REVISTA ONLINE DE PESQUISA

CUIDADO É FUNDAMENTAL

Universidade Federal do Estado do Rio de Janeiro • Escola de Enfermagem Alfredo Pinto

RESEARCH

DOI: 10.9789/2175-5361.2017.v9i3.653-658

Perfil epidemiológico da mortalidade materna por hipertensão: análise situacional de um estado nordestino entre 2004-2013

Epidemiological profile of maternal mortality due to hypertension: situational analysis of a northeastern state between 2004 and 2013

Perfil epidemiológico de la mortalidad materna en la hipertensión: un análisis de la situación nororiental estado entre 2004-2013

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How to quote this article:
Pereira GT; Santos AAP; Silva JMO; et al. Epidemiological profile of maternal mortality due to hypertension: situational analysis of a northeastern state between 2004 and 2013. Rev Fund Care Online. 2017 jul/set; 9(3):653-658. DOI: http://dx.doi.org/10.9789/2175-5361.2017.v9i3.653-658

ABSTRACT

Objective: To know the maternal mortality epidemiological profile due to pregnancy hypertensive disorders in Alagoas state, Brazil, from 2004 to 2013. **Methods:** This is an epidemiological, descriptive, documentary, cross-sectional study with a quantitative approach of a historical series from 2004 to 2013, in a Northeastern state of Brazil. Data were collected through the State Health Department of Alagoas' database. **Results:** There was a greater number of maternal deaths in women aged between 20 and 39 years old by hypertensive syndromes in 2006, due to maternal hypertension with no specific cause. **Conclusion:** Pregnancy hypertensive disorders are considered pregnancy and childbirth complications, and a major cause of maternal and perinatal mortality, deserving special attention from health professionals, linked to maternal and child health.

Descriptors: Hypertension, Pregnancy, Nursing Care, Maternal Mortality.

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RESUMO

Objetivo: Conhecer o perfil epidemiológico da mortalidade materna por meio das síndromes hipertensivas gestacionais no estado de Alagoas no período entre 2004 e 2013. **Métodos:** Estudo com delineamento epidemiológico, descritivo, documental, transversal, com abordagem quantitativa de uma série histórica no período de 2004 a 2013, em um estado do Nordeste. Os dados foram coletados através da base de dados da Secretaria Estadual de Saúde do estado de Alagoas. **Resultados:** Observou-se um número maior de óbitos maternos declarados por síndromes hipertensivas gestacionais no ano de 2006, na faixa etária entre 20 e 39 anos, por hipertensão materna com causa não específica. **Conclusão:** As síndromes hipertensivas gestacionais são consideradas importantes complicações do ciclo gravídico-puerperal, sendo uma das principais causas de morbimortalidade materna e perinatal, merecendo atenção especial por parte dos profissionais da saúde ligados à área materna-infantil. **Descritores:** Hipertensão, Gestação, Cuidados de Enfermagem, Mortalidade Materna.

RESUMEN

Objetivo: Este estudio tuvo como objetivo conocer el perfil epidemiológico de la mortalidad materna en los síndromes hipertensivos en el estado de Alagoas, en el período entre 2004 y 2013. **Métodos:** Se trata de un estudio de diseño epidemiológico, descriptivo, documental, transversal y enfoque cuantitativo de una serie histórica en el período 2004-2013 en un estado del noreste. Los datos fueron recolectados a través de la base de datos del Departamento de Estado de Alagoas Estado de Salud. **Resultados:** Hubo un mayor número de muertes maternas notificadas por los síndromes hipertensivos en el año 2006, con edades comprendidas entre los 20 y los 39 años, por hipertensión materna sin una causa específica. **Conclusión:** Los síndromes hipertensivos son considerados importantes complicaciones del embarazo y el parto, una de las principales causas de morbilidad y mortalidad materna y perinatal, mereciendo especial atención de los profesionales de la salud relacionados con la salud materna e infantil. **Descriptores:** Hipertensión, Embarazo, Cuidados de Enfermería, La Mortalidad Materna.

