

EPIDEMIOLOGICAL PROFILE OF HIGH-RISK PREGNANT WOMEN

Lediana Dalla Costa¹, Caroline Cales Cura², Alessandro Rodrigues Perondi³, Vivian Francielle França⁴, Durcelina Schiavoni Bortoloti⁵

ABSTRACT: The objective in this study was to outline the epidemiological profile of high-risk pregnant women attended at the *Instituto da Mulher* of the Municipal Health Department in the city of Francisco Beltrão, Brazil. Sixty-one patient histories were assessed between January and June 2015. It was verified that 82% (N=50) of the pregnant women were between 15 and 35 years of age; 47.5% (N=29) had finished secondary education; 52.5% (N=32) were married; 62.3% (N=38) were white; 88.5% (N=54) had family antecedents of chronic illness, 63.9% (N=39) related to arterial hypertension; 82% (N=50) had personal antecedents, with 52.5% (N=32) of urinary infection cases; 70.5% (N=43) were multipara. The high-risk pregnancy evolved to caesarean sections in 80.3% (N=49) of the cases. This study produced important information about the profile of this population, which allows the professionals involved in care delivery to high-risk pregnant women to play a fundamental role in the reduction of maternal mortality. In conclusion, the profile of these high-risk pregnant women seemingly does not differ from the reality in other Brazilian cities, mainly concerning hypertension as an important factor of family and personal antecedents and current prevalence.

DESCRIPTORS: High-risk pregnancy; Health profile; Prenatal care; Pregnant women; Woman's health.

PERFIL EPIDEMIOLÓGICO DE GESTANTES DE ALTO RISCO

RESUMO: O objetivo do presente estudo foi traçar o perfil epidemiológico de gestantes de alto risco atendidas no Instituto da Mulher, Secretaria de Saúde do município de Francisco Beltrão. O estudo avaliou 61 prontuários, entre janeiro e junho de 2015. Verificou-se que 82% (n=50) das gestantes tinham de 15 a 35 anos; 47,5% (n=29) possuíam o segundo grau completo; 52,5% (n=32) casadas; 62,3% (n=38) da cor branca; 88,5% (n=54) com antecedentes familiares de doença crônica, sendo 63,9% (n=39) com hipertensão arterial; 82% (n=50) com antecedentes pessoais, somando 52,5% (n=32) casos de infecção urinária; 70,5% (n=43) eram múltiparas. A gestação de risco evoluiu para cesarianas em 80,3% (n=49) dos casos. Este estudo produziu informações importantes a respeito do perfil desta população, o que permite os profissionais envolvidos no atendimento a gestante de alto risco possa exercer um papel fundamental na redução da mortalidade materna. Conclui-se que estas gestantes de alto risco aparentemente não apresentam perfil diferente da realidade de outros municípios do Brasil, principalmente quando a hipertensão foi constatada como importante fator de antecedente familiar, pessoal e prevalência atual.

DESCRIPTORIOS: Gravidez de alto risco; Perfil de saúde; Cuidado pré-natal; Gestantes; Saúde da mulher.

PERFIL EPIDEMIOLÓGICO DE EMBARAZADAS DE ALTO RIESGO

RESUMEN: El objetivo del presente estudio fue trazar el perfil epidemiológico de embarazadas de alto riesgo atendidas en el *Instituto da Mulher*, Secretaría de Salud del municipio de Francisco Beltrão. El estudio evaluó 61 archivos, entre enero y junio de 2015. Fue verificado que 82% (n=50) de las embarazadas tenían de 15 a 35 años; 47,5% (n=29) poseía el segundo grado completo; 52,5% (n=32) casado; 62,3% (n=38) del color blanco; 88,5% (n=54) con antecedentes familiares de enfermedad crónica, siendo 63,9% (n=39) con hipertensión arterial; 82% (n=50) con antecedentes personales, sumando 52,5% (n=32) de casos de infección urinaria; 70,5% (n=43) era múltipara. El embarazo de riesgo evolucionó hasta cesariana en el 80,3% (n=49) de los casos. Este estudio produjo informaciones respecto al perfil de esta población, lo que permite a los profesionales involucrados en la atención a la embarazada de alto riesgo ejercer un papel fundamental en la reducción de la mortalidad materna. Se concluye que estas embarazadas de alto riesgo aparentemente no presentan perfil diferente de la realidad de otros municipios de Brasil, principalmente cuando la hipertensión fue constatada como factor importante de antecedente familiar, personal y prevalencia actual.

