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HYPERTENSIVE SYNDROMES IN PREGNANCY FROM THE PERSPECTIVE OF MOBILE EMERGENCY SERVICE NURSES

SÍNDROMES HIPERTENSIVAS NA GESTAÇÃO NA PERSPECTIVA DE ENFERMEIRAS DO SERVIÇO DE ATENDIMENTO MÓVEL DE URGÊNCIA

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ABSTRACT

Objective: To analyze the perceptions and experiences of nurses regarding the care of hypertensive syndromes in pregnancy within the Emergency Medical Service. Method: This is a qualitative study conducted with eight nurses using semi-structured interviews and thematic content analysis. Results: Most participants reported experience in managing hypertensive syndromes in pregnancy. They mentioned checking vital signs, initiating continuous cardiac monitoring, auscultating fetal heartbeats, establishing peripheral venous access, lateralizing the pregnant woman, and administering medications. However, they pointed out the lack of antihypertensive medications for managing these situations, concerns about care during convulsive crises, and inadequate prenatal care for pregnant women. Final thoughts: The nurses demonstrated knowledge and skills to identify and manage hypertensive syndromes in pregnancy. There is a need to provide the necessary medications for managing these conditions in the service, as well as to emphasize the importance of prenatal care and blood pressure control.

Keywords: Emergency medical services; Hypertension; Nursing; Pregnancy; Pregnancy complications.

RESUMO

Objetivo: analisar as percepções e vivências de enfermeiras sobre a assistência às síndromes hipertensivas gestacionais no Serviço de Atendimento Móvel de Urgência. Método: estudo qualitativo realizado com oito enfermeiras. Utilizou-se entrevista semiestruturada e análise de conteúdo temática. Resultados: a maioria das participantes relatou experiência no atendimento às síndromes hipertensivas gestacionais. Elas indicaram a verificação de sinais vitais, instalação de monitorização cardíaca contínua, ausculta de batimentos cardiofetais, punção de acesso venoso periférico, lateralização da gestante e administração de medicamentos. Entretanto, indicaram a ausência de medicamentos anti-hipertensivos para manejo dessas situações, preocupações quanto à assistência à crise convulsiva e o acompanhamento pré-natal inadequado das gestantes. Considerações finais: as enfermeiras demonstraram conhecimentos e habilidades para identificar e manejar as síndromes hipertensivas da gestação. Percebe-se a necessidade de disponibilizar as medicações necessárias para o manejo desses agravos no serviço, além da importância do pré-natal e do controle dos níveis pressóricos.

Palavras-chave: *Gravidez; Complicações na gravidez; Hipertensão; Serviços médicos de emergência; Enfermagem.*

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INTRODUCTION

In Brazil, the Mobile Emergency Service (SAMU - *Serviço de Atendimento Móvel de Urgência*) provides early medical care to people in urgent or emergency situations, which can lead to suffering, sequelae or even death. This service is developed by doctors, nurses, nursing technicians and first aid drivers (OLIVEIRA *et al*., 2022).

Among the situations that may require assistance from the SAMU, there are obstetric complications. In this sense, it is worth noting that, according to the World Health Organization (WHO), around 830 women die every day due to obstetric complications, one of the main causes being gestational hypertensive syndromes. These, in turn, affect approximately 10% of pregnancies, accounting for 26% of deaths in Latin America and the Caribbean (ACOG, 2020; UNFPA, 2022).

According to the evolution of the clinical picture, hypertensive syndromes in pregnancy can be classified as gestational hypertension, preeclampsia, eclampsia and the syndrome characterized by hemolysis, elevation of liver enzymes and low platelet count (HELLP) (SILVA *et al*., 2021). Gestational arterial hypertension is characterized by systolic blood pressure greater than or equal to 140 mmHg and/or diastolic blood pressure greater than or equal to 90 mmHg. It is an obstetric complication that can be identified in the second half of pregnancy, in previously normotense women and tends to disappear after the birth of the baby (BRAZIL, 2022).

