Relationship between gestational risk and type of delivery in high risk pregnancy*

Relação entre risco gestacional e tipo de parto na gravidez de alto risco

Relación entre riesgo gestacional y tipo de parto en el embarazo de alto riesgo

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* Extracted from the thesis: "Fatores associados aos desfechos maternos, fetais e neonatais em gestações de alto risco", Programa de Pós-Graduação em Enfermagem, Universidade Estadual de Maringá, 2018.

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ABSTRACT

Objective: To analyze the association between gestational risk factors and type of delivery in high-risk pregnancies. **Method:** A cross-sectional epidemiological study involving a retrospective analysis of secondary data from 4,293 medical records of high-risk pregnant women. The primary outcome was composed of risks associated with cesarean delivery and spontaneous abortion compared with normal delivery. **Results:** There were 3,448 women analyzed in the study. The primary outcome rates were cesarean delivery (72.8%), spontaneous abortion (0.9%) versus vaginal delivery (26.2%). Common risk factors for cesarean delivery and spontaneous abortion were age ≥35 years (OR = 1.4; 95% CI 1.1-1.7 / OR = 11.5; 95% CI 4.2-31.0), evangelical religion (OR = 1.4; 95% CI 1.2-1.7 / OR = 2.6; 95% CI 1.0-6.7), high blood pressure (OR = 1.4; 95% CI 1.1-1.8 / OR = 74.9; 95% CI 13.7-410.2) and twinning (OR = 3.1; 95% CI 1.9-5.0 / OR = 68.6, 95% CI 9.7-487.7). **Conclusion:** Identifying the relationship of gestational risks with the type of delivery and abortion can contribute to developing strategies and assist in planning actions in women's healthcare networks, developing specific and individualized lines of care for each gestational risk.

DESCRIPTORS

Pregnancy, High-Risk; Pregnancy Complications; Abortion, Spontaneous; Natural Childbirth; Cesarean Section; Obstetric Nursing; Maternal-Child Nursing.

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INTRODUCTION

Pregnancy is a natural and dynamic phenomenon in which the female body undergoes several physiological changes to support the growing fetus, preparing it for delivery. This transformation most often proceeds without complications, allowing women to choose the desired delivery type and mode. However, despite all the care, there are cases in which pregnant women have already health problems, making this period susceptible to worsening, comprising a high-risk pregnancy (HRP)[1].

The World Health Organization (WHO) advises that cesarean section may be beneficial in reducing maternal and perinatal morbidity and mortality in HRP when performed for medical reasons of real need; however, such a procedure has no benefits when carried out without well-defined criteria, and on the contrary it may bring additional risks for the mother/baby and future pregnancy. Still, the WHO points out that there are no reasons to justify a cesarean section rate above 15%. However, the increase in these rates is becoming frequent among developed and developing countries, being considered a serious public health problem[2-3].

Cesarean section rates vary considerably across countries and encompass several factors, whether or not associated with HRP. The most recent rates (2016) show that cesarean deliveries continue to increase worldwide, with an average global rate of 18.6%, ranging from 6.0% to 27.2% in the less and more developed regions, especially in Latin America and the Caribbean with 40.5%. The sub-region with the highest average cesarean section rate is South America, with 42.9%, and the world's leading country is Brazil, with 55.6%[3].

Studies have shown a strong association between gestational risk and caesarean sections with rates of up to 38.3%, highlighting hypertensive disorders and fetal malformations. In addition, cesarean section due to high-risk pregnancy is associated with unfavorable maternal outcomes (deaths, postpartum hemorrhage or Intensive Care Unit admission) and neonatal outcomes (low birth weight, low Apgar score at 5 minutes, death, and hospitalization in a neonatal unit)[4].

Another worrying situation in the gestational period, especially when it comes to HRP, is spontaneous abortion (SA). Studies on global, regional and subregional levels and trends indicate that a quarter of all pregnancies in the world between 2010-2014 ended in SA, with a significant increase in Latin America and the Caribbean from 23% to 32%[5]. The prevalence of SA reports in Brazil is 14%, while induced prevalence is 2.4%[6].

