

High-risk pregnancy: clinical-epidemiological profile of pregnant women attended at the prenatal service of the Public Maternity Hospital of Rio Branco, Acre

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Abstract

Objectives: to describe the clinical and epidemiological profile of the pregnant women treated at the high-risk prenatal service of the Public Maternity Hospital of Rio Branco, Acre

Methods: a cross-sectional study of 326 pregnant women attended at the Rio Branco high risk prenatal outpatient clinic from April to May 2016. Interviews were conducted with a structured questionnaire.

Results: the results showed that the mean age of women was 28 years old, schooling equal to or higher than high school (58.8%), married / stable union (81.7%), unemployed (50%); (26.4%), four or more pregnancies (32.8%), prenatal start with gestational age ≤ 12 weeks (69.3%), and 3 to 5 prenatal consultations (58%). The most frequent clinical antecedents were obesity (35%) and chronic hypertension (8%). The most frequent clinical and obstetric complications were urinary tract infection (39.9%), weight gain (30.4%), anemia (14%), threat of abortion (11%) and gestational hypertension (10.4%)

Conclusions: knowledge about the clinical-epidemiological profile of high-risk pregnant women helps to create strategic health services instruments and, consequently, to reduce maternal mortality.

Key words *Pregnant women, Prenatal care, High-risk pregnancy*



Introduction

Pregnancy is a physiological and striking event in women's life and usually evolves to successful outcomes. This period should be seen by pregnant women and health professionals as part of a healthy life experience involving dynamic physical, social and emotional changes.¹

During pregnancy, women are subject to special conditions, inherent to the pregnancy state, which lead to changes in the metabolic processes. During this period, a small number of women present unfavorable clinical and / or obstetric conditions for their health and / or the fetus, constituting the group called high risk pregnancy.²

In general, the risk factors that may make the maternal and fetal prognosis unfavorable are individual characteristics, unfavorable sociodemographic conditions, reproductive history, clinical and obstetric conditions isolated or associated with other complications that affect the evolution of pregnancy, such as hypertension, diabetes mellitus, obesity, among others.^{1,3}

Gestational hypertension and gestational diabetes mellitus are specific conditions of the pregnancy-puerperal cycle and constitute the main reasons for maternal and perinatal morbidity and mortality.¹ Hypertensive disorders of pregnancy occur in 10% of all pregnancies around the world,^{1,4} while the occurrence of diabetes mellitus varies between 1 and 14%.^{1,5} In studies conducted in Brazil, the prevalence of gestational hypertension ranges from 0.6 to 31.1%⁶⁻¹⁰ and gestational diabetes mellitus between 0.2 to 3.4%.⁶⁻⁹

Given the occurrence of maternal mortality, prenatal care cannot predict complications of childbirth in the majority of women; however, promoting health and identifying risks may favor maternal prognosis. The detection of any risk implies the need for specialized care, with examination and / or evaluation and additional follow-up and, if necessary, referral of basic care to a more complex service level.¹¹

The objective of this study was to describe the clinical and epidemiological profile of pregnant women attending the high-risk prenatal service of the public maternity hospital in the city of Rio Branco, State of Acre, and to provide subsidies for the implementation of measures aimed at quality of prenatal care and the improvement in health outcomes.

Methods

This is a cross-sectional study, conducted in the period from April to May 2016, at the reference maternity hospital for high-risk pregnant women in the city of Rio Branco, State of Acre, Brazil.

The pregnant women living in Rio Branco, treated at the maternity hospital during the study period, and those who had some mental deficiency or verbal communication with a disabling degree were excluded. 326 women were interviewed. There were 24 losses and five refusals.

Data collection was performed through a face-to-face interview, for the application of a structured and pre-coded questionnaire. Interviews were conducted by two nurses, duly trained for this role. At the same time, the pregnant women's cards were reviewed and the data transcribed to the research instrument.

The studied variables included socioeconomic characteristics, characteristics of current pregnancy, pregnancy habits, personal and family history, preexisting clinical conditions, previous reproductive history, clinical and obstetric interurrences.