DESCRIPTORIOS: Embarazo de alto riesgo; Perfil de salud; Cuidado prenatal; Embarazadas; Salud de la mujer.

¹RN.M.Sc. in Health and Work Management. Nursing Professor at Universidade Paranaense. Francisco Beltrão, PR, Brazil.

²RN. B.Sc. in Nursing. Universidade Paranaense. Francisco Beltrão, PR, Brazil.

³RN.M.Sc. in Health and Work Management. Nursing Professor at Universidade Paranaense. Francisco Beltrão, PR, Brazil.

⁴Nutritionist.Ph.D. candidate in Nutrition. Professor at Universidade Paranaense. Francisco Beltrão, PR, Brazil.

⁵Physical Educator.Ph.D. candidate in Health Sciences. Professor at Universidade Paranaense. Francisco Beltrão, PR, Brazil.

Corresponding author:

Lediana Dalla Costa

Universidade Paranaense Unidade de Francisco Beltrão

R. São Francisco de Assis, 230 - 85604-180 - Francisco Beltrão, PR, Brasil

E-mail: lediana@unipar.br

Received: 02/12/2015

Finalized: 02/06/2016

● INTRODUCTION

For some decades, woman's and child health have been studied around the world. In Brazil, although it is considered a priority, the number of deaths due to pregnancy and labor complications remains high⁽¹⁻²⁾. Among different complications, those deriving from high-risk pregnancy stand out.

A high-risk pregnancy happens when the pregnant woman presents a disease or sociobiological condition like arterial hypertension, diabetes, alcoholism, obesity and others, which impairs the evolution of the pregnancy⁽³⁾, a risk that can lead to maternal death.

In Brazil, the Maternal Mortality Index (MMI) dropped by 3.7% between 1990 and 2011. Despite this reduction, experts highlight that the results should not be considered animating, as each maternal death needs to be understood as a failure of the health system and a violation of human reproductive rights⁽⁴⁾.

Based on the data from the Mortality Information System (MIS) and the Information System on Live Births (Sinasc), available on the website of the Informatics Department of the Unified Health System (SHS), the MMI also dropped in Paraná, as the rates decreased from 51.7 in 2011 to 39 per 100,000 live births in 2012, and the preliminary data (still subject to changes) indicate a rate close to 33.4 in 2014.

A recent study published demonstrated a reduction in the global MMI between 1990 and 2013⁽¹⁾. Nevertheless, despite the important drop in the maternal mortality, more effective public health and social actions are still needed⁽⁴⁾.

In that sense, although the federal government implemented the *Rede Cegonha* (Stork Network) through decree No. 1.459, on June 24th 2011⁽⁵⁾, to complement the Humanization Program in Prenatal and Birth Care (PHPN)⁽⁵⁻⁶⁾, the State of Paraná found it necessary to create the *Rede Mãe Paranaense* (Mother from Paraná Network) Program in 2013, which is a set of actions for the early welcoming of pregnant women, with prenatal monitoring through at least seven appointments, 17 tests, risk classification of the pregnant women and the children, guaranteed specialized outpatient care for the pregnant women and children and during birth through a bonding system with the hospital according to the gestational risk⁽⁷⁻⁸⁾.

According to the *Rede Mãe Paranaense* Program, the risk classification for the pregnant woman is divided among habitual, intermediary and high risk. This classification started after the study by the Paraná State Health Department to identify maternal and child mortality in the State between 2006 and 2010, in which the main causes of death and the risk factors contributing to maternal and child mortality were identified⁽⁷⁾.

As the number of high-risk pregnancies remains high, it is extremely important to identify the factors leading to complications in a pregnancy, with a view to verifying the possible measures to be adopted in order to prevent the complications and to reduce the MMI. Hence, outlining the epidemiological profile of the high-risk pregnant women attended at different regional referral centers can offer important information to develop immediate preventive and corrective actions for these complications.

