseminate guidelines for the care of hypertensive crises, thus providing better quality care, without complications and unnecessary expenses.

Keywords: Hypertensive Crisis; hypertensive emergency; hypertensive urgency.

1 INTRODUCTION

The hypertensive crisis is one of the complications of arterial hypertension, characterized by an abrupt, inappropriate, intense and symptomatic increase in blood pressure, which may cause damage to target organs (brain, heart, kidneys and arteries), which increases the risk of death. In a hypertensive crisis, what commonly occurs is an increase in diastolic blood pressure of an average of 120mmHg. However, in

specific cases, such as acute glomerulopathies and pregnancy toxemia, an increase in diastolic blood pressure of around 100 to 110 mmHg may occur (MARTIN et al., 2004).

Arterial Hypertension (AH), in turn, is a multifactorial dysfunction characterized by sustained elevation of blood pressure levels greater than or equal to 140/90 millimeters of mercury (mmHg). It is often associated with metabolic disorders, functional and/or structural changes in target organs (MARCIANO, 2021). AH is an important risk factor for coronary heart disease and ischemic and hemorrhagic stroke. One of the global targets for noncommunicable diseases is to reduce the prevalence of hypertension by 33% between 2010 and 2030 (WHO, 2021).

According to the Brazilian Guidelines on Arterial Hypertension, the hypertensive crisis is characterized by a sudden increase in blood pressure (BP) usually associated with symptomatic manifestations, and can be divided into Hypertensive Emergency (HE) and Hypertensive Urgency (HU) (BARROSO et al. al., 2021). The emergency occurs when there is damage to the target organs, and imminent risk of death, which requires a rapid reduction in blood pressure, in a matter of minutes, whereas in hypertensive urgency there is no immediate risk of death, and a gradual decrease in pressure may then occur, in a matter of hours (MARTIN et al, 2004).

Because it is characterized as urgent/emergency care, the main objective of the treatment is to avoid damage to target organs as a result of the progression of the complication, minimizing the risk of consequences to the body and even death. Furthermore, the choice of drug therapy depends on the underlying causes of the crisis, cardiovascular risk and associated comorbidities (MALOBERTI et al., 2018).

According to Guedes et al., (2005), with the elevation of blood pressure, there are signs and symptoms such as: severe headache, feeling of malaise, anxiety, agitation, dizziness, chest pain, cough, shortness of breath, visual and vaso spasms.

For Feitosa-Filho et al., (2008), among all visits to the emergency room, 3% of them are due to an imminent increase in blood pressure. Among these cases, it is estimated that 1 to 2% are hypertensive people who presented a set of signs and symptoms associated with an unexpected increase in blood pressure (BP) that resulted in emergency care.

Thus, the number of cases of hypertension has dropped since 1940. Until then, arterial hypertension was not considered a pathology that could trigger major complications, on the contrary, it was seen as a component of circulation, responsible for forcing the blood through the sclerotic arteries to the various tissues. In 1940, the adoption of drug therapy for patients with hypertension began, reducing morbidity and mortality (FRANCO, 2002).

Currently, systemic arterial hypertension (SAH) has reached approximately 15 to 20% of the Brazilian population, being classified as one of the cardiovascular risk factors. Although there are a variety of therapeutic measures for the chronic treatment of the disease, adequate SAH control rates are lower than

expected, with a high demand for urgent and emergency care for patients suffering from a hypertensive crisis (MONTEIRO JÚNIOR et al., 2008).

Within this perspective, the present study is justified by the fact that in the first contact with the emergency team, in the triage, the classification of the service occurs, according to the need and severity. If an error occurs at this point, the entire subsequent process will be compromised. The study aimed to analyze the care provided to the hypertensive crisis in urgent and emergency care through previously published scientific production.

2 METHODOLOGICAL PROCEDURES

The study was a bibliographic review, which, according to Cerco and Bervian (1983), aims to gather, analyze and discuss information from already published documents, aiming to theoretically substantiate a certain theme. The selection of articles was based on bibliographical research carried out in the Virtual Health Library database (BIREME, LILACS, SCIELLO) with the descriptors hypertensive crisis, hypertensive pseudocrisis, urgent and emergency care. The chosen articles were: complete scientific articles and published abstracts. Data collection was carried out in two moments: the first moment occurred on June 20, 2010, in which articles and materials regarding the methodology and the hypertensive crisis were selected. The texts supported the construction of the Introduction and Methodology of this article. The second moment was in January 2011, in which the Results and Discussion were built using articles that address the assistance of the health team in the care of hypertensive crises. Other literatures were also used that complete the theme, which were not available in the Virtual Health Library.