The questionnaires were reviewed and coded. Descriptive data analysis was performed to evaluate distribution and to characterize the study population. Quantitative variables were described as measures of central tendency and dispersion and qualitative variables in absolute numbers and proportions. Chi-square test and Fisher's exact test were used in the comparison of groups. The level of statistical significance was set at $p < 0.05$. Data analysis was performed in the Software Statistical Package for Social Sciences (SPSS), version 20.0 for Windows.

The study was approved by the Ethics Committee of the State Hospital Foundation of Acre - FUNDHACRE, CAAE-486221715.0.00005009.

Results

A total of 326 pregnant women attended the high-risk prenatal outpatient clinic in the city of Rio Branco, Acre, from April to May 2016. Regarding the sociodemographic characteristics, the mean age of women studied was 28 years (SD = 7.43), with a minimum of 13 and maximum of 45 years; 2.7% of pregnant women were less than 15 years of age and 21% were 35 years of age or older. Regarding schooling, 0.9% were illiterate, 27% had incomplete or complete basic education and 58.8% had a level of education equal to or higher than high school. The mean number of years studied was 10.58 (SD=7.43). The majority had companion (81.7%) and 78.5%

self-declared brown skin color; 50% were unemployed, 29.4% were employed and 13.2% were students (Table 1).

Regarding the reproductive history, 85.9% had the first gestation with ages between 15 and 34 years and 12% with less than 15 years. The mean age of the first gestation was 19.48 (SD 5.5), minimum 12 and maximum 41 years; 26.4% were primigravidae and 32.8% had three or more pregnancies, 47.8% had three or more normal births, and 13.2% had two or more cesarean deliveries (Table 2).

In the present gestation characteristics, 57.3% were in the third gestational trimester, 69.3% started prenatal care with gestational age up to 12 weeks, 58% performed three to five prenatal visits and 97.5% had single gestation. Obesity (35%), chronic arterial hypertension (8.0%), pneumopathy (5.5%) and infectious disease (4.9%) were the most frequently observed clinical antecedents in the

sample (Table 3).

The most frequent clinical and obstetric complications were urinary tract infection (39.9%), excessive weight gain (30.4%); anemia (14%), threatened abortion (11%) and gestational hypertension (10.4%) (Table 4).

Table 5 presents the prevalence of gestational hypertension and excessive weight gain according to sociodemographic variables, clinical history and obstetric interurrences. Gestational hypertension occurred in 18.4% ($p<0.001$) of obese pregnant women and in 14.3% ($p=0.044$) of those with excessive weight gain, presenting statistically significant differences between the strata. Excessive weight gain, in turn, occurred in 18.7% of pregnant women in the second gestational trimester and 31.0% ($p=0.012$) of pregnant women in the third gestational trimester; and in 48.2% ($p<0.001$) of obese pregnant women.

Table 1

Distribution of pregnant women according to sociodemographic variables. Rio Branco, Acre, 2016.

Variables			N=326	%
Age group (years)				
<15			9	2.7
15 to 34			248	76.3
35 or more			69	21.0
Age average	28.42	SD* (7.43)	Minimum 13	Maximum 45
Schooling				
No schooling			3	0.9
Incomplete/Complete Elementary School			88	27
Incomplete/Complete Highschool			150	46.1
Incomplete/Complete Higher education			85	26.0
Average years of study			10.58	SD* (3.62)
Marital status				
Single			45	13.5
Married/consensual union			267	82.3
Divorced/separated/Widow			14	4.2
Race/Color				
White			41	12.6
Brown			256	78.5
Others			29	8.9
Occupation				
Student			43	13.2
Unemployed			163	50.0
Employed			96	29.4
Others			24	7.4

*Standard deviation.

Table 2

Distribution of pregnant women according to their reproductive characteristics. Rio Branco, Acre, 2016.