It is highlighted that, in the Southwest of Paraná, there is a lack of epidemiological studies on high-risk pregnancy. It should be highlighted that the region consists of small and medium-sized cities, located far from the large centers and lacking research institutions in obstetrics. This fact can hamper the reading of the local reality in terms of the gestational risk factors. Therefore, these study results can contribute to identify and solve the difficulties for the early identification of high-risk pregnancy in the region, besides supporting the health promotion practices.

Thus, the objective in this study was to outline the profile of high-risk pregnant women attended at the *Instituto da Mulher* of the Municipal Health Department in Francisco Beltrão, a city in the State of Paraná.

● METHOD

A descriptive, quantitative and retrospective documentary study was developed at the *Instituto da Mulher* of the Municipal Health Department in Francisco Beltrão, a city in the State of Paraná (IMSS-FB). The data were collected from the registers of the first postpartum consultation of all high-risk pregnant women (N=61) at the IMSS-FB who gave birth between January and June 2015.

A structured questionnaire was used to collect the data, which the authors elaborated based on the patient histories and the Prenatal Care Forms (FAPN). The FAPN are standardized forms of the Municipal Health Department in Francisco Beltrão and contain information on socioeconomic conditions; the first-degree family antecedents (Systemic Arterial Hypertension – SAH, Diabetes Mellitus, malformation and twinning); personal and obstetric antecedents; information about current pregnancy and physical examination.

The risk classification for the pregnant woman followed the Guideline of the *Rede Mãe Paranaense* Network of the Paraná State Health Department⁽⁷⁾, which consider the pre-existing Clinical Conditions (Arterial hypertension; Dependence from legal and illegal drugs; Cardiac diseases; Lung diseases; Kidney diseases; Endocrine diseases; Blood diseases; Epilepsy; Infectious diseases; Autoimmune diseases; Gynecological diseases; Tumors; Morbid obesity; Bariatric surgery; Psychosis and severe depression) and Clinical Problems (Infecto-contagious diseases experienced during current pregnancy – repeated urinary tract infection, respiratory diseases, German measles, toxoplasmosis, etc.; Pregnancy induced hypertension; Clinical conditions diagnosed for the first time during pregnancy – cardiac diseases, endocrine diseases; Intrauterine growth retardation; Premature labor; Abruptio placenta; Premature amniorrhexis – under 37 weeks; Uterine bleeding; Isoimmunization Rh - Rh negative); Confirmed fetal malformation.

The diagnosis of the baseline disease that led to the high-risk pregnancy was described in the FAPN, based on the above described risk classification. In this case, the International Classification of Diseases (ICD) code was not mentioned. Besides the above information, the number of consultations, the predominant type of birth and the outcome of the pregnancy were verified during the first postpartum consultation.

The patient histories were analyzed anonymously. Random numbers were attributed to preserve the pregnant women's identity.

Concerning the inclusion criteria, the patient histories were selected of the high-risk pregnant women during the study period. The exclusion criteria were consultations of pregnant women whose prenatal care was classified as habitual or intermediary risk, besides other care the IMSS-FB delivered during the same period, as well as pregnant women whose pregnancy did not evolve due to abortion during the study period.

This study received approval from the Research Ethics Committee at Universidade Paranaense, opinion 1.047.397.

To analyze the data, descriptive statistics were applied with frequency analysis to verify the general characteristics of the sample and the different risks. The statistical program SPSS (Statistical Package for Social Science), version 17.0 was used.

● RESULTS

Based on the analysis of the 61 patient histories in this study, it was verified that most of the pregnant women (82%) were between 15 and 35 years of age (N=50). In addition, 36.1% (N=22) were identified as housewives, 47.5% (N=29) held a secondary education degree, 52.5% (N=32) were married and 62.3% (N=38) were white (Table 1).

Among the pregnant women analyzed, 54 (88.5%) had family antecedents, the most prevalent being Systemic Arterial Hypertension (SAH) (63.9%), found in 39 women, followed by twinning (54.1%) (N=33) and Diabetes Mellitus (DM) (34.4%) (N=21) (Table 2).