INTRODUCTION

Hypertensive Disorders of Pregnancy (HDP) have been the major causes of maternal and fetal mortality in developing countries and are responsible for 60% of direct obstetric maternal deaths. It is a condition occurring during gestation and causes the most harmful effects in the mother's and the baby's body.[1]

The etiology for HDP is still unknown, but the term "hypertension in pregnancy" is generically named for hypertensive syndromes to group several diseases linked to hypertension. These are characterized by pressure levels equal to or above 140 mmHg for systolic pressure and 90 mmHg for diastolic pressure.[2]

The HDP can occur without warning or with gradual development of symptoms. They can be classified as chronic hypertension, preeclampsia superimposed on hypertension, hypertension in pregnancy, which includes preeclampsia and eclampsia, as well gestational hypertension, and finally HELLP syndrome (Hemolysis, Elevated Liver Enzymes and Low Platelets).[3-4]

As risk factors for the development of syndromes, obesity, age at the extremes of reproductive age, diabetes, hypertension, nephropathy, personal or family history of pre-eclampsia or eclampsia, low-protein and high-sodium diets, low education and professional activity outside household, blood group AB, first pregnancy, multiple pregnancies, fetal hydrops and trophoblastic neoplasia stand out.[5]

Pregnant women presenting syndromes are predisposed to develop severe complications, among them: premature removal of placenta, disseminated intravascular coagulation, cerebral hemorrhage, hepatic and renal failure, pulmonary edema, hypertensive encephalopathy and retinopathy.[4]

In addition to maternal risk, hypertensive disorders of pregnancy bring risks to the developing fetus, among which there are the reduction of the oxygen and nutrient supply, low birth weight and increased risk of developing acute and chronic lung diseases.[4]

Knowing that the hypertensive disorders of pregnancy are considered the leading cause of maternal death and perinatal morbidity, this study is very important as the results obtained from the mortality situation analysis in the state of Alagoas in the last 10 years may contribute to improve preventive strategies.

Given the above, the present study aimed to assess the epidemiological profile of maternal mortality in hypertensive disorders of pregnancy in Alagoas state in the period between 2004 and 2013.

METHODS

The present study provides epidemiological, descriptive, documentary, cross-sectional approach and quantitative design. This type of study examines how the incidence (new cases) or prevalence (existing cases) of a health-related disease or condition related to health varies according to certain characteristics, such as gender, age, education, income, occurrence of the health-related disease/condition according to time, place or person.

From 2011, the variable schooling began to be collected according to education cycles, adjusting the Mortality Information System (SIM) to the standards of the Brazilian Institute of Geography and Statistics (IBGE), making it impossible, therefore, to compare data comprising different periods, taking 2011 as base.

Data collection was carried out in the months from July to October 2014 through the state database available on the State Health Department of Alagoas (SESAU). From this, researchers selected data needed to achieve the objectives of this research, by using the records related to maternal death due to hypertensive disorders of pregnancy in the period between 2004 and 2013, taking into account the following variables: the amount of deaths per year, age group (at the time of death), micro-region, marital status, education level,

type of delivery, gestational weeks and race/color. After this analysis, data were described by using descriptive statistics in the form of graphs and tables.

The study, however, had a limitation, since the change in the information systems that deal with vital statistics (SIM and SINASC) in 2006 is a limiting factor for the use and comparison of data prior to this period.

RESULTS

Through data collection, authors built a table that describes the epidemiological profile based on the time series of the study (Table 1).

Table 1 - Variables related to the epidemiological profile of maternal mortality in hypertensive disorders of pregnancy in Alagoas state, in the period between 2004 and 2013. Maceio, 2014