Among the most common causes related to abortion factors related to the fetus, such as chromosomal and congenital anomalies and/or factors pertinent to the mother regarding uterine problems, maternal diseases or infections, immunological disorders, previous history of abortion, maternal age, licit/illicit drug abuse, and pre-existing diseases such as diabetes are highlighted[7].

In this context, the reasons for the increase in interventions such as cesarean delivery and curettage in cases of abortion are multifactorial in HRP, and are not well understood by the professionals involved. Studies are scarce, as they include changes in the characteristics of women during pregnancy, the professional practice style, various social, cultural, economic and gestational factors regarding pre-existing clinical conditions (PECC) in women, obstetric antecedents (OA) and also clinical complications (CC) which may arise in the current pregnancy and may result in unfavorable outcomes for the mother-baby binomial[8-9].

Thus, a public policy was created in 2012 in order to reduce maternal and child mortality and the high rates of preventable deaths focused on pregnant women and at-risk newborns in the state of Paraná, Brazil aiming at early capture of at-risk pregnancy in the usual and specialized prenatal care, risk stratification and delivery guarantee through a referral system linked to the referral hospital[8].

In this sense, considering the current care policy for HRP, the high incidence of cesarean sections and SA, the present study aimed to analyze the association between gestational risk factors and type of delivery in high-risk pregnancy.

METHOD

STUDY DESIGN

An observational, cross-sectional epidemiological study involving retrospective analysis of secondary data of all pregnant women followed by the high-risk outpatient clinic of a philanthropic hospital in Southern Brazil and contracted to the Brazilian Unified Health System (*SUS*) in September 2012 (implantation of the outpatient clinic) to September 2017 in the maternity ward of the reference hospital.

POPULATION

A total of 4,293 high-risk pregnant women accompanied by specialized prenatal care, of whom 3,448 were eligible for delivery at the hospital and presented data regarding the procedure and/or SA outcome.

DATA COLLECTION

Data were collected by the researchers between November 2016 and October 2017 through the pregnant women's medical records, which presents a gestational risk assessment instrument composed of: PECC (systemic arterial hypertension (SAH), heart disease, lung disease, nephropathy, endocrinopathies, haemopathies, autoimmune diseases, infectious diseases, epilepsy, uterine malformation, cervical conization, uterine fibroid, neoplasms, morbid obesity, bariatric surgery, psychiatric disorders, drug dependence); OA (low birth weight <2,500g, iteractivity, placental accretism, premature placental detachment, preeclampsia/eclampsia, anterior cerclage, premature amniorrexis, recent caesarean section < 1 year, preterm labor and premature delivery); and CC (complicated urinary tract infection, pregnancy-specific hypertensive disease, intrauterine growth restriction, preterm labor, placenta previa, premature amniorrexis, RhD isoimmunization, confirmed fetal malformation, fetal macrosomia, twinning, polyhydramnio/oligohydramnios, gestational diabetes, premature detachment of the placenta and dengue/zika virus). Birth records and the consultation regulation

system of the Ministry of Health (*SISREG*) were also used to complement the medical records' data.

The dependent variable of the study was the type of delivery (normal and cesarean section) and SA, while the independent variables were the socioeconomic variables: age (up to 19 years, 20 to 34 years, 35 years or older), marital status (living with the partner/does not live with the partner), education (up to 8 years, greater than or equal to 8 years), religion (catholic, evangelical, other beliefs, no religion), race/color (white, black, brown, yellow), paid work (yes/no) and gestational risk assessment (pre-existing clinical conditions, obstetric history and clinical complications in the current pregnancy).

Maternal sociodemographic, epidemiological, clinical and obstetric characteristics were considered encompassing all possible risks related to the delivery type and/or SA, which deserve discussion and reflection from the scientific community and health professionals. It should be noted that this study includes SA because it is an outcome which terminates a pregnancy, is accounted for in the number of pregnancies in a woman's reproductive cycle and constitutes a risk for future pregnancies. At-risk pregnant women who did not deliver at the referral hospital were excluded, as they did not present data on the type of delivery.