As verified, 82% (N=50) of the women had personal antecedents. Urinary Tract Infection (UTI) was estimated in 52.5% (N=32) of the pregnant women, followed by SAH (21.3%) (N=13). It should also be

highlighted that 52.4% (N=32) of the pregnant women presented excess body weight, i.e. overweight and/or obesity, the latter alone being identified in 18% (N=11). In 36% (N=22) of the cases, there were two or more personal antecedents (Table 3).

Concerning the obstetric antecedents of the high-risk pregnant women analyzed, the majority (70.5%) (N=43) had multiple births. As for the current birth type resulting from the high-risk pregnancy, caesarean birth stood out, indicated in 80.3% (N=49) of the cases attended by the IMSS-FB (Table 4).

The main motive why the pregnant woman participated in the high-risk prenatal care was SAH, diagnosed in 24.6% (N=15) of the pregnant women, followed by 18% (N=11) obesity and 14.8% (N=9) UTI. The same pregnant woman can present more than one associated disease condition (Table 5).

Table 1 – Demographic characteristics of pregnant women characterized as high-risk prenatal care at the *Instituto da Mulher*. Francisco Beltrão, Paraná, 2015

Variables	N	%
Age Classification		
15 – 35 years	50	82
Over 35 years	11	18
Profession		
Farmer	4	6.6
Housewife	22	36.1
Administrative Aid	4	6.6
Others	31	50.5
Education		
None	4	6.6
Primary	18	29.5
Secondary	29	47.5
Higher	10	16.4
Marital Status		
Married	32	52.5
Single without fixed partner	4	6.6
Single with fixed partner	23	37.7
Separated	2	3.3
Ethnic origin		
White	38	62.3
Black	3	4.9
Mulatto	19	31.1
Unknown	1	1.6

Table 2 – Family antecedents of pregnant women classified as high-risk pregnancy at the *Instituto da Mulher*. Francisco Beltrão, Paraná, 2015

Variables	Yes N (%)	No N (%)
Family antecedents		
Systemic Arterial Hypertension	39 (63.9)	22 (36.1)
Diabetes Mellitus (DM)	21 (34.4)	40 (65.6)
Malformation	12 (19.7)	49 (80.3)
Twinning	33 (54.1)	28 (45.9)
Others	1 (1.6)	60 (98.4)
Number of family antecedents		
None	6 (9.8)	55 (90.2)
One	21 (34.4)	40 (65.6)
Two	18 (29.5)	43 (70.5)
Three	13 (21.3)	48 (78.7)
Four	3 (4.9)	58 (95.1)

Table 3 – Personal antecedents of pregnant women classified as high-risk pregnancy at the *Instituto da Mulher*. Francisco Beltrão, Paraná, 2015

Variables	Yes N (%)	No N (%)
Personal antecedents		
Systemic Arterial Hypertension	13 (21.3)	74 (8.7)
Diabetes Mellitus	1 (1.6)	60 (98.4)
Pelvic Surgery	25 (41)	36 (59)
Cardiac Disease	2 (3.3)	59 (96.7)
Urinary Tract Infection	32 (52.5)	29 (47.5)
Malformation	3 (4.9)	58 (95.1)
Obesity	11 (18)	50 (82)
Outros	5 (8.2)	56 (91.8)
Number of personal antecedents		
None	10 (16.4)	51 (83.6)
One	29 (47.5)	32 (52.5)
Two	15 (24.6)	46 (75.4)
Three	6 (9.8)	55 (90.2)
Four	1 (1.6)	60 (98.4)

Table 4 – Obstetric personal antecedents of pregnant women classified as high-risk pregnancy at the *Instituto da Mulher* and type of birth resulting from current pregnancy. Francisco Beltrão, Paraná, 2015

Variables	n	%
Nulliparous	18	29.5
Multiparous	43	70.5
Number of pregnancies		
One	18	29.5
Two	16	26.2
Three	14	23
Four or more	13	21.3
Type of birth in current pregnancy		
Normal Birth	12	19.7
Caesarean Birth	49	80.3

Table 5 –Prevalent diseases in women classified as high-risk pregnancy at the *Instituto da Mulher*. Francisco Beltrão, Paraná, 2015