Preeclampsia is characterized by high blood pressure from the 20th week of pregnancy, with or without proteinuria (PERAÇOLI *et al*., 2023). It can be classified according to the gestational age at which clinical manifestations occur, being early when it manifests before 34 weeks and late after this period (TORRES *et al*., 2024). It affects between 2% and 8% of all pregnancies globally, being responsible, together with eclampsia, for 10% to 15% of direct maternal deaths (TAVARES *et al*., 2023).

Eclampsia involves the occurrence of generalized tonic-clonic seizures or coma, unrelated to other diseases of the central nervous system, during pregnancy or puerperium. It is one of the most serious clinical manifestations of the pre-eclampsia spectrum and a frequent cause of maternal morbidity and mortality in Brazil. It affects 2% to 3% of patients with severe preeclampsia when magnesium sulfate is not given as an anticonvulsant prophylaxis (BRAZIL, 2022).

In HELLP syndrome, there is endothelial dysfunction that manifests itself from the activation of coagulation and liver dysfunction, detected by laboratory tests. Clinically, it is possible that the pregnant woman does not present high blood pressure and presence of proteinuria. The term, derived from English, refers to the presence of hemolysis, elevation of liver enzymes and decrease in the number of platelets (thrombocytopenia) (XAVIER *et al*., 2023). HELLP syndrome develops in 10 to 20% of pregnant women with pre-eclampsia/severe eclampsia (BRAZIL, 2022).

Hypertensive syndromes of pregnancy can lead pregnant women to severe morbidity, involving renal, cardiac and hepatic insufficiency, cerebrovascular accident, pulmonary edema and coagulopathy, as well as long-term disability and maternal mortality (PERAÇOLI *et al*., 2023). In the case of the fetus, complications involve restricted intrauterine growth, prematurity, low birth weight, suffering and fetal death (LEAL *et al*., 2020).

In this context, the role of nurses is essential in assisting pregnant women, especially in prehospital care performed by the SAMU. Integrative review reinforces that the nurse is often the first professional to identify problems with maternal and fetal health. When dealing with hypertensive syndromes of pregnancy, the nurse needs not only to identify early complications, but also to apply interventions that require technical and theoretical mastery (DAMASCENO; CARDOSO, 2022). Therefore, the question that led the research was: what are the perceptions and experiences of SAMU nurses in relation to the assistance to hypertensive syndromes of pregnancy? The objective of this study was to analyze the perceptions and experiences of nurses about the assistance to gestational hypertensive syndromes in SAMU.

METHOD

This is a field study, with a qualitative, exploratory and descriptive approach. The research was carried out between July and August 2024, in a municipality in Eastern Paraná.

The data acquisition scenario involved four bases of the Advanced Support Units (ASUs) of the SAMU of this municipality. The research participants were eight nurses selected by convenience. The data saturation criterion was adopted, in which the acquisition of new participants is terminated when the repetition of information related to the study theme is identified (Minayo, 2014). As inclusion criteria were considered the nurses who worked in the SAMU for at least six months, because it was understood that hypertensive syndromes in pregnancy represent diseases that require fast and effective care, requiring training and professional experience to act in these situations. Professionals who were on vacation, leave of absence and/or other type of leave were excluded.

For the production of data, the researcher went in person to the bases of the nurses' ASUs, presented the objective and justification of the study, and proceeded with the presentation of the Informed Consent Form. Subsequently, the day and time schedule for the individual semi-structured interview was made. No pilot test was conducted prior to the start of data production.

The interview was conducted by the principal investigator, who at the time of data collection was a resident of the Nursing Residency Program in Urgency and Emergency and already had experience with this type of data production. The interview took place in a private room at the Emergency Care Unit (UPA - *Unidade de Pronto Atendimento*), chosen by the participant. At the time of data

production, only the researcher and participant were present. The interviews lasted an average of fifteen minutes, were audiorecorded and then transcribed.

The data produced were submitted to the thematic content analysis of Minayo (2014). This technique is divided into three stages: pre-analysis, exploration of the material and treatment of the results obtained and interpretation.