DATA ANALYSIS AND PROCESSING

Data were typed, organized, and categorized in a Microsoft Office Excel 2017® spreadsheet. As one researcher wrote down the records, another checked the notes in order to avoid any kind of bias in data collection. In addition, the risks described in the medical records were checked with the notes.

Data processing and analysis were performed using the VGAM library of the R computer program. This analysis was performed using Nominal Multinomial Regression Models. A significance level of 10% and 5%, respectively, were used for selection of the candidate variables in the complete model (all variables) for the final model and the likelihood ratio test to compare the models. The association measure between the outcome type of delivery (normal, cesarean section or SA) and sociodemographic variables, clinical and obstetric antecedents, and clinical complications in the current pregnancy were the OR (Odds Ratio) and respective intervals with 95% confidence.

ETHICAL ASPECTS

The research complied with Resolution no. 466/2012 of the National Health Council on guidelines and regulatory standards for research involving human subjects and was approved pursuant to opinion No. 2.287.476/2017 of the Permanent Committee on Ethics in Research with Human Beings (*COPEP*) from the Universidade Estadual de Maringá.

RESULTS

Among the 4,293 medical records of pregnant women who were attended at the high-risk outpatient clinic, 80.32% (3,448) of pregnant women who delivered at the referral hospital were identified, of which 26.19% (903) performed vaginal delivery, 72.88% (2,513) cesarean delivery and 0.93% (32) SA (Figure 1).
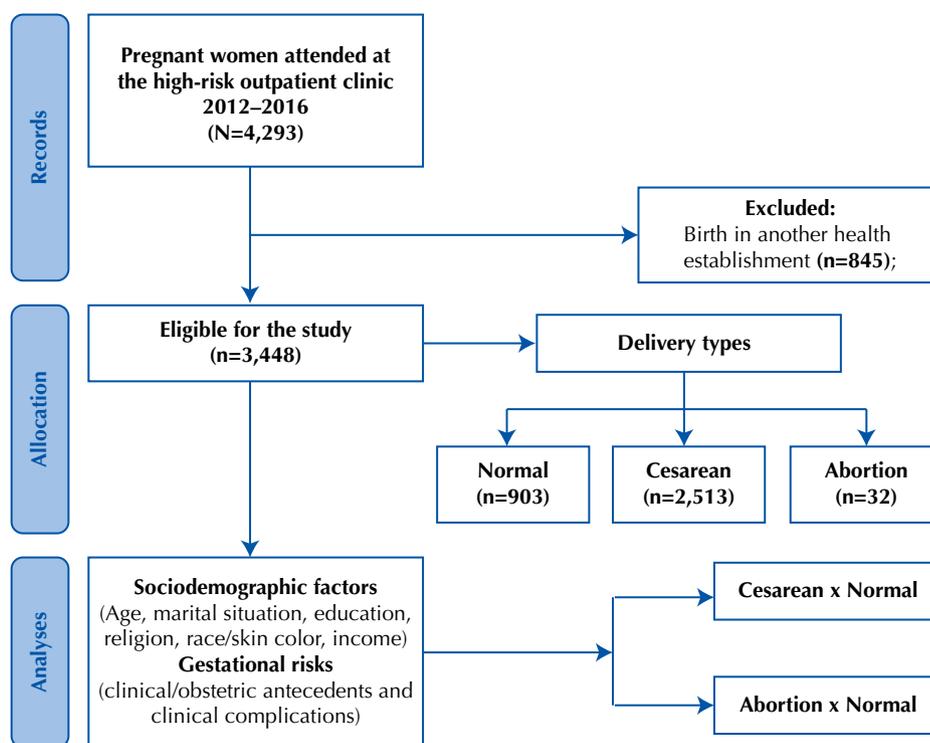

Figure 1 – Sample eligibility.