3 RESULTS AND DISCUSSION

Among the articles found and chosen for the development of the study, some of them were published in the Revista Brasileira de Cardiologia, all of which were authored by medical professionals, cardiologists, nephrologists, nurses and nursing students. It is observed that these are recent studies, considering that the period of publication was between 2001 and 2009. The hypertensive crisis can be classified into two distinct clinical pictures, the first mild or moderate, presenting symptoms such as dizziness, headache and tinnitus, without target organ damage, this hypertensive crisis is called hypertensive urgency (IV BRAZILIAN GUIDELINES ON HYPERTENSION, 2004). The second clinical form, occurring with the possibility of damage to target organs, the symptoms are more intense, and dyspnea, precordial pain, coma and even death may occur, resulting in a hypertensive emergency. In this way, the emergency physician or the nursing professional must differentiate between these two situations to decide which is the best conduct in the face of the situation witnessed (FEITOSA-FILHO et al, 2008).

Feitosa-Filho et al. (2007), when evaluating the characteristics of patients arriving at the Emergency Unit, concluded that most of them were young, male, smokers and with constant alcohol consumption, and 1/3 had no previous history of hypertension .

The change in blood pressure may appear with inadequate elevation of circulating levels of substances responsible for vasoconstriction of the arteries (norepinephrine, angiotensin or vasopressin), which leads to an increase in systemic vascular resistance. As a result, shear forces trigger endothelial damage followed by fibrin and platelet damage. In the cases of patients with chronic hypertension, this process triggers milder alterations, since, due to the chronicity of the disease, the vascular system has undergone alterations such as remodeling or hypertrophy, which expands the limit of self-regulation of blood circulation and allows the adequacy of target organs to high pressure levels (GUASQUES; ROLANDI; CESARINO, 2008).

According to Franco (2002) the clinical manifestations of the hypertensive crisis are quite nonspecific: headache, nausea and vomiting, vertigo, shivering, along with increased pressure, which will vary from case to case. The pressure level does not necessarily need to be very high to characterize a hypertensive emergency. A blood pressure of 160/100 mmHg in an adolescent with glomerulonephritis may develop hypertensive encephalopathy, or with the same pressure level, a pregnant woman with edema and proteinuria may have a seizure resulting from eclampsia, both pathologies classified as a hypertensive emergency. Often, even with a very high blood pressure level, it is not characterized as a hypertensive emergency, as in the case of an asymptomatic elderly person with no risk of target organ damage. For this reason, the approach to the patient's clinical conditions requires a precise assessment; the anamnesis consists of gathering the necessary information to characterize the crisis and outline the indicated treatment (GUASQUES; ROLANDI; CESARINO, 2008).

However, the essential topics in the anamnesis are current symptoms, pre-existing hypertension and hypertensive crises, neurological manifestations, symptoms of renal impairment and medications and drugs in use (PRAXEDES et al., 2001). The physical examination is carried out to obtain data on the clinical picture, being oriented towards the verification of damage to the target organs, using the technique of palpating the pulse in the limbs, cardiac and pulmonary auscultation to verify murmurs, gallops and congestion. The examination of the fundus of the eye is essential in cases of suspected hypertensive crisis (FEITOSA-FILHO et al., 2008).

For Franco (2002) the examination of the fundus of the eye looks for visible changes, thus not needing the use of vasodilator eye drops, since they may cause a glaucoma crisis, if the person has this pathology or even cause changes that will make the neurological analysis of the eye difficult. patient. Complementary exams are of paramount importance for the evaluation of the hypertensive condition and for the identification of Organs affected organs. The urine test will delimit the existence of proteinuria and hematuria, the chest X-ray will investigate the heart area and possible pulmonary congestion and the electrocardiogram will show some hypertrophy overload, arrhythmias and conduction disorders. These tests will be classified according to the analysis performed in the anamnesis and physical examination (PRAXEDES et al., 2001). After classifying the case as hypertensive urgency or emergency, specific complementary exams are performed for each pathology. The treatment must be started, evaluating the

duration time, tracing goals and establishing the intensity of the pressure to be reached (GUASQUES et al, 2008; PRAXEDES et al, 2001).

