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Profile and perinatal results of pregnant women with hypertensive syndrome in Southern Brazil

Perfil y resultados perinatales de mujeres embarazadas con síndrome hipertensivo en el Sur de Brasil

Perfil e resultados perinatais de gestantes com síndrome hipertensiva do Sul do Brasil

ABSTRACT
The aim was to analyze the profile and perinatal results of high-risk pregnant women with hypertensive syndrome. This is an epidemiological, observational and retrospective study, with a quantitative approach. Secondary data were used from 471 high-risk pregnant women with Hypertensive Syndrome in the city of Sarandi/PR and later followed by the outpatient clinic and delivery at the referral hospital, from 2012 to 2016, with deliveries performed until 2017. The independent variables were constituted by Hypertensive Syndrome, classified as: chronic hypertension, pre-eclampsia/eclampsia, pre-eclampsia overlapping with chronic hypertension, also known as hypertensive disease specific to pregnancy (DHEG). The outcome variables were prematurity, low birth weight, Apgar <7 in the 1st and 5th minutes, fetal death, neonatal death and cesarean delivery. The data were submitted to the Chi-square and Fisher's exact tests. All discussions were conducted at a 5% level of significance (p <0.05) and a 95% confidence interval. Gestational hypertensive syndrome is directly associated with prematurity, the development of Apgar less than seven in the fifth minute of life, low birth weight, fetal death and cesarean delivery.
DESCRIPTORS: Maternal and Child Health; Pregnancy Complications; Hypertension.

RESUMEN
El objetivo fue analizar el perfil y los resultados perinatales de mujeres embarazadas de alto riesgo con síndrome hipertensivo. Este es un estudio epidemiológico, observacional y retrospectivo, con un enfoque cuantitativo. Se utilizaron datos secundarios de 471 mujeres embarazadas de alto riesgo con síndrome hipertensivo en la ciudad de Sarandi/PR y luego fueron seguidas por la clínica ambulatoria y el parto en el hospital de referencia, de 2012 a 2016, con partos realizados hasta 2017. Las variables independientes estaban constituidos por el Síndrome Hipertensivo, clasificado como: hipertensión crónica, preeclampsia/eclampsia, preeclampsia solapada con hipertensión crónica, también conocida como enfermedad hipertensiva específica del embarazo (DHEG). Las variables de resultado fueron: prematuridad, bajo peso al nacer, Apgar <7 en el primer y quinto minutos, muerte fetal, muerte neonatal y parto por cesárea. Los datos fueron sometidos a las pruebas exactas de Chi-cuadrado y Fisher. Todas las discusiones se llevaron a cabo con un nivel de significación del 5% (p <0.05) y un intervalo de confianza del 95%. El síndrome de hipertensión gestacional se asocia directamente con la prematuridad, el desarrollo de Apgar menos de siete en el quinto minuto de vida, bajo peso al nacer, muerte fetal y parto por cesárea.
DESCRIPTORES: Salud Maternoinfantil; Complicaciones del Embarazo; Hipertensión

RESUMO
Objetivou-se analisar o perfil e resultados perinatais de gestantes de alto risco com Síndrome Hipertensiva. Trata-se de um estudo epidemiológico, observacional e retrospectivo, com abordagem quantitativa. Foram utilizados dados secundários de 471 gestantes de alto risco e com Síndrome Hipertensiva da cidade de Sarandi/PR e posteriormente acompanhadas pelo ambulatório e realização do parto no hospital de referência, no período de 2012 a 2016, com partos realizados até 2017. As variáveis independentes foram constituídas pela Síndrome Hipertensiva, classificada em: hipertensão crônica, pré-eclâmpsia/eclâmpsia, pré-eclâmpsia sobreposta à hipertensão crônica, também conhecida como doença hipertensiva específica da gestação (DHEG). As variáveis desfechos foram: prematuridade, baixo peso ao nascer, Apgar <7 no 1° e 5° minutos, óbito fetal, óbito neonatal e parto cesárea. Os dados foram submetidos aos testes Qui-quadrado e Teste Exato de Fisher. Todas as discussões foram realizadas em nível de 5% de significância (p<0,05) e intervalo de confiança de 95%. A Síndrome hipertensiva gestacional associa-se diretamente a prematuridade, o desenvolvimento de Apgar inferior a sete no quinto minuto de vida, o baixo peso ao nascer, a morte fetal e ao parto cesárea.
DESCRITORES: Saúde Materno-Infantil; Complicações na Gravidez; Hipertensão.