Table 1 shows the variables studied with the Odds Ratio (OR) significance in relation to the type of obstetric intervention. Factors which were significantly related to increased risk for cesarean delivery compared with normal delivery were: 35 years of age or older (OR = 1.4; 95% CI 1.1-1.7), evangelical religion (OR = 1.4; 95% CI 1.2-1.7), arterial hypertension (OR = 1.4; 95% CI 1.1-1.8), eclampsia (OR = 3.3; 95% CI 2.1-5.2), recent cesarean section (< 1 year) (OR = 21.2; 95% CI 2.9-155.1), preterm labor (OA) (OR = 1.5; 95% CI 1.0- 2.2), pregnancy-specific hypertensive disease (PSHD) (OR = 1.4; 95% CI 1.1-2.0) and twinning (OR = 3.1; 95% CI 1.9-5.0). This statistical model also showed risk factors considered to be protective and/or less likely for cesarean section to occur: age less than or equal to 19 years (OR = 0.7 95% CI 0.5-0.9), education > 8 years (OR = 0.8 95% CI 0.7-0.9), premature placental detachment (OA) (OR = 0.3 95% CI 0.1-0.8), anterior cerclage (OR = 0.5 95% CI 0.2-0.8), premature delivery (OA) (OR = 0.7 95% CI 0.6-0.9), complicated urinary tract infection (UTI) (OR = 0.6 CI95 % 0.5-0.8) and preterm labor (CC) (OR = 0.7 95% CI 0.5-0.9).

When analyzing factors which were significantly related to the increased risk of SA compared to vaginal delivery, it was noted that there was similarity in the odds ratio (OR) as a risk measure at 35 years of age or older (OR = 11.5; 95% CI 4.2-31.0), evangelical religion (OR = 2.6; 95% CI 1.0-6.7), arterial hypertension (OR = 74.9; 95% CI 13.7-410.2) and twinning (OR = 68.6; 95% CI 9.7-487.7). Endocrinopathies (OR = 8.6; 95% CI 2.3-32.6), haemopathies (OR = 36.2; 95% CI 2.7-485.9), epilepsy (OR = 49.8; 95% CI 2.3-1,091.8) and preterm labor (CC) (OR = 2,441.8; 95% CI 304.8-19,559.4) (Table 1).

Table 1 – Significance, Odds Ratio (OR) and respective confidence intervals (95% CI) of factors associated with type of delivery and spontaneous abortion – Maringá, PR, Brazil, 2018.

Factors	Cesarean *vs.* Normal birth		Spontaneous abortion *vs.* Normal birth	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Age ≤ 19 years	0.7 (0.5-0.9)	0.0041	-	0.2195
Age ≥ 35 years	1.4 (1.1-1.7)	0.0015	11.5 (4.2-31.0)	<0.0001
Education > 8 years	0.8 (0.7- 0.9)	0.0053	-	0.5058
No religion	-	0.3759	-	0.3579
Evangelical religion	1.4 (1.2-1.7)	0.0008	2.6 (1.0-6.7)	0.0446
"Other" religions	-	0.9155	-	0.9949
SAH	1.4 (1.1-1.8)	0.0129	74.9 (13.7-410.2)	<0.0001
Endocrinopathies	-	0.2859	8.6 (2.3-32.6)	0.0016
Haemopathies	-	0.6482	36.2 (2.7-485.9)	0.0068
Epilepsy	-	0.4876	49.8 (2.3-1,091.8)	0.0131
Premature placental detachment	0.3 (0.1-0.8)	0.0193	-	0.9974
Eclampsia	3.3 (2.1-5.2)	<0.0001	-	0.6388
Previous Cerclage	0.5 (0.2-0.8)	0.0127	-	0.9902
Recent cesarean section <1 year	21.2 (2.9-155.1)	0.0026	-	0.9951
Preterm labor. OA	1.5 (1.0-2.2)	0.0331	-	0.7194
Premature birth	0.7 (0.6-0.9)	0.0023	-	0.4067
Complicated UTI	0.6 (0.5-0.8)	0.0011	-	0.6055
PSHD	1.4 (1.1-2.0)	0.0250	-	0.9837
Preterm Labor. CC	0.7 (0.5-0.9)	0.0048	2,441.8 (304.8-19,559.4)	<0.0001
Twinning	3.1 (1.9-5.0)	<0.0001	68.6 (9.7-487.7)	<0.0001

DISCUSSION

The results of the present study indicate the influence of sociodemographic factors and gestational risks related to the type of obstetric intervention on the occurrence of unfavorable maternal and perinatal outcomes. Despite the relevance and interest in the subject, this is the first Brazilian study with a specific population of women with gestational risk in specialized follow-up from public health policies focused on HRP.