Within this perspective Martin et al. (2004) carried out a retrospective study in the emergency department of a university hospital, analyzing the medical records of the patients treated. Patients with hypertensive crisis totaled 452, representing 5% of all clinical surgical care, including 273 urgent and 179 hypertensive emergencies. The identified risk factors related to hypertensive crises were smoking and diabetes mellitus.

Hypertensive pseudocrisis occurs constantly in emergency care. What differentiates these patients is that despite the change in blood pressure levels, when evaluated with complementary tests, there are no signs of rapid damage to target organs, nor imminent risk to life. These patients commonly have a past history of hypertension, but are in default with the disease control treatment, which leads to increased pressure. What can also lead to a transient increase in blood pressure and the occurrence of these pseudocrises are factors such as: some emotional, painful event, or discomfort such as migraine, dizziness, headaches and manifestations of panic syndrome (PRAXEDES et al., 2001).

Therefore, when carrying out a study on the prevalence of pseudohypertensive crisis, Sobrinho et al. (2007) compared data from public and private hospitals and concluded that among the 110 patients studied, 48% had hypertensive pseudocrisis, with most of them concentrated in the private service (59%). Among hospitals, the frequency of diagnostic errors in relation to hypertensive crisis is similar, around 94% in the public service and 95% in the private service. Innovations in pharmacological therapies for hypertension make acute reductions in blood pressure possible, but the need to reduce pressure must be taken into account, without, however, compromising blood perfusion to target organs (FRANCO, 2002).

Thus Guasques, Rolandi and Cesarino (2008) and Praxedes et al. (2001) state that mean arterial pressure should be reduced by a maximum of 25%, compared to previous levels. A safe and practical way to reduce pressure is not to immediately reduce diastolic pressure to levels below 100 mmHg. The treatment must be continuously monitored, considering the possibilities of complications such as cerebral or coronary hypoflow, and any sign of complications requires a reassessment of the doses and medications used. The classification of the case into hypertensive urgency, hypertensive emergency and hypertensive pseudocrisis are of paramount importance for the choice of drug therapy. Monteiro Junior et al. (2008) in their study carried out in an emergency room, found that the medical conduct regarding the choice of adequate therapy according to the classification of cases, was correct in 42% of cases, being inadequate in more than half of the consultations, the author emphasizes the occurrence of inappropriate use of antihypertensive drugs for patients who did not have a hypertensive crisis and justifies this event by the lack of standardization of care for people with arterial hypertension. The hypertensive crisis is part of the routine of clinical emergency centers, therefore, the entire team must be trained in the correct identification of the condition presented to deal with these cases. the healthcare team. It can be differentiated whether it is an emergency or a hypertensive urgency, through a careful clinical history, objective and rigorous examination that includes

a neurological examination with fundoscopy performed by a specialist physician, palpation of the peripheral pulses and carrying out adequate complementary diagnostic tests, as it depends on the strategy and therapeutic approach.

The hypertensive crisis presents controversies mainly related to the correct diagnosis, the differentiation between emergency and urgency, the difficulties of evaluation and the choice of adequate therapy. This fact assumes greater importance when one considers that proper diagnosis and treatment prevent the serious injuries resulting from this medical situation. Therefore, the assessment and diagnosis of HC must be carried out in a directed and objective way (FRANCO, 2002).

Approaching the patient with a hypertensive crisis requires a clinical and complementary assessment carried out in an appropriate place in clinical emergency centers and hospital backup. Next, we present ten sequential steps for approaching the patient with a hypertensive crisis, in such a way that the clinical and complementary investigation obtains the necessary information for the diagnosis and establishment of the best treatment strategy (FRANCO, 2002).