Variables	N	%
Systemic Arterial Hypertension	15	24.6
Drug addiction	2	3.3
Cardiac disease	1	1.6
Lung disease	1	1.6
Kidney disease	1	1.6
Endocrine (Diabetes Mellitus, thyroid) etc)	5	8.2
Blood diseases	6	9.8
Infectious diseases	5	8.2
Auto-immune disease	1	1.6
Gynecological disease	3	4.9
Obesity	11	18
Psychosis, Depression	5	8.2
Fetal disease	8	13.1
Pelvic surgery	1	1.6
Twinning	2	3.3
Urinary tract infection	9	14.8
Other causes	22	36.1
Total events	98	--

● DISCUSSION

In this study, the profile of 61 high-risk pregnant women monitored at the IMSS-FB was analyzed. It should be reminded that some preexisting clinical conditions determine the high-risk pregnancy, as well as the clinical conditions diagnosed for the first time during pregnancy and clinical problems that occur⁽⁷⁻⁹⁾.

Most of the pregnant women were young, of fertile age, the predominant age range being between 15 and 35 years (82%). This information diverges from a study undertaken in the State of Pará⁽¹⁰⁾, at a high-risk prenatal referral center of a regional hospital, which assessed patient histories of high-risk pregnant women and found 43 cases between 16 and 25 years of age. Hence, the age did not seem to be a determining factor for the gestational risk in that study. Nevertheless, the literature reports on an increased risk in pregnancies in the adolescent phase, under the age of 15 years, and in women over 35 years of age⁽⁹⁾.

As regards education, it was observed that 47.5% of the pregnant women had finished primary education. In a study developed in the South of the State of Santa Catarina, involving the patient histories of 1510 pregnant women between 2012 and 2013, 23.9% of pregnant women were found who had not finished primary education⁽¹¹⁾. The same study identified that 52.8% of the pregnant women lived with a fixed partner, with a smaller proportion for married women (34%). In this study, the data diverge, as married pregnant women were more numerous, followed by those living with a fixed partner.

Almost all characteristics of the pregnant women in this research are similar to a study developed in Brazil between 2011 and 2012⁽¹²⁾. The authors identified demographic characteristics of 23,894 postpartum women: 70.4% were between 20 and 34 years of age, 56.8% were mulatto, 26.1% had up to eight years of education, 85.5% lived with their partner and 52.7% were multipara. The low fitness of prenatal care was also highlighted, as well as important inequalities and an inappropriate proportion of care in women with low education level, from lower economic classes, multipara and living without a partner.

According to the Technical Manual of High-Risk Pregnancy⁽⁹⁾, low education can represent a risk factor, mainly because it is related to lesser access to information and a limited understanding of the importance of health care.

Another factor analyzed was the ethnic origin. It was verified that the white color was predominant in 62.3% of the cases. In a study developed at the Woman's Care Center in the interior of Mato Grosso do Sul, considered a referral institution for high-risk prenatal care⁽¹³⁾, it was verified that 63.89% of the pregnant women were white. These results differ from the literature, which indicates that non-white ethnic origin can represent a risk factor for hypertensive syndromes in pregnant women, and represent one of the main obstetric conditions among high-risk pregnant women⁽¹⁴⁾.

The family antecedents represent an important factor in the pregnant women's risk classification. In this study, it was identified that 88.5% had some family antecedent of a chronic condition, highlighting the combination of two or more family antecedents as an aggravating factor. In one study⁽⁸⁾, it is highlighted that the sum of family or personal antecedents can increase the probability of a problem during pregnancy.

The most prevalent family antecedent was SAH, present in 63.9% of the cases. Similar results (62.5%) were found in the study developed at an inpatient Gynecology and Obstetrics service of a General and Maternity Hospital in the health system of Fortaleza⁽¹⁵⁾, a tertiary referral service for high-risk pregnancies, involving 40 pregnant women between January and February 2006.