Analyzes show that advanced maternal age in pregnant women classified as high risk is an additional risk factor for cesarean delivery, while it is a protective factor in adolescents (≤19 years). These findings are in line with a study conducted in the UK of 215,344 births, which found an increased risk of neonatal complications and increased risk for cesarean delivery (RR = 1.83, [95% CI: 1.77–1.90])[10]. A caesarean section rate of more than four times higher was observed in other studies comparing older pregnant women (≥ 40 years) with groups of pregnant women under 30 years of age, as well as the incidence of more chronic diseases such as hypertension, gestational diabetes, frequent medical follow-up and risk of thrombosis[11-12]. It should be emphasized that comparisons made between these and other studies should take into account that the population of the present study has gestational risk, and the results may present some discrepancy compared to studies with low-risk pregnant women.

One found an increased risk of SA in high-risk pregnant women with advanced age. Corroborating this, the National Center for Chronic Disease Prevention and Health Promotion (CDC) SA surveillance report analyzing 699,202 abortions showed that abortion rates decreased between 2003 and 2012 among women between 20-24, 25-29 and 30-34 years by 24%, 18% and 10%, respectively, while they increased by 8% in women 40 years or older[13].

In this context, age is still a factor which should be considered by health professionals, especially when it is related to other gestational risks identified during prenatal care. In addition, the data presented in this study help identify women most at risk for cesarean delivery or SA in order to improve prevention and health promotion efforts with regard to family planning and pregnancy reduction guidelines in advanced age.

In the present study, it was observed that the evangelical religion was a risk factor for operative delivery and SA compared with other religions and with women who did not inform and/or claimed to have no religion. Other studies only present the preference for the delivery method, however without significant differences between women with religious beliefs and/or with specific religion; for example, in a prospective study conducted with 170 patients in the puerperal period, there was no difference between groups in relation to religious belief (p = 0.1458)[14]. However, it is noteworthy that there are several physiological transformations during the gestational period, awakening the woman's desire for their body to be as it was and to feel sexual desire after childbirth[15-16].

In this sense, further studies on the influence of religious cultures and women's sexuality on the choice of delivery type are suggested, as religion and its practice may vary for each individual, in addition to playing an important role in women's lives. Health professionals need to know the culture of each religion in order to respect and provide care according to their habits, regarding the recognition of women's sexuality and their aspirations in choosing childbirth, as well as diets, schedules, acceptances and religious prohibitions which do not harm the health and the gestational process.

Among the protective factors for cesarean section in HRP, one highlights an educational level over 8 years. One found disagreement in other studies, such as in the survey of hospital birth data recorded in the Live Birth Information System (*SINASC*) 2000-2011, in which the proportion of cesarean sections was higher among women with more than 12 years of education than among illiterate women[12]. Another study shows that low maternal education was a protective factor for operative delivery, presenting a probability of 1.88 times higher in pregnant women with education above 12 years[17].

In this scenario, one emphasizes that the HRPs in this study were attended by professionals who were specialized in the high-risk outpatient clinic in conjunction with the usual prenatal primary care, providing more opportunities for dialogue on the type of delivery; thus, gestational risk assumes a primary role in the type of delivery, because it is not a choice but a necessary intervention for the maternal and child outcome.

The findings of this study enabled us to identify that hypertension as PECC is a common risk factor for cesarean delivery, SA and for pregnancy-specific hypertensive disease (PSHD). A woman who develops eclampsia is about three times more likely to have a caesarean section than a normal delivery. A Brazilian study with groups of women with hypertensive syndrome in at-risk pregnancy shows that hypertension, in addition to being a risk for cesarean delivery, can bring unfavorable outcomes for the newborn regarding prematurity, low birth weight (LBW), low apgar scores and fetal death[18]. Another study employing a multivariate analysis on 51 communities in China found that women with SAH (RR = 2.272, 95% CI = 1.27-4.04) had a significantly higher adjusted risk for SA[19].