Hypertensive crisis can be divided into hypertensive emergency and urgency, characterized by a marked increase in blood pressure (BP) leading to or being associated with impairment and rapid deterioration of target organ function and immediate risk to life. It is a condition that requires a rapid and gradual reduction in blood pressure levels, the time being measured in minutes to a few hours. It usually requires the use of parenteral drugs and observation in an intensive care unit (VARON J & MARIK PE, 2000). Hypertensive urgency is characterized by rapid increases in blood pressure, but without evidence of target organ damage and without imminent risk to life, allowing a slower reduction in BP levels over a period of 24 to 48 hours, usually using oral medications. An important fact of frequent occurrence in the treatment of hypertensive crisis is the so-called hypertensive pseudocrisis (OLIVEIRA, 2008).

The increase in BP causes enormous concern for physicians who provide assistance in primary care services or in hospital emergencies, leading them to treat patients with pseudocrisis more aggressively, a fact observed by (Monteiro Júnior, et al. 2008) when demonstrating that 64.5% of hypertensive patients, characterized as having a hypertensive pseudocrisis, were treated in an emergency unit and, inappropriately, treated as a hypertensive crisis (HC). In these patients, regardless of blood pressure levels, there is no evidence of acute damage to target organs or immediate risk to life, when evaluating the patient with the usual resources, mainly based on clinical history and physical examination, in addition to basic complementary tests (LESSA, 2001).

Thus, they are generally hypertensive patients, whether treated or not, referred to the hospital emergency department because they have very high BP measurements and who are oligosymptomatic or asymptomatic, therefore having uncomplicated and uncontrolled severe chronic hypertension. It should be noted that, in these cases, reorientation and reassessment by the physician are necessary. Another group of hypertensive individuals may present a transient increase in blood pressure in the face of some emotional, painful, or uncomfortable event, such as migraine, dizziness, vascular headaches of musculoskeletal origin

and manifestations of panic syndrome, also characterizing a hypertensive pseudocrisis (TAVARES; KOHLMANN JUNIOR, 2001).

Thus, the diagnosis must be made based on the clinical and complementary investigation defined in the approach to HC, using the defined criteria that differentiate the urgency of the hypertensive emergency. BP control in hypertensive urgency should be carried out over a longer period of time (24 to 48 h). The therapy can be instituted after a period of approximately 2 hours of clinical observation in a calm and low-light environment, a condition that helps to avoid situations of hypertensive pseudocrisis, which can be resolved only with rest and, sometimes, with the use of analgesics or tranquilizers. These measures can reduce BP without the need to use antihypertensive drugs (TAVARES; KOHLMANN JUNIOR, 2001).

4 CONCLUSION

Within this context, it was noted that the hypertensive crisis has been increasingly frequent in the emergency sector. Although there is already a national program for the treatment of arterial hypertension, most of the authors studied stated that these are the cases that most seek the emergency unit, given the non-adherence to the treatment correctly. According to what was seen, it is clear the importance of the health professional who works in the urgency and emergency sector to guide people to adhere to the treatment of arterial hypertension, since the people who arrive at this sector presenting the hypertensive crisis they need to be aware and act correctly, otherwise they will seek care again. It was also observed that care for hypertensive crisis is often neglected, as there is no consensus among health professionals regarding the differentiation of when it is a hypertensive urgency or emergency so that the treatment is chosen appropriately. Thus, professionals working in primary care should create strategies aimed at promoting, protecting and maintaining the health of hypertensive people to avoid changes in blood pressure. The articles showed that the publications are recent and thus reinforce the need for other studies aimed at disseminating the guidelines for the care of hypertensive crisis, thus providing a better-quality care, without complications and unnecessary expenses.

REFERENCES

BARROSO, W.K.S. et al. Diretrizes Brasileiras de Hipertensão Arterial. **Arq. Bras. Cardiol.** v.116, n.3, p. 516-658, 2021. Disponível em: <https://abccardiol.org/wp-content/uploads/articles_xml/0066-782X-abc-116-03-0516/0066-782X-abc-116-03-0516.x55156.pdf>. Acesso em: 06 de dez. 2022.

CERVO, A. L.; BERVIAN, P. A. **Metodologia científica**: para uso dos estudantes universitários. São Paulo: McGraw-hill do Brasil, 1983.

FEITOSA-FILHO, G. S. et al. Emergências hipertensivas. **Rev. Bras. Ter. Intensiva**, São Paulo, v.20, n.3, p. 305-12, 2008. Disponível em: <<http://www.scielo.br/pdf/rbti/v20n3/v20n3a14.pdf>>. Acesso em: 16 maio. 2010.