Another aggravating factor for high-risk pregnancy found in this study referred to personal antecedents, i.e. the preliminary presence of chronic conditions or recurring infections, the most evident between UTI in the patient histories analyzed (52.5%). The risk of UTI during pregnancy was mentioned in a study⁽¹⁶⁾ as a relevant factor for complications, as it worsens both the maternal and the perinatal prognosis. In this case, it was also observed that, during the pregnancy, 14.8% of the women developed UTI.

Concerning the obstetric history in the patient histories analyzed, most (70.5%) of the women were multipara, with 23% of the cases in the third and 21.3% in the fourth pregnancy. In addition, the gestational risk of the women in this study may have led to the prevalence of 80.3% of caesarean births found in this study.

In a study of 94 pregnant women at a high-risk prenatal referral center of the *Hospital Regional do Baixo Amazonas do Pará*⁽¹⁰⁾, during a one-year period (2010-2011), 58 pregnancies (67%) resulted in caesarean birth, while 33% had a normal birth.

The Ministry of Health Technical Manual of High-Risk Pregnancy⁽⁹⁾ recommends elective caesarean section as an option in situations of repetition, that is, two or more previous scars and in cases of absolute contraindication of vaginal birth, except in situations of emergency and fetal suffering.

Concerning the cause that characterized the pregnant women's high-risk prenatal care, SAH was responsible for 15 cases, that is, women suffering from chronic SAH or who developed Pregnancy Induced Hypertension (PIH). PIH is considered one of the most important complications in the pregnancy-postpartum cycle, resulting in a high risk of maternal and perinatal morbidity and mortality⁽¹⁷⁾.

Hypertensive problems are the most common prenatal complications, affecting between 12 and 22% of the pregnancies, with eclampsia being one of the main causes of maternal death in developed and developing countries⁽¹⁵⁾.

The second main factor of forwarding to high-risk prenatal care was obesity, responsible for 11 cases. In a study of 164 pregnant women from a high-risk public maternity hospital in Goiânia, State of Goiás⁽¹⁸⁾ between January and July 2012, 47.8% were overweight before the pregnancy, while 48.5% were in appropriate nutritional conditions.

Concerning the nutritional condition during the pregnancy, more than half (52.4%) of the pregnant women presented overweight. Maternal obesity and weighted weight gain increase the risks for gestational diabetes, prolonged birth, pre-eclampsia, caesarean section and depression. For the infant, higher neonatal morbidity and a higher probability of obesity, overweight and metabolic disorders in childhood and adolescence are observed⁽¹⁹⁾.

In view of this high-risk pregnancy condition, the literature highlights that prenatal care is essential to guarantee a safe and/or healthy pregnancy, besides a safe birth and clarifications of future mothers' doubts⁽²⁰⁾. The pregnant women who receive high-quality prenatal care, with efficient and effective actions, can reduce conditions that may continue even after the end of the pregnancy, and also avoid maternal mortality, low infant weight, intrauterine growth retardation, among other complications⁽²⁾.

During prenatal care, the pregnant woman receives information about important care for the infant as well as the mother's health, such as breastfeeding, balanced diet, exercising, orientation about vaccination, besides laboratory and image tests^(9,12,21).

These study results can be relevant, mainly because they evidence that SAH, obesity and UTI are important risk factors for pregnancy problems, in accordance with the literature. Therefore, prenatal monitoring and care actions are fundamental in this population.

● FINAL CONSIDERATIONS

This study revealed that the profile of the pregnant women in the city of Francisco Beltrão, State of Paraná, who participate in high-risk prenatal care does not seem to differ from other cities in Brazil, mainly when identifying that SAH was an important factor of family and personal antecedents and current prevalence. UTI and obesity were observed and can cause complications during pregnancy.

The importance of qualified prenatal care is highlighted, considering particularly the pregnant woman's family and personal history, besides an appropriate number and length of consultations and tests taken each term, with a view to the preliminary identification of any change in the development of the pregnancy.

Although this study provided important information on the health of pregnant women, one limitation should be considered. Most recent studies on high-risk obstetrics in the Brazilian population are concentrated in the North and Northeast of the country. Hence, the results found in this study limit some comparisons with the different regions of the country. Therefore, in future studies, when the factors for high-risk pregnancy are compared, the economic, social and cultural factors among the different regions analyzed should be considered.

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