However, in aggravating hypertensive syndromes in pregnancy, immediate interventions should be performed by health professionals to prevent possible SA, including cesarean section, even though it may bring postoperative complications such as bleeding, infections, anesthetic reactions, as well as perinatal unfavorable outcomes[17]. It is up to health professionals involved with prenatal, habitual and risky pregnancies to continuously educate pregnant women about pre-existing clinical conditions and obstetric antecedents with regard to some lifestyle aspects such as a balanced diet, physical activity, stress control, social relationships and preventive care in their daily lives, as they are important aspects for maternal and child health, in addition to reinforcing the guidelines on reproductive planning, thus avoiding HRP.

In the present study, recent caesarean section (< 1 year) proved to be a risk factor for a new caesarean section, corroborating a case-control study which analyzed 250 cases (cesarean section) and 250 controls (normal delivery), finding that previous cesarean section was a significant predictor for recurrence of cesarean section (previous cesarean section = 1, OR = 22.71 p = 0.001)[13]. Thus, one can infer that women who already have a scar from operative delivery or who have never experienced normal delivery will rarely choose vaginal delivery, especially when it presents some gestational risk, as shown by a study with high-risk pregnant women in 2013 and 2014 with 53.7% prevalence of cesarean section[20].

In this sense, it is up to the medical professional to discuss the best way of delivery with the professional team and principally with the pregnant woman, noting that an operative delivery offers risk of uterine rupture in the following pregnancy, but in some cases it may be necessary and well indicated, especially in HRP such as multiple pregnancies of two or more fetuses, and normal delivery outweighs the risks associated with repeated cesarean delivery. Reinforcing the advantages of normal childbirth, a study conducted in India with 100 cases of previous caesarean section found that normal childbirth was successful in 85% of cases, and there were no cases of maternal and child mortality[21].

Preterm labor (PL) as an obstetric antecedent (OA) presented a risk for cesarean section in this study and premature birth (PB) as an OA protective factor, and PL as clinical complication (CC) in the current pregnancy, in addition to protection for cesarean section and SA. There are few studies relating the PL or PB in the previous pregnancy with the operative delivery in the next pregnancy. A study relates PB as a risk of cesarean section and SA in the same pregnancy[22]. A retrospective cohort study conducted in 2002-2010 in Utah (USA) with 51,086 women with consecutive pregnancy identified 3,836 (7.6%) women with prematurity in the first pregnancy, and 1,160 (30.7%) of these had a

recurrence. Thus, previous spontaneous PB was associated with a 5.6-fold increased risk of subsequent spontaneous PB[23]. Another study analyzed 9,667 deliveries, with 1,133 (11.7%) being PB. Of these, cesarean births (CB) corresponded to 790 (69.80%) and vaginal births (VB) to 343 (30.20%); however, the authors report that this difference may be related to the risks inherent in PL[24].

In this scenario, new studies are suggested relating PL and its influence on unfavorable outcomes in subsequent pregnancies, as well as better monitoring of health professionals regarding reproductive planning, thus avoiding repeated short-term pregnancies, and providing care support to women and family. There is also a need for an active search for pregnant women at usual and high-risk prenatal care as an important tool in the occurrence and recurrence of PB, as well as health education to avoid other risk factors which may influence maternal and child morbidity and mortality.

Another common risk factor for cesarean delivery and/or SA was twinning. Corroborating these data, a study conducted in Nnewi, southeastern Nigeria with 113 twin births of 3,351 births in general, had an incidence of 3.37% in a ratio of 1:29.6. The risk of cesarean section for multiple pregnancy was three times higher than that of a single pregnancy (OR = 2.9, CI: 1.48-5.76)[25]. In another study with high-risk women, multiple pregnancy as a clinical complication in the current pregnancy was at high risk for the outcome of neonatal death (OR = 6.01, CI: 1.45-24.87 p = 0.01)[26]. In a retrospective cohort study conducted in the USA with 181,810 twin pregnancies, the authors identified favorable results for normal delivery at gestational age (GA) of 32 (p = 0.03) and 33 (p<0.001) weeks, but favorable to cesarean section at 36 (p = 0.004), 37, 38 and 39 or more weeks (p<0.001), while neutral results were found at 34 and 35 weeks[27].