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INTRODUCTION

Gestational Hypertensive Syndrome (SH) has been gaining prominence in health debates around the world, especially in countries that seek economic and social development, such as Brazil, and can be characterized by three types: chronic arterial hypertension (SAH); chronic arterial hypertension superimposed by pre-eclampsia; and pregnancy-specific hypertensive disease - DHEG[1,2].

Among the frequent fetal complications resulting from SH, perinatal death, fetal growth restriction and prematurity stand out. Maternal complications include placental abruption, HELLP syndrome, protein imbalance in serum levels and a significant decrease in glomerular filtration rate[3,4].

The future neonate is more likely to be affected by various diseases, due to the consequences of gestational SH. Recent studies indicate that pregnant women with severe pre-eclampsia are more likely to develop pulmonary edema, seizures, liver failure, acute renal failure and disseminated intravascular coagulation[5]. In chronic arterial hypertension, the term child has a 50% higher risk than expected for gestational age, whereas the premature newborn has a 450% increased risk[6].

Global data indicate that about 3% to 8% of pregnant women have some type of disorder related to uncontrolled blood pressure during the prenatal process, and, while the World Health Organization (WHO) estimates that this disease is responsible for about 13% of maternal deaths in the world. Brazil has a different reality, according to data from the Ministry of Health (MS), approaching 35%, with a rate of 140 to 160 maternal deaths for every 100,000 live births - NV[7,8].

The physiological disorder and the relatively high mortality rate, factors originating from gestational HS, lead to a decrease in the quality of life of the pregnant woman together with her family members, regarding the constant fear of a possible first abortion or repeated miscarriage, which can be triggered when chronic hypertension is present[9].

In addition, the appearance of moderate or severe SH has a double incidence in women who present with repetitive spontaneous abortions, and, thus, it is possible to observe an increase in the risk factor for the development of obsessive-compulsive disorder (OCD) by these women[10,11].

Thus, taking into account public policies and programs of care for pregnant women, the sublime incidence of SH in pregnancy, as well as the vastness of unfavorable gestational and perinatal results, the present study aimed to analyze the profile and perinatal results of high-risk pregnant women with SH.

METHODOLOGY

This is an epidemiological, observational and retrospective study, with a quantitative approach.

The study was carried out in a high-risk outpatient clinic in the 15th Regional Health Region (RS) in the Northwest Region of Paraná. To carry out this study, secondary data (medical records, reports, risk stratification and prenatal card) from 471 high-risk pregnant women with SH from the city of Sarandi/PR were used and, subsequently, followed up by the ambulatory and the delivery at the referral hospital, from 2012 to 2016, with deliveries performed until 2017. The data collection process was from November 2016 to October 2017.

The independent variables were constituted by the SH, classified as: chronic hypertension, pre-eclampsia/eclampsia, pre-eclampsia overlapping with chronic hypertension and gestational hypertension, also known as hypertensive disease specific to pregnancy (DHEG). According to the risk stratification used in the region, the pregnant women in the present study were classified into: group I - pregnant women with pre-existing clinical condition of chronic arterial hypertension; group II - pregnant women with an obstetric history of pre-eclampsia; group III - pregnant women with DHEG in the current pregnancy.

The outcome variables were prematurity, low birth weight (LBW), Apgar <7 in the 1st and 5th minutes, fetal death, neonatal death and cesarean delivery.

The inclusion criteria for groups I, II and III were: pregnant women classified with SH who had delivery at the referral

hospital. Excluded from the study were pregnant women who had deliveries outside the establishment of reference at the risk clinic and who did not have SH.