Initially, the interviews were transcribed in Microsoft Word® files. After, the in-depth reading was developed and, from the highlighting tools of the text program, it was possible to organize and classify the information present in each interview. Subsequently, the statements of the participants were coded in record units, according to approximations and divergences. With this coding, two themes were categorized. In the final stage of the analysis, a critical and reflexive evaluation of the data was carried out, through inferences and interpretations based on updated scientific evidence related to the object of investigation.

During the entire research execution, the guidelines and standards present in Resolution n. 466/2012 and Resolution n. 510/2016 of the National Health Council were respected. The identity of the participants was preserved, with the use of the letter "N", nurse, accompanied by a number. The research project was approved under CAAE 79848024.0.0000.0101 and process number 6.901.955.

RESULTS

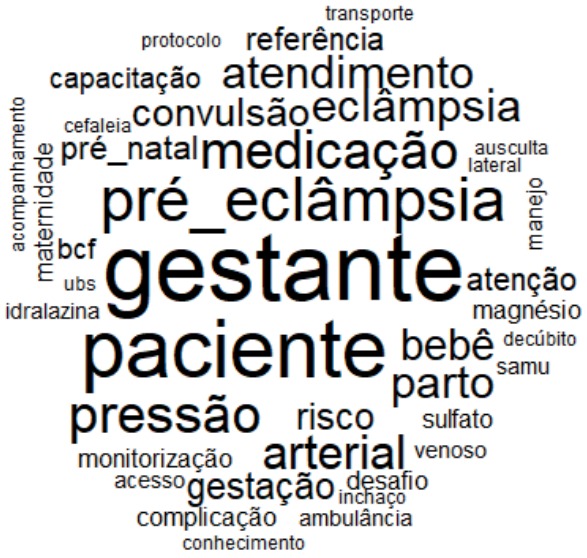
PARTICIPANTS CHARACTERIZATION

Of the eight nurses participating in the study, six were female and two male. The age ranged from twenty-four to forty-five years of age. Two nurses graduated less than five years ago, four between six and eight years ago and two more than ten years ago.

Eight nurses held specialization courses, being they in Urgency and Emergency, Adult Intensive Care Unit, Neonatal Intensive Care Unit, Child and Adolescent Health and Aesthetics. The time of service varied between eight months and sixteen years. Four professionals interviewed conducted training in obstetric emergencies in the current service.

For data processing, the word cloud tool was used with the help of IRAMUTEQ software (*R Interface pour les Analyses Multidimensionales de Textes et de Questionnaires*). This technique graphically presents the words according to their frequency of occurrence, allowing a clear visualization of the most recurring terms in the text. In this context, the size of words in the cloud is proportional to their frequency, so that the most cited words are highlighted.

Figure 1 - Words cloud



Source: Created by the Author, 2025

Next, the two themes generated from the data analysis are presented. The first theme deals with nurses' experiences in assisting hypertensive syndromes during pregnancy at SAMU. The second theme addresses the challenges faced by nurses in managing these situations.

ASSISTANCE FOR HYPERTENSIVE SYNDROMES DURING PREGNANCY FROM THE PERSPECTIVE OF SAMU NURSES

During the professional career, only one of the participants reported not having attended pregnant women with hypertensive syndromes. The others performed assistance directed to this public, both in SAMU.

In the speeches, the participants reported the symptomatology presented by the pregnant women during the care. They mentioned high blood pressure, sweating, lower abdominal pain, headache, edema and seizures.

> *The pregnant woman had high blood pressure, sweating and pain in her lower abdomen.* (N1).
> *I treated a patient with pre-eclampsia. Her blood pressure was 180 x 110 [...] The patient did not complain of any changes or symptoms, she said she did not know she was having an increase in blood pressure.* (N2).
> *I have already attended. There were several episodes [...] There was a case of eclampsia, the pregnant woman was from a neighboring city, she came having a seizure* (N5).
> *The patient was stable and her blood pressure was controlled with magnesium sulfate pump. She had no seizures or vaginal bleeding, and her FHR [fetal heart rate] was normal. The transport was uneventful and uneventful.* (N6).
> *To date, I have not provided any care to a pregnant patient with eclampsia or pre-eclampsia* (N7).
> *Once we received a pregnant woman with symptoms of preeclampsia. She had severe headache and edema.* (N8).