It is noteworthy that multiple pregnancy by itself classifies pregnant women as high risk; however, this study did not associate other risk factors and/or GA which could influence the results, which stands out as a limitation. However, the literature shows that operative delivery may be beneficial for perinatal outcomes of twin pregnancies greater than or equal to 36 weeks of gestation[26]. Thus, further studies involving twin pregnancy and other factors such as clinical and obstetric history, clinical complications and GA of the pregnant woman are suggested to better elucidate the appropriate delivery type for multiple pregnancy.

Protective factors for cesarean delivery in high-risk pregnancies include premature placental detachment (PPD), recurrent urinary tract infection (UTI) in the current pregnancy, and previous cerclage. Contrary to this study, in a research conducted in northern Tanzania between 2000 and 2010 with 39,993 deliveries and a frequency of 0.3% PPD, cesarean section was a complication due to PPD (OR 5.6; 95% CI 3.6-8.8)[28]. In another study in Iran with 1,132 pregnant women with UTI, the cesarean section rate was 47.96% (543 women) (p<0.001), also configuring as a risk factor[29]. Regarding cerclage, studies are scarce regarding the association with the type of delivery, since this procedure is performed to avoid spontaneous early birth, risks related to preterm labor, UTI, preterm premature rupture of membranes and fetal death[30].

Thus, one can infer that specialized prenatal care may have provided better information and aroused increased care in PPD, UTI and anterior cerclage for these complications to become protective factors for cesarean section. Thus, prenatal care by a multidisciplinary team and risk factor management can reduce cesarean section rates and consequently unfavorable outcomes for mother and child.

Regarding SA, the protective factors related to pre-existing clinical conditions were endocrinopathies, hemopathies and epilepsy. Contrary to this study, a review conducted between 1990 and 2013 on endocrine dysfunction and SA found that altered endocrine profile results in loss of pregnancy, especially in the early stages of pregnancy[31]. In another study, hemopathies are gestational risks for SA[32]. Regarding epilepsy, a Danish case-control study with 983,305 pregnant women in which 4,700 (0.5%) of them used antiepileptic drugs, found that the risk of SA was not increased in women diagnosed with epilepsy, only in women without diagnosis of epilepsy[33].

In this sense, high-risk prenatal care for women promote significant changes in the gestational process, since there is multidisciplinary intervention by healthcare professionals to the point of reducing unfavorable outcomes in pregnancy, especially when they are preventable.

In addition, the findings of this study draw attention to the importance of health professionals, especially those working in specialized high-risk pregnancy centers, to be aware of pre-existing clinical conditions, obstetric history and clinical complications in the current pregnancy in order to provide specific information and guidance on the risks presented by pregnant women, so that they understand the importance of performing specialized monitoring, thus ensuring the best maternal and perinatal outcome.

As a limitation of this study, data collection from secondary sources stands out compromising data eligibility, which depends on the quality of the professionals' completion. In this sense, the data were transcribed and verified by two researchers in order to avoid any bias and/or lack of information. Another limitation is the collection being performed in a single high-risk outpatient clinic, making only the description of a specific population possible, so one suggests research with other outpatient clinics which perform high-risk prenatal care.

CONCLUSION

The study identified age 35 or older, evangelical religion, high blood pressure and twin pregnancy as common risk factors for cesarean delivery and SA. Other factors for cesarean section were eclampsia, recent cesarean section (< 1 year), preterm labor and PSHD. Other risk factors for SA were endocrinopathies, haemopathies, epilepsy and preterm labor.

Identifying the relationship of gestational risks with type of delivery and SA can contribute to developing strategies and assisting in planning actions in women's healthcare networks, developing specific and individualized care lines for each gestational risk, in the sense they can help prevent and reduce

unfavorable and preventable outcomes such as cesarean delivery when not indicated and AS, thus qualifying care processes and strengthening public policies for high-risk pregnancy.