Variables	2006	2007	2008	2009	2010	2011	2012	2013	Total	
									Nº	%
Age groups										
15-19 years old	2	2	2	0	0	3	0	0	9	18.0
20-29 years old	4	1	1	0	4	1	2	1	14	28.0
30-39 years old	1	1	2	2	4	5	4	1	20	40.0
40-49 years old	0	2	3	0	0	0	1	1	7	14.0
Marital status										
Single	3	3	5	2	2	3	4	0	22	44.0
Married	2	3	2	0	6	5	2	2	22	44.0
Stable union	0	0	0	0	0	1	1	0	2	4.0
Uninformed	2	0	1	0	0	0	0	1	4	8.0
Race/Color										
White	1	0	0	0	1	2	1	1	6	12.0
Black	0	0	0	0	0	0	2	0	2	4.0
Brown	4	5	7	1	7	7	4	2	37	74.0
Uninformed	2	1	1	1	0	0	0	0	5	10.0
Gestational age										
Uninformed	7	6	8	2	8	9	7	3	50	100.0
Type of delivery										
Uninformed	7	6	8	2	8	9	7	3	50	100.0
Educational level (up to 2010)										
None	0	2	1	0	0	-	-	-	3	9.7
01 to 03 years	0	0	1	0	1	-	-	-	2	6.5
04 to 07 years	1	0	1	0	5	-	-	-	7	22.6
08 to 11 years	1	1	1	0	0	-	-	-	3	9.7
≥12 years	0	0	0	0	2	-	-	-	2	6.5
Uninformed	5	3	4	2	0	-	-	-	14	45.2
Educational level (from 2011)										
None						1	0	1	2	10.5
Elementary I (1st to 4th grade)	-	-	-	-	-	1	2	0	3	15.8
Elementary II (5th to 8th)	-	-	-	-	-	3	0	0	3	15.8
High School	-	-	-	-	-	0	3	1	4	21.1
Incomplete higher education	-	-	-	-	-	1	0	0	1	5.3
Graduated	-	-	-	-	-	0	1	0	1	5.3
Uninformed						3	1	1	5	26.3

(To be continued)

(Continuation)

Variables	2006	2007	2008	2009	2010	2011	2012	2013	Total	
									Nº	%
Underlying cause (CID-10)										
O10.1 - Pre-existing hypertensive heart disease complicating pregnancy, childbirth and the postpartum period	0	0	0	0	0	0	0	1	1	2.0
O11 - Pre-existing hypertensive disorder with superimposed proteinuria	0	0	1	0	1	0	0	0	2	4.0
O13 - Gestational hypertension without any significant proteinuria	1	2	2	0	1	2	0	0	8	16.0
O14.0 - Moderate preeclampsia	0	0	0	0	0	0	1	0	1	2.0
O14.1 - Severe pre-eclampsia	0	0	2	0	0	0	1	1	4	8.0
O14.9 - Unspecified preeclampsia	1	1	0	0	0	0	1	1	4	8.0
O15.0 - Eclampsia during pregnancy	0	1	0	0	0	0	1	0	2	4.0
O15.1 - Eclampsia during labor	0	0	1	0	0	2	0	0	3	6.0
O15.2 - Eclampsia in the puerperium period	2	0	1	0	0	0	0	0	3	6.0
O15.9 - Eclampsia, unspecified as to the period	2	0	1	0	3	3	1	0	10	20.0
O16 - Unspecified maternal hypertension	1	2	0	2	3	2	2	0	12	24.0

Source: SIM/MOH.

DISCUSSION

By analyzing the temporal evolution of the deaths occurred in the state of Alagoas, there was the occurrence of more cases in 2006. From then on, there has been a balance in the following years and a sharp decline in the number of deaths in 2013.

The number of maternal deaths in a country is an excellent indicator of its social reality, being inversely related to the degree of human development. It reflects, in addition to biological factors, the socioeconomic status, the quality of health care, gender inequality and the political determination of public health promotion.[6]

Despite the HDP is perfectly predictable in the puerperal pregnancy cycle, high maternal and perinatal complications persist in developing countries, among which Brazil is inserted. In developed countries, on the contrary, these complications are rare, resulting from the quality of care provided during pregnancy and childbirth.[7]

When analyzing the data relating to sociodemographic data, it was found that many of the information provided are not reported for the construction of rate indicators. This information could be used as the basis for construction of adequate care to lowering rates of maternal morbidity and mortality. Since HDP can be early diagnosed and treated, deaths related to this pathology should not be acceptable.