In addition to the symptoms, the interviewees cited the care developed in the visits. They signaled the check of vital signs, installation of continuous cardiac monitoring, fetal heart rate auscultation, peripheral venous access puncture, lateralization of the pregnant woman and administration of medications.

> *We checked the vital signs [...] We started cardiac monitoring, auscultating the fetal heart rate and puncture [...] keeping the pregnant woman calm; transferring the patient directly to the stretcher, preventing her from walking. In the case of seizures, the patient was placed on her side. Keeping her as far away from objects that could hurt her as possible* (N1).
> *Frequent blood pressure monitoring was performed [...] Watching for signs of altered consciousness or seizures; administering the correct medication; performing fetal monitoring; providing guidance and emotional support; monitoring for the presence of edema* (N2).
> *We monitored her and referred her to the referral hospital [...] Checking her blood pressure, auscultating the fetal heart rate, keeping the patient on her side, observing symptoms such as nausea and scotomas* (N4).
> *[...] She had seizures twice, we managed her with medication and she stopped having seizures. The other patients I treated had symptoms of preeclampsia, but we did not witness any seizures during the treatment. So, we only transported them to the referral hospital [...] we turn the pregnant woman laterally to help with blood flow, so as not to compress the vena cava. Check vital signs; elevate the head of the bed; maintain peripheral venous access; provide support; pay attention to signs and symptoms* (N5).
> *We performed the initial assessment and the blood pressure was very high. We started monitoring the vital signs and prepared the transfer to a referral unit. It was important to keep the patient calm and informed about what was happening, in addition to offering support to the family [...] control the BP; keep the pregnant woman in the left lateral decubitus position; auscultate the BCF; perform venous access; administer medication if necessary* (N8).

The speeches also revealed the nurses' concern to keep the pregnant woman calm, providing emotional support to her and her family. In these cases, they indicated the need to provide information on the procedures adopted and the patient's clinical conditions.

THE CHALLENGES FACED BY NURSES IN THE MANAGEMENT OF HYPERTENSIVE SYNDROMES DURING PREGNANCY

Regarding the situations of care for hypertensive syndromes in pregnancy, the participants highlighted the absence of some anti-hypertensive drugs, such as hydralazine, methyldopa and nifedipine. This gap was pointed out both as a challenge during care and as an aspect that drew the attention of the professionals involved. In addition, the professionals also mentioned the medications used during the visits, including magnesium sulfate and diazepam.

> *It is a challenge not to have methyldopa and hydralazine in the ambulance, which are the first-choice medications in cases of pre-eclampsia [...] Due to the lack of specific medication, we started magnesium sulfate and transferred the pregnant woman to the referral maternity hospital in code 1* (N1).

> *The challenges are the issue of not having the correct medication, such as hydralazine [...]* (N2).
> *I think it is not having all the necessary medications, such as hydralazine, which lowers blood pressure faster and causes fewer side effects* (N3).
> *Not having the medication, neither hydralazine nor methyldopa is a challenge [...] We also do not have nifedipine, which can be used in some cases* (N4).
> *In one case, we had to give diazepam. We tried to manage the situation with medication, but it did not work [...]* (N5).

In addition to the medications, the participants also pointed out the treatment of convulsive crises as a challenge. Given these, they reported concern with the maintenance of maternal and fetal well-being and the possibility of negative outcomes.

> *The possibility of a pregnant woman having a seizure while traveling to the maternity ward is a challenge in our care* (N1).
> *I think the biggest challenge is keeping both of them alive* (N5).
> *I imagine that a seizure in a pregnant woman due to eclampsia must be a challenge due to the risks to the mother and the complications for the baby* (N6).
> *The biggest challenge is if this patient starts to have seizures during the care. You have to stay calm and do whatever is necessary to keep the pregnant woman and the baby alive* (N7).
> *Dealing with a pregnant woman who is having a seizure is a challenge, because it requires immediate action, and any delay can affect both the pregnant woman and the baby.* (N8).