FRANCO, R. J. S. Crise hipertensiva: definição, epidemiologia e abordagem diagnóstica. **Rev Bras Hipertens.** São Paulo, v.9, n.4, out/dez, p.45, 2002. Disponível em: <<http://departamentos.cardiol.br/dha/revista/4/crises.pdf>>. Acesso em: 16 mar. 2011.

GASQUES, J. C. P.;ROLAND, D. M S.; CESARINO, C. B. Caracterização da crise hipertensiva em pacientes de grupo de hipertensão de um ambulatório-escola. **Rev. Enferm. UERJ.** V.16, n.1, p. 46-50, jan.-mar, 2008. Disponível em: <<http://www.portalbvsenf.eerp.usp.br/pdf/reuerj/v16n1/v16n1a07.pdf>>. Acesso em: 25 de mar. 2009.

GUEDES N. G. et al. Crises hipertensivas em portadores de hipertensão arterial em tratamento ambulatorial. **Rev. Esc. Enferm.** v.39, n.2, p.181-8, 2005.

IV BRAZILIAN GUIDELINES ON HYPERTENSION. **Arq Bras Cardiol** **82**: 16-19, 2004. Disponível em: http://www.fmrp.usp.br/revista/2003/36n2e4/18urgencias_emergencias_hipertensivas.pdf acesso em: 23 mai. 2011.

MALOBERTI, A. et al. Therapeutic Approach to Hypertension Urgencies and Emergencies in the Emergency Room. **High Blood Press Cardiovasc Prev.** v. 25, n. 2, p. 177 -189, 2018.

MARCIANO, M. V. F. et al. O papel da equipe de enfermagem frente a crise hipertensiva. **Brazilian Journal of Surgery and Clinical Research –BJSCR**, v.33, n.3, p.87-93, fev. 2021.

MARTIN, J. F. V. et al. Perfil de crise hipertensiva: **prevalência e apresentação clínica.** *Arq. Bras. Cardiol*, v.83, n.2, p.125-30, 2004.

MONTEIRO JÚNIOR, F. C. et al. Prevalência de verdadeiras crises hipertensivas e adequação da conduta médica em pacientes atendidos em um pronto-socorro geral com pressão arterial elevada. **Arq. Bras. Cardiol.**, v.90, n.4. São Paulo, abr. 2008. Disponível em: <http://www.scielo.br/pdf/abc/v90n4/v90n4a06.pdf>>. Acesso em: 16 mar. 2009

OLIVEIRA M. G. et al Análise da prescrição de captopril em pacientes hospitalizados. **Arq. Bras. Cardiol.**, v.91, n.6, São Paulo, p.415-17, dez. 2008. Disponível em: <<http://www.scielo.br/pdf/abc/v91n6/a09v91n6.pdf>>. Acesso em: 23 mar. 2009.

OMS. **Prevalência da hipertensão.** Genebra: OMS, 2021. Disponível em: <https://www.who.int/news-room/fact-sheets/detail/hypertension>. Acesso em: 06 dez. 2022.

PRAXEDES J. N. et. al Encontro multicêntrico sobre crises hipertensivas – relatório e recomendações. **J. Bras. Nefrol.**, v.23, p.1-23, 2001. Disponível em: <<http://www.jbn.org.br/23-1/23S3.pdf>>. Acesso em 16 mar. 2009.

SOBRINHO S. et. al Ocorrência e preditores clínicos de pseudocrise hipertensiva no atendimento de emergência. **Arq Bras. Cardiol.**, v. 88, n.5, p. 579-84 2007.

TAVARES, A. ; KOHLMANN JUNIOR, O. Tratamento da crise hipertensiva / Treatment of hypertensive crises. **Rev. bras. hipertens;** 5(2): 120-5 abr.-jun. 2001. Disponível em:<<http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?IsisScript=iah/iah.xis&src=google&base=LILACS&lang=p&nextAction=lnk&exprSearch=260485&indexSearch=ID>>. Acesso em: 19 jun. 2010.

VARON J & MARIK PE. The diagnosis and management of hypertensive crisis. **Chest 118**:14-27, 2000. Disponível em: http://www.fmrp.usp.br/revista/2003/36n2e4/18urgencias_emergencias hipertensivas.pdf acesso em: 23 mai. 2011.