The reduction in mortality requires effective improvements not only related to structural issues of the current health system; there is need of a set of actions aimed at ensuring financing and improvement of management by different levels of government, improvement of interventions based on surveillance and response of severe maternal morbidity, together with humanized care actions, which are health professionals and their corporations' responsibility.[8]

The definition of pregnancy risks inherent to pregnancy in advanced age has been a concern in obstetrics, since a growing number of women worldwide have delayed the first pregnancy. In relation to maternal age, there were more cases among pregnant women in the corresponding age group from 30 to 39 years old and from 40 to 49 years old, in accordance with the literature, which considers the maternal age over 35 years old as existing gestational risk factor; this condition requires special attention during the course of prenatal.[9-10]

As for the education level of mothers who died as a result of hypertensive disorders of pregnancy, as presented in Table I of this study, there was a lack of information despite this important indicator throughout the whole period. Although it has been informed, the low level of education may contribute to the reduction of household income, leading to stress related to unemployment and to difficult integration into the labor market and, as a result, it may contribute to the emergence of hypertensive disorders during pregnancy.

Underreporting or omission of this data verified in this research is concerning in view of its epidemiological importance, since the level of education can facilitate the pregnant women's understanding of the relevant information for the good development of their pregnancy, since

hypertensive disorders of pregnancy are highly preventable. As a result of the absence of this information, the monitoring of the effectiveness of health actions for women is hindered in view of the available data, which justifies the need of training professionals involved in the reporting of these deaths.[9,11]

Another important variable to be considered is the marital status. This variable is important in view of the importance of family support to pregnant women for the development of a pregnancy without major complications, considering that a pregnant woman in a vulnerable situation tends to neglect the proper care with the pregnancy. The absence of a social support network is a major risk factor related to illness and even to death. It is believed that single pregnant women, as well as widows and legally separated women, tend to be a vulnerable group.[12-13]

This research result shows a greater number of cases related to brown color, contradicting the literature that brings the color/race black as a predominant risk factor related to skin color, thus justified by the great miscegenation in our country.[10,14]

Gestational age is an important indicator to be analyzed, since the early diagnosis of change in blood pressure is important to monitoring it and preventing complications during pregnancy, which can lead to death, both of the fetus and of the mother. Besides, once established the diagnosis of hypertension during pregnancy, maternal and fetal risks should be evaluated before deciding to interrupt early pregnancy due to gestational age, fetal vitality/maturity and disease severity.[9-10,15]

Regarding the causes that led pregnant women to death, there was predominance of cases related to unspecified maternal hypertension and to eclampsia unspecified as to the pregnancy. The literature points to eclampsia as a major cause of maternal death in developed countries and in developing countries.[9,15-16]

The importance of proper evaluation to choose the type of delivery to which the hypertensive pregnant patient will be submitted can often reduce the risk of complications resulting from hypertensive disorders, such as placental abruption and changes in fetal vitality that may indicate immediate delivery, although in many cases it is possible to choose the vaginal delivery without major risks for women.[10,15,17]

Thus, the literature states that conducting an effective prenatal care is of fundamental importance for the development of a pregnancy without major complications. The health professional is responsible for developing interventions to primary, secondary and tertiary level for the prevention of hypertension in pregnancy, starting with monitoring during prenatal care and early diagnosis of high-risk pregnant women in order to begin early, rapid and effective treatment, thus preventing maternal and fetal complications.[7,10,13]

CONCLUSION

Hypertensive disorder of pregnancy are considered important complications of pregnancy and childbirth and are one of the main causes of maternal and perinatal morbidity and mortality, deserving special attention from health professionals related to maternal and child health.

The results point to the importance of the approach based on prevention and control of hypertensive syndromes for the identification and implementation of effective interventions in reducing maternal mortality during the prenatal care, childbirth and postpartum period, and these should be government and society priorities.

The number of maternal deaths in a country is an excellent indicator of its social reality and reflects, in addition to biological factors, socioeconomic status, the quality of health care, inequality between genders and the political determination of public health promotion. This evidences the need to intensify efforts to reduce cases of maternal mortality in our country.

As strategies to be adopted, we may include a proper registration system of births and deaths, family planning, effective prenatal care, use of appropriate technologies, assistance by qualified professionals, improvement of institutional care to delivery, improvement of management by different levels of government, improvement of interventions based on epidemiological surveillance coupled with humanizing actions of care performed by professionals and institutions.

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Received on: 22/04/2016
Reviews required: No
Approved on: 25/05/2016
Published on: 10/07/2017

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