The participants also highlighted as a challenge the fact that most of the pregnant women assisted by the SAMU did not attended prenatal follow-up adequately. They also observed that many did not monitor blood pressure.

> *They don't realize how important the blood pressure map is; that controlling blood pressure is important, that diet during pregnancy is important* (N3).
> *She knew that her blood pressure was high, but she didn't follow up properly* (N4).
> *Many pregnant women don't do their prenatal care properly. They go to one or two prenatal appointments and don't want to continue follow-up [...] Then these complications happen* (N5).
> *The patient didn't do prenatal care and sought care after a syncope [...] She was referred from the UPA to high-risk prenatal care for follow-up* (N6).

In the speeches, the nurses reinforced the importance of blood pressure control and diet during pregnancy, aspects that are addressed and monitored throughout the prenatal follow-up.

DISCUSSION

In the case of the symptoms mentioned by the participants, there was high blood pressure, sweating, lower abdominal pain, headache, edema and convulsions. This symptomatology is characteristic of hypertensive syndromes in pregnancy. Thus, it should be noted that the presence of signs of imminence of eclampsia, such as headache, visual changes (photophobia, phosphenas and scotomas), pain in the back of the neck and patellar hyperreflexia, indicate impairment of the nervous system.

Pregnant women may also present symptoms such as nausea and vomiting, epigastric pain or right hypochondrium, which are related to hepatic impairment, more characteristic in cases of HELLP syndrome. Moreover, other important characteristics are the presence of seizures in cases of eclampsia, oliguria, acute renal failure, chest pain and acute lung edema (BRAZIL, 2022; SMSC, 2024).

Regarding high blood pressure, a study conducted at the SAMU headquarters in the northeastern region of Brazil, based on the analysis of 558 obstetric care reports, showed that 22.5% of pregnant women (about 125 cases) had, blood pressure above 140x90 mmHg and 160x110 mmHg was observed (FREITAS *et al*., 2020). No studies have been found that specifically address the relationship between sweating and hypertension in pregnant women. However, it is important to note that sweating can be a symptom associated with high blood pressure and pain due to physiological responses of the body to situations of stress, intense pain or underlying clinical conditions (GUYTON; HALL, 2021).

In the case of pain in the lower abdomen, this finding converges with the findings of a study carried out with 301 care cards from the SAMU of Uberaba. In the study in question, it was found that 64 pregnant women, which corresponded to 21.3% of the total number of visits, also reported lower abdominal pain at the time of service request (SILVA *et al*., 2018).

The headache complaint mentioned by nurses was also evidenced in a survey conducted at a Taiwan hospital with 20 pregnant women. They presented a severe headache associated with pre-eclampsia. In addition, it was found that the pain was predominantly located in the frontal and occipital regions, in addition to the upper part of the neck (CHAO *et al*., 2020).

Another clinical manifestation mentioned in the speeches and that can be observed in preeclampsia is edema, mainly on the face and hands. However, it is worth noting that edema is not essential for the diagnosis of pre-eclampsia and is often observed in healthy pregnancies as a result of increased body fluids. It should be noted that this finding, in pre-eclampsia, is derived from the greater capillary permeability, which allows the passage of fluids from the intravascular space to the interstitial, resulting in exaggerated retention of water and salt (DORNER *et al*., 2023). It is important to note that when edema is generalized, it is considered as a warning sign (CARVALHO *et al*., 2023).

The presence of seizures is characteristic of eclampsia, which may be preceded by frontal or occipital headache, visual disturbances and pain in the right upper quadrant or epigastric region. Convulsive crisis can be triggered during pregnancy, delivery or puerperium and is configured as a medical emergency that requires immediate treatment to prevent maternal and perinatal mortality (PERAÇOLI *et al*., 2022).

Given the symptoms indicated in the statements, it is essential that the nurse, along with the team working at SAMU, know how to correctly and quickly identify the characteristics of hypertensive syndromes during pregnancy, thus allowing the approach and necessary management of these

situations. Immediate assistance is recommended, taking into account the possibility of rapid and progressive clinical deterioration of the pregnant woman (SMSSP, 2023).