Variables		N=326	%
Age of first pregnancy by age group (years)			
< 15		39	12.0
15 to 34		280	85.9
35 or more		7	2.1
Average age at first pregnancy	19,48 SD*(5.5)	Minimum 12	Maximum 41
Number of pregnancies			
One		86	26.4
Two		84	25.8
Three or more		156	47.8
Average number of pregnancies		2.98	SD* (2.0)
Number of normal births			
None		191	58.6
One		58	17.8
Two		34	10.4
Three or more		43	13.2
Number of cesarean deliveries			
None		198	60.7
One		82	25.2
Two or more		46	14.1

*Standard deviation.

Table 3

Distribution of pregnant women, according to the characteristics of the current pregnancy and clinical history. Rio Branco, Acre, 2016.

Variables		N=326	%
Gestational age (weeks)			
13 weeks or less		22	6.6
14 - 26 weeks		117	36.1
27 weeks or more		187	57.3
Mean of gestational age	27,05 SD* (8.0)	Minimum 8	Maximum 40
Gestational age of the first visit			
12 weeks or less		226	69.3
13 - 26 weeks		97	29.8
27 weeks or more		3	0.9
Average gestational age at first visit		10.84	Dp* (5.0)
Number of prenatal consultations			
2		64	19.6
3 - 5		189	58.0
6 or more		73	22.4
Average number of prenatal visits		4.22	Dp* (1.78)
Number of fetuses			
One		318	97.5
Two		8	2.5
Clinical history			
Obesity		114	35.0
Chronic arterial hypertension		26	8.0
Pneumopathy		18	5.5
Infectious disease		16	4.9
Cardiopathy		14	4.3
Gynecopathy		12	3.7

*Standard deviation.

Table 4

Distribution of pregnant women according to clinical and obstetric conditions. Rio Branco, Acre, 2016.

Variables	N=326	%
Urinary tract infection	130	39.9
Excessive weight gain	99	30.4
Bleeding of uterine origin *	62	22.7
Anemia	48	14.7
Gestational hypertension	34	10.4
Rh incompatibility	29	8.9
Toxoplasmosis	11	3.4
Gestational diabetes	8	2.5
Macrossomia	7	2.1
Lowest weight gain	6	1.8
Diseases of the respiratory tract	5	1.5
Cervical isthmus insufficiency	5	1.5
Threat of preterm labor	5	1.5

* Premature rupture of membranes, threat of abortion and placenta praevia.

Table 5

Prevalence of gestational hypertension and excessive weight gain, according to sociodemographic variables, clinical history and obstetric intercurrents. Rio Branco, Acre, 2016.

Variables	Gestational hypertension			Excessive weight gain		
	n	%	p*	n	%	p*
Age group (years)						
34	25	9.7	0.474	67	26.1	
35 or more	04	5.8		17	24.6	0.809
Schooling (years)						
Up to 7	25	8.9	0.571**	68	24.1	
8 or more	04	9.1		16	36.4	0.084
Skin color						
White	01	2.4	0.087**	12	28.6	
Not white	28	9.9		72	25.4	0.656
Gestational trimester						
2° trimester	13	9.4	0.803	26	18.7	
3° trimester	16	8.6		58	31.0	0.012
Number of deliveries						
Nulliparous	7	7.8	0.563	20	22.2	
1 to 2	17	10.6		48	29.8	
3 or more	5	6.7		16	21.3	0.254
Obesity						
No	08	3.8	<0.001	29	13.7	
Yes	21	18.4		55	48.2	<0.001
Excessive weight gain						
No	17	7.0	0.044	-	-	-
Yes	12	14.3		-	-	-
Systemic arterial hypertension						
No	-	-	-	74	24.7	
Yes	-	-	-	10	38.5	0.123

*Pearson's chi-square test; ** Fisher's exact test.

Discussion

The results of this study show that the sample has characteristics that corroborate other studies carried out with pregnant women attending public health services in Brazil, with a predominance of young, brown women who live with the partner and are economically inactive.^{12,13} Overall, the pregnant women presented good schooling with a mean of 10.58 years of study.