Contributions to the areas of nursing, health and public policies were based on the presentation of relationships between gestational risks and the type of delivery and/or abortion in high-risk pregnancies, in which the role of the professional nurse is of paramount importance in providing care, annotations and monitoring usual and high-risk prenatal care. In addition, the results found strengthened the discussions and the importance of this professional in the care of high-risk pregnant women, enabling nursing to improve the procedures performed at risk outpatient clinics, thereby focusing on actions and the possibility of avoiding possible problems, in turn ensuring better care to the mother/baby binomial and minimizing maternal and child mortality rates.

RESUMO

Objetivo: Analisar a associação entre fatores de risco gestacional e tipo de parto na gravidez de alto risco. **Método:** Estudo epidemiológico transversal envolvendo a análise retrospectiva de dados secundários de 4.293 prontuários de gestantes de alto risco. O desfecho primário foi composto de riscos associados ao parto cesárea e ao aborto espontâneo comparados com o parto normal. **Resultados:** Fizeram parte da análise 3.448 mulheres. As taxas do desfecho primário foram parto cesárea (72,8%), aborto espontâneo (0,9%) versus parto vaginal (26,2%). Foram identificados como fatores de risco em comum para parto cesárea e o aborto espontâneo, respectivamente, a idade ≥35 anos (OR=1,4; IC95% 1,1-1,7/OR=11,5; IC95% 4,2-31,0), religião evangélica (OR=1,4; IC95% 1,2-1,7/OR=2,6; IC95% 1,0-6,7), hipertensão arterial (OR=1,4; IC95% 1,1-1,8/OR=74,9; IC95% 13,7-410,2) e gemelaridade (OR=3,1; IC95% 1,9-5,0/OR=68,6; IC95% 9,7-487,7). **Conclusão:** A identificação da relação dos riscos gestacionais com o tipo de parto e aborto podem contribuir para o desenvolvimento de estratégias e auxiliar no planejamento de ações nas redes de atenção à saúde da mulher, desenvolvendo linhas de cuidados específicos e individualizados para cada risco gestacional.

DESCRITORES

Gravidez de Alto Risco; Aborto Espontâneo; Parto Normal; Cesárea; Enfermagem Obstétrica; Enfermagem Materno-Infantil.

RESUMEN

Objetivo: Analizar la relación entre factores de riesgo gestacional y tipo de parto en el embarazo de alto riesgo. **Método:** Estudio epidemiológico transversal abarcando análisis retrospectivo de datos secundarios de 4.293 fichas de gestantes de alto riesgo. El desenlace primario estuvo compuesto de riesgos asociados con el parto cesárea y con el aborto espontáneo comparados con el parto natural. **Resultados:** Formaron parte del análisis 3.448 mujeres. Los índices del desenlace primario fueron parto cesárea (72,8%), aborto espontáneo (0,9%) versus parto vaginal (26,2%). Fueron identificados como factores de riesgo en común para parto cesárea y el aborto espontáneo, respectivamente, la edad ≥35 años (OR=1,4; IC95% 1,1-1,7/OR=11,5; IC95% 4,2-31,0), religión evangélica (OR=1,4; IC95% 1,2-1,7/OR=2,6; IC95% 1,0-6,7), hipertensión arterial (OR=1,4; IC95% 1,1-1,8/OR=74,9; IC95% 13,7-410,2) y gemelaridad (OR=3,1; IC95% 1,9-5,0/OR=68,6; IC95% 9,7-487,7). **Conclusión:** La identificación de la relación de los riesgos gestacionales con el tipo de parto y aborto pueden contribuir al desarrollo de estrategias y auxiliar la planificación de acciones en las redes de atención a la salud de la mujer, desarrollando líneas de cuidados específicos e individualizados para cada riesgo gestacional.

DESCRIPTORES

Embarazo de Alto Riesgo; Aborto Espontáneo; Parto Normal; Cesárea; Enfermería Obstétrica; Enfermería Maternoinfantil.

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