According to the Resolution of the Federal Nursing Council n. 713 (2022), the performance of the nurse in Pre-Hospital Care (PHC) encompasses assistance practices in clinical, traumatic, surgical, psychiatric, pediatric, obstetric, among others. Regarding obstetric care, the Resolution states that in the scope of action of the nurse in mobile pre-hospital assistance, this professional must provide assistance to the pregnant woman, the parturient and the newborn, in addition to performing births without dystocia.

The nurse has direct contact with the pregnant woman during the care, being able to develop the collection of objective and subjective information, as well as obstetric physical examination and assessment of vital signs. Therefore, this professional needs to recognize changes, signs and symptoms for the early identification of complications, thus allowing rapid and effective interventions.

In SAMU, the main procedures to be adopted with pregnant women with suspected preeclampsia or eclampsia are divided into primary and secondary evaluations. The primary evaluation includes the level of awareness, airway protection and check for external hemorrhages and vaginal losses (BRASIL, 2016).

In the secondary evaluation, vital signs are present, verification of gestational age and/or probable date of delivery, assessment of fetal heart rate, positioning of the patient in left lateral decubitus and identification of signs of severity related to preeclampsia or eclampsia. In addition, other important care includes puncture of peripheral venous access, preferably in the upper right limb, due to transport in left lateral decubitus. It is also necessary to provide supplemental oxygen by means of a mask with reservoir, if the oxygen saturation is less than 94%, and to perform the medication approach, according to the clinical picture of the pregnant woman (BRAZIL, 2016).

During eclampsia, the basic principles of conduct include avoiding trauma from falls, maintaining airway permeability, ensuring oxygen support and preventing bronchoaspiration in case of vomiting. Therefore, it is recommended to position the pregnant woman in left lateral decubitus or semi-sitting on a stretcher with raised side bars. This position is also indicated because it helps reduce systemic vascular resistance and contributes to the control of blood pressure. There is less compression of the inferior vena cava and abdominal aorta by the gravidic uterus, which results in better venous return to the heart, increased cardiac output and consequently improved placental perfusion (CLARK *et al*., 2023).

A quantitative-qualitative approach study carried out with nurses from a hospital in Rio Grande do Norte, showed that 90% of the participants reported that, while assisting pregnant women with preeclampsia or eclampsia, their practices are focused on the initial evaluation of the patient, in specific guidance and drug administration. Among the behaviors mentioned by participants, we included positioning the pregnant woman in left lateral decubitus, checking vital signs, assessing

uterine dynamics and fetal vitality, offering oxygen therapy, as well as administering drugs relevant to the clinical picture (FONSÊCA, 2019). It should be noted that, for airway protection, it is recommended to use the Guedel cannula (PERAÇOLI *et al*., 2023).

Among the care provided during the assistance in obstetric urgency and emergency situations, it was observed that nurses performed maternal and fetal monitoring, with the execution of the auscultation of fetal heartbeats and verification of the frequency of contractions. They also reported the provision of psychological support and the importance of keeping the pregnant woman informed about all procedures and the evolution of the baby and, if necessary, preparing her for emergency birth.

Concerning medication management, the participants highlighted that the absence of some anti-hypertensive drugs represents a challenge in the care of hypertensive syndromes during pregnancy. Thus, it should be noted that the decision to start using antihypertensive drugs must take into account the risks and benefits for both mother and fetus, considering mainly blood pressure levels and the presence of associated signs and symptoms. In the case of non-severe hypertension, there is a concern about the possibility of an excessive or abrupt reduction in blood pressure, because although the decrease in blood pressure contributes to systemic circulation, it has little effect on uteroplacental circulation. Therefore, the difficulty in maintaining the perfusion of this system with an excessive reduction in blood pressure can negatively affect fetal nutrition and oxygenation (PERAÇOLI *et al*., 2023). Thus, it should be noted that all antihypertensive drugs cross the placental barrier. Nevertheless, drugs such as methyldopa, nifedipine and anlodipine have an acceptable safety profile to be used during pregnancy (BUGRI *et al*., 2023).