The mean age of studied women was 28 years. Approximately 2.7% of the pregnant women were <15 years old and 21% were aged ≥ 35 years. Pregnancy in adolescence and after 35 years of age have been related to low birth weight, low APGAR index, prematurity and greater occurrence of surgical deliveries.¹⁴

The proportion of late pregnancies defined as pregnancies that occurred at age ≥ 35 years exceeded pregnancy in early adolescence, conferred as occurring before 16 years of age.¹⁵ Possible explanations for the occurrence of pregnancies at more advanced ages are: higher socioeconomic status, higher educational level, greater participation of women in the labor market, lower parity, advances in artificial reproduction, delayed marriage and divorce rates followed by new unions.^{16,17}

Concerning prenatal care, most of women had the first consultation with gestational age ≤ 12 weeks and a little more than half performed three to five prenatal visits. A study based on data from Nascimento in Brazil, which analyzed prenatal care assistance offered to pregnant women using public and / or private health services in the country, found that 75.8% of women started prenatal care up to the 16th week of gestation.¹³ According to the recommendations of the Stork Network, prenatal care should be started up to the 12th week of gestation with a minimum of six consultations.¹⁸ When started early, prenatal care may contribute to maternal and fetal outcomes, mediated by the identification and treatment of conditions and control of risk factors. Studies have shown that indigenous and black women, low levels of schooling, higher number of pregnancies and women residing in the North and Northeast are important barriers to the early start of prenatal care.^{12,13}

The evaluation of pre-gestational nutritional status revealed a high prevalence of obesity (35%), and the clinical history was the most observed in the sample. These results contextualize with the changes in the nutritional profile observed in the Brazilian population, characterized by the decline of malnutrition and increased obesity. Importance has to be

given to the nutritional assessment of pregnant women, considering that women who begin pregnancy with obesity have a high cardio-metabolic risk and are more exposed to the development of obstetric and neonatal complications, a fact widely mentioned in the literature.^{19,20} Leading prenatal care adequately, guidelines on the risks involved, prevention of complications, and timely inter-current interventions are crucial in this group of women.

A study conducted with 164 pregnant women attended at a high-risk public maternity hospital in Goiânia, Brazil, observed that almost half (47.8%) of the pregnant women presented pre-gestational excess weight and more than half (53.4%) presented excessive weight gain during pregnancy.²¹ In this study, excessive weight gain was observed in 30.4% of pregnant women interviewed and in 48.2% of obese pregnant women. Deviations in maternal weight gain act as markers of unfavorable gestational outcomes such as hemorrhage, gestational diabetes, arterial hypertension, fetal macrosomia, cephalo-pelvic disproportion, fetal asphyxia, increased surgical births, increased postpartum weight retention, endocrine and cardiac disorders. Monitoring of weight development, nutritional monitoring and counseling, identification of associated factors and early professional intervention are important for reducing maternal and fetal risks; as well as prevention of postpartum weight retention and other complications.²²

Chronic arterial hypertension (CAH), in turn, occurred in 8% of the women evaluated. Its prevalence ranges from 2.9 to 23.1%, varying according to the service analyzed, according to different studies conducted in Brazil.^{6,7,21,23} When it is complicated, which occurs in about 5% of cases, it can lead to cardiac and / or renal changes and progress to pre-eclampsia. In some cases there may be a need for interruption of gestation before fetal maturity.²⁴

Urinary tract infection (UTI) was the most frequent clinical intercurrent in the study (39.9%). In agreement with the Ministry of Health, UTI affects 17 to 20% of pregnant women. Its clinical status can vary from asymptomatic bacteriuria, occurring in about two to 10% of pregnant women, up to the pyelonephritis. *Escherichia coli* is the etiologic agent identified in 80% of cases of asymptomatic bacteriuria.¹ The occurrence of UTI during pregnancy is related to rupture of ovary membranes, preterm labor, low birth weight infants, maternal sepsis and neonatal infection.²⁵ Early diagnosis and appropriate therapy are important during prenatal care for the prevention of associated complications.