Epi Info software, version 7.0, a public domain program created by the Centers for Disease Control and Prevention (CDC), was used for data compilation and statistical analysis. The data were submitted to the Chi-square tests (x^2) and Fisher's exact test. All discussions were conducted at a 5% significance level ($p < 0.05$) and a 95% confidence interval (CI).

All national and international standards of ethics in research involving human beings were complied with, being approved by the opinion nº 2,287,476 of the Standing Committee on Ethics in Research with Human Beings of the State University of Maringá (COPEP).

Tabela 1. Perfil sociodemográfico das gestantes estratificadas como alto risco. Sarandi, PR, Brasil, 2019.

Variáveis	n	%
Idade		
10 a 19	27	5,7
20 a 34	348	73,9
35 ou mais	96	20,4
Cor		
Branca	266	56,5
Preta	17	3,6
Parda	185	39,3
Amarela	03	0,6
Situação conjugal		
Vive com o companheiro	256	54,4
Não vive com o companheiro	215	45,6
Escolaridade		
< 8 anos	232	49,3
≥ 8 anos	239	50,7
Trabalho remunerado		
Sim	262	55,6
Não	209	44,4

RESULTS

The 471 high-risk pregnant women in this study had the following predominant characteristics: age between 20 and 34 years (73.9%), white skin (56.5%); live with a partner (54.4%); schooling equal to or greater than 8 years (50.7%); and paid work (55.6%), as shown in Table 1.

Table 2 shows SAH as CCPE and Pre-eclampsia as AO associated with reduced Apgar at the 5th minute ($p = 0.02$) and cesarean delivery ($p < 0.001$). In addition to these results, the number of deaths among pregnant women with SH stands out. In Group I (SAH) there was 1.6% of fetal mortality and 3.2% of infant mortality and in Group III (DHEG) there was 4.7% of infant mortality.

DISCUSSION

The Gestational Hypertensive Syndrome is a disease that has a relevant incidence and prevalence rate and, in our country, it deserves attention due to the various affections originated from it during the pregnancy cycle, both for the woman and the fetus, among these can be found: development of a possible eclampsia, increased risk for HELLP syndrome, premature births, origin of low birth weight babies.

Tabela 2. Associação entre Síndrome Hipertensiva e resultados perinatais de gestação de alto risco, Sarandi, PR, Brasil, 2019.

Resultados Perinatais	Grupo I Hipertensão Arterial (n=63)			Grupo II Pré-Eclâmpsia (n=30)			Grupo III DHEG (n=43)		
	n	%	p	n	%	p	n	%	p
Prematuridade (<37 semanas)	27	42,9	0,16	10	33,3	0,84	15	34,9	0,98
Baixo peso ao nascer (<2.500 g)	15	23,9	0,82	07	23,3	0,93	06	13,9	0,15
Apgar 1° min. (<7)	15	23,9	0,30	04	13,3	0,28*	11	25,6	0,25
Apgar 5° min. (<7)	08	12,7	0,02	08	12,7	0,02	02	4,7	0,47*
Morte fetal	01	1,6	0,51*	-	-	-	-	-	-
Morte infantil	02	3,2	0,23*	-	-	-	02	4,7	0,12*
Cesárea	56	88,9	<0,001	29	96,7	<0,001	34	79,1	0,43

Furthermore, this syndrome currently leads the ranking of diseases responsible for maternal death, especially when it settles in its most severe forms[12].

Among the factors addressed in this study, late gestational age (over 35 years) is found, with a total of 20.4% women. In this context, the age factor is a considerable aggravating factor regarding the risk of gestational hypertension, as women over 35 years of age are more susceptible to vascular impairment. In addition, women who are at an advanced age have risk factors for developing preterm births and low birth weight newborns (LBW), which results in babies with low Apgar scores[13,14].