A study conducted in a hospital maternity ward in Ghana, with 673 pregnant women with a history of high blood pressure, shows that the majority of pregnant women underwent anti-hypertensive treatment with oral nifedipine, followed by methyldopa. It should be noted that these drugs were mainly used for the treatment of preeclampsia without signs of severity (BUGRI *et al*., 2023). In Brazil, a study aimed at characterizing the profile of drug use by high-risk pregnant women conducted with 368 women in a university hospital in São Paulo indicated that 75 (19.4%) reported using methyldopa as an anti-hypertensive treatment (NAGAI *et al*., 2022).

In the treatment of hypertensive crisis or emergency in pregnant women, the recommended medications are hydralazine, nifedipine and sodium nitroprusside (BRAZIL, 2022). Hydralazine is the drug of first choice in cases of hypertensive crisis, being a peripheral vasodilator widely used in pre-eclampsia, both for acute crisis treatment and for hypertensive emergency. The maximum action of this medication occurs around 20 minutes (PERAÇOLI *et al*., 2023).

Oral nifedipine is a calcium channel blocker, which can also be used as first-line therapy, especially when peripheral venous access is not available. The maximum action occurs between 30 and 40 minutes (PERAÇOLI *et al*., 2023). Sodium nitroprusside can be used in exceptional situations, such as in the presence of acute lung edema and severe refractory hypertension (BARROSO *et al*., 2021).

Furthermore, the abrupt and excessive reduction of blood pressure is avoided due to the risk of cerebrovascular accident, myocardial infarction, acute renal failure and fetal hypoxia. Therefore, the goal should be to reduce blood pressure by 15% to 25% in the first hour (BRAZIL, 2022).

The Order n. 2,048, of November 2002, of the Ministry of Health, establishes the guidelines and standards for emergency care in Brazil. Among the various aspects addressed, the list of drugs that must be available in non-hospital units for emergency care stands out. Among the drugs mentioned are hydralazine hydrochloride, methyldopa and nifedipine. However, the same document does not specify that these medications must be available in advanced life support ambulances.

Magnesium sulfate is the anticonvulsant drug of choice for preeclampsia and eclampsia. Treatment is mainly directed to the prevention of recurrent seizures (BARROSO *et al*., 2021). Another benefit that can be obtained with magnesium sulfate is fetal neuroprotection. Medication reduces the risk of cerebral palsy and severe motor dysfunction in premature newborns (PERAÇOLI *et al*., 2023).

A study shows that magnesium sulfate is safer and more effective than phenytoin and diazepam for the prevention of recurrent seizures in eclampsia. A study compared the efficacy between magnesium sulfate and phenytoin. The results showed that 10 of the 1,089 women included in the phenytoin group had seizures, while none of the 1,049 women in the magnesium sulfate group presented any eclamptic activity. Another study compared the efficacy between magnesium sulfate and diazepam. The study included 1,233 patients with eclampsia in the diazepam group and 1,043 patients with pre-eclampsia and eclampsia in the magnesium sulfate group. The results showed a significant reduction in the mortality rate of eclampsia, from 20.9% to 2.3%, among patients in the magnesium sulfate intervention group (EASTERLING *et al*., 2018).

In addition, patients treated with diazepam or phenytoin often require complementary therapies for effective seizure control. The use of these drugs has also been associated with depressive effects in newborns, which often present Apgar below seven in the first minute of life and require longer periods of hospitalization in neonatal intensive care units (EASTERLING *et al*., 2018).

Subsequently, another challenge cited by the participants was the management of convulsive crises. Thus, it is worth noting that in pregnant women, the manifestation of seizures after the 20th week of gestational age should always be interpreted as eclampsia. Only after a careful approach, other causes are considered (PERAÇOLI *et al*., 2023).