Anemia in pregnancy can compromise maternal-fetal health and is associated with pre-eclampsia, maternal physical and mental impairment, cardiovascular changes, fetal growth restriction, prematurity, impaired fetal vitality, and increased perinatal mortality.²⁶ In this study, anemia was observed in 14% of the sample. A higher prevalence was observed in a study carried out on 549 medical records of pregnant women attended at the high risk pregnancy clinic of the Santa Casa de Misericórdia Foundation of Pará (FSCMP), obtaining a prevalence of 43.9%.⁸ Such occurrence may be justified due to the nutritional deficiency frequently observed in underdeveloped countries, especially in the North and Northeast regions of Brazil.^{27,28}

Hemorrhagic syndromes are the main causes of hospitalization of pregnant women. It occurs between 10% and 15% of pregnancies, can cause complications to the binomial according to the pregnancy period and are strongly related to prematurity.¹ Surprisingly, in this study, bleeding of uterine origin was the most prevalent intercurrent among obstetric diseases in the current pregnancy with 22.7%, in contrast to the results of a study carried out with data from the medical records of 97 high-risk pregnant women from a Basic Health Unit in the city of Paranaíba - PR, where the prevalence of bleeding during pregnancy was 6.0 %⁹ and the retrospective cross-sectional study for the period from 2006 to 2010, based on 312 records of high-risk pregnant women attended at a maternity hospital in Maceió - AL, where the prevalence was 2.6%.¹⁰ The high prevalence observed in this investigation may be related to sociodemographic characteristics of the population evaluated, stressful events, domestic violence, motherhood, multi-parity, among others.²⁹

Gestational hypertension was observed in 10.4% of the sample, occurring in 18.4% of obese pregnant women and 14.3% in those with excessive weight gain during pregnancy. Smaller prevalence was found in other studies conducted in the country.⁶⁻⁹ It is known that induced hypertension during pregnancy is the most common complication of pregnancy and one of the main causes of maternal and neonatal morbidity and mortality¹ and seems to be associated with the nutritional status of pregnant women, especially with obesity and excessive

weight gain,³⁰ which was also observed in our study. Gestational hypertension is related to hemorrhage, fetal or perinatal death, prematurity, low birth weight, restriction of uterine growth, placental abruption, premature amniorrhexis, among others.¹ Its diagnosis and correct management is crucial in the prevention of complications and improvement of maternal and fetal prognosis.

Some limitations of the present research should be mentioned, such as the use of data from the pregnant woman's booklet for the evaluation of anthropometric measures and blood pressure, without guarantee of accuracy in the technique of measurement and of the materials used, as well as the absence of information, unreadable data, unfilled fields, among others. However, it is noteworthy that the punctual collection of data from records such as the pregnant woman's booklet and hospital records is a good source of information and is widely used in other studies that study this subject.^{9,10,12,21}

In spite of the limitations, the results found are relevant to raise awareness of the clinical and epidemiological profile of high-risk pregnant women, mainly due to their direct impact on maternal, fetal and neonatal morbidity and mortality, and is still of great importance for the northern region of the country, due to the low production of studies in this area. Above all, we emphasize the importance of exploratory studies in this population.

The results of this study showed a predominance of adult pregnant women, of brown color, who lived with companions, economically inactive and with satisfactory level of schooling. In addition, the high prevalence of gestational hypertension and maternal overweight is highlighted, reinforcing the importance of preventive measures through the identification of risk factors in this population, as well as early diagnosis and adequate clinical management, in order to minimize the damage to maternal and child health.

Finally, we consider quality prenatal care decisive in this population. The clinical-epidemiological evaluation of pregnant women enables the identification of risk factors related to high-risk pregnancies and enables appropriate targeting of pregnant women to the specialized care network, contributing to the prevention of maternal and fetal complications.

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