Another aspect portrayed in this research is the marital status of the pregnant woman, something that is relevant to the data analysis. It is noted that about 45.6% of the study participants do not live with their partner. According to some authors[15], the unstable marital situation is considered a risk factor for the development of health problems during the pregnancy process, among these health problems are: LBW and increased perinatal mortality, this can be explained by the fact that women need to bear all the responsibilities regarding life of your child, without having a partner to assist you.

In addition, having a stable marital relationship has a direct impact on the pregnancy process, since the lonely woman is more fragile about possible episodes of stress, often because they must perform domestic activities without any help from a partner. Such episodes can cause uncontrolled blood pressure, thus having an indirect impact on the possible development of gestational hypertension[16].

In addition, the educational factor was analyzed, where it is possible to observe the high incidence of pregnant women at risk with school age less than or equal to 8 years (50.7%), a data that can be caused by early pregnancy and / or lack of partner, forcing the woman to abandon the academic career because she needs to provide for her own child, which is because most families do not have enough financial structure to deal with the child's future expenses[17].

Having said that, and taking into account the results of this research, it is observed that pregnant women affected by Hypertensive Syndrome during pregnancy have children with greater vulnerability of developing low Apgar values in the fifth minute[1]. Also corroborating, a study carried out with 368 pregnant women with hypertensive disorders, showed that 14.9% of the group gave rise to babies with an Apgar value below seven between the first and fifth minutes of life[20].

This aspect was also addressed in this study, in which 55.6% of risk pregnant women are already inserted in the labor market. In addition, according to the Ministry of Health, low education favors high-risk pregnancies, as it influences the scarcity of learning and access to information, often making prenatal consultations inefficient and/or attended, for work reasons[18].

In this study, the Apgar 5 ° min. (<7) was related to Arterial Hypertension and Pre-Eclampsia, respectively with ($p = 0.02$), in this sense it is worth mentioning that Apgar is an instrument widely used in delivery rooms, as it assesses the conditions of the newborn within the parameters of the scale in question, and values that are less than seven in the child's fifth minute of life require immediate medical interventions[19].

Having said that, and taking into account the results of this research, it is observed that pregnant women affected by Hypertensive Syndrome during pregnancy have children with greater vulnerability of developing low Apgar values in the fifth minute[1]. Also corroborating, a study carried out with 368 pregnant women with hypertensive disorders, showed that 14.9% of the group gave rise to babies with an Apgar value below seven between the first and fifth minutes of life[20].

In addition, pregnant women with gestational hypertensive syndrome are susceptible and more likely to develop fetuses with polycythemia, which, in turn, correlates with low Apgar scores[21]. Furthermore, the development of Gestational SH is directly related to the large number of maternal and fetal deaths, due to the development of pre-eclampsia and eclampsia, in addition to another complication during pregnancy[22].

Within the susceptibility of pregnant women with gestational hypertensive syndrome, there is a higher prevalence of cesarean sections. However, operative delivery has several risk factors intrinsic to it, such as the appearance of heavy bleeding, the risk of contamination by

microorganisms and allergic reactions to anesthetics. Thus, the increased chance of the appearance of comorbidities at the time of conception is evident[4].

In a study conducted with 108 women who had pre-eclampsia due to increased blood pressure, about 68% of pregnant women underwent elective cesarean section and 32% attempted normal delivery. However, 26% of pregnant women who would like to perform vaginal delivery had to undergo an emergency cesarean section due to various complications. In this context, elective cesarean delivery contributed to a better perinatal outcome than vaginal delivery or emergency cesarean delivery after labor induction[23].

CONCLUSION

Gestational hypertensive syndrome is directly associated with greater risks of developing several comorbidities during the gestational process, among which prematurity, Apgar development below seven in the fifth minute of life, LBW, fetal death and cesarean delivery.

Based on the above, the importance of a multidisciplinary team prepared to provide high-risk pregnant women with quality care that is effective, especially in the early diagnosis process, is emphasized, thus favoring the fight against possible future pregnancy complications.

It is also worth reaffirming the need for humanized care that assesses the pregnant woman, covering her biopsychosocial aspects, in order to have a comprehensive approach to the patient. ■

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