A study conducted with the nursing team of the SAMU in a city in Pernambuco analyzed the perception of these professionals before obstetric emergencies, highlighting the main challenges faced during care. The interviewees highlighted the risks related to preeclampsia and eclampsia, highlighting convulsions as one of the main challenges in the care provided. In the speeches, the professionals mentioned feelings of apprehension, anguish and concern about the safety and vitality of the pregnant woman and baby (SILVA *et al*., 2023).

The third and last challenge signaled by the participants involved the realization that many pregnant women do not develop prenatal care adequately. They consider that this behavior impairs the blood pressure control during pregnancy.

The Ministry of Health recommends that pregnant women make at least six prenatal consultations, interspersed between the doctor and nurse. Consultations should be monthly until the 28th week, fortnightly from the 28th to the 36th week, and weekly from the 36th to the 41st gestational week (BRAZIL, 2022). During consultations, obstetric risk assessment should be performed to identify possible risk factors or complications (SILVA *et al*., 2020).

During prenatal care, the regular measurement of blood pressure in all appointments allows early detection of gestational hypertension. Laboratory tests, such as the dosage of protein in urine, are essential for the diagnosis of hypertensive syndromes (CARVALHO *et al*., 2023).

Moreover, it is essential to evaluate complaints related to the signs and symptoms of target organ impairment, such as epigastric pain and/or right hypochondrium. Attention should also be paid to weight gain, especially when it occurs quickly and associated with edema of hands and face (BRAZIL, 2022).

Given the diagnosis of preeclampsia, the focus of clinical control is the prevention of maternal and perinatal morbidity and mortality, through guidance on the signs of worsening of the disease, referral and assistance in tertiary services with qualified neonatal support, adequate control of blood pressure, prevention of eclampsia or its recurrence, in addition to the early identification of laboratory changes, especially those associated with HELLP syndrome (PERAÇOLI *et al*., 2023).

A cross-sectional study, conducted between 2020 and 2022 in a maternity hospital in northeastern Brazil, with pregnant women who were admitted in the emergency room with hypertensive syndromes, pointed out that, although the minimum number of prenatal consultations has been reached, the quality of the follow-up needs to be questioned, considering the high prevalence of unfavorable maternal-fetal outcomes (XAVIER *et al*., 2023).

Therefore, it is recognized that, from the regular prenatal follow-up, it is possible to identify early risk factors and intervene in a timely manner, reducing complications such as gestational hypertensive syndromes. Continuous monitoring of blood pressure, laboratory tests and fetal development monitoring allow comprehensive care and contribute to maternal and child well-being.

FINAL THOUGHTS

Most of the nurses in the study reported having seen pregnant women with hypertensive syndromes in SAMU, demonstrating their ability to identify signs and symptoms related to these conditions. They also showed knowledge and ability to handle these cases, indicating care that included the verification of vital signs, installation of continuous cardiac monitoring, fetal heart

rate auscultation, peripheral venous access puncture, lateralization of the pregnant woman and administration of medications.

However, important challenges were pointed out, such as the absence of antihypertensive drugs suitable for use during pregnancy and the assistance to convulsive crises. In addition, it was pointed out that many pregnant women attended by the service and who had hypertensive syndromes did not perform prenatal follow-up adequately, which may have a negative impact on blood pressure control, generating the need for SAMU care.

The study had limitations, because its results reflect the perceptions of a specific group of nurses working in a delimited region. This may restrict the applicability of the findings to other realities, considering that in other localities the perceptions, experiences and challenges faced before the assistance to hypertensive syndromes during pregnancy can be different. The research should be expanded to other contexts and with different professionals who work in SAMU, in order to obtain a more comprehensive panorama.

Nevertheless, it is considered that the findings allow to identify potential and weaknesses in the assistance, offering subsidies that may indicate the necessary improvements for the improvement of the assistance provided by SAMU professionals. In addition, the results demonstrate the need for permanent education actions that contribute to the constant updating and better instrumentalization of professionals. Investing in training on the proper management of hypertensive syndromes during pregnancy, as well as providing access to the necessary medications in this service, can result in a more qualified, problem-solving and safe care for pregnant women served by the service.

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