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Perinatal repercussions of Oligohydraneum in high risk pregnancy

Repercusiones perinatales de Oligohidraneum en embarazo de alto riesgo

Repercussões perinatais do Oligoidrânio na gestação de alto risco

ABSTRACT

Objective: To analyze the perinatal results of oligohydramnias in high-risk pregnancies. Method: Epidemiological, observational, retrospective study, with a quantitative approach, carried out using secondary data from 3,448 high-risk pregnant women. Of this total, 44 pregnant women had oligohydramnias as a clinical complication. Data were collected from November 2016 to October 2017. The independent variable was oligohydramnios. The outcome variables were: prematurity, low birth weight, Apgar, fetal and neonatal deaths and type of delivery. Results: Oligohydramnios showed a statistically significant association with preterm birth ($p = 0.05$), LBW ($p < 0.001$), reduced Apgar in the first minute ($p = 0.03$) and infant death ($p = 0.01$). Conclusion: Oligohydramnios in high-risk pregnancies are associated with unfavorable perinatal outcomes such as prematurity, LBW, reduced Apgar score in the 1st and 5th minutes and infant death, highlighting the need for specialized care for pregnant women, through specialized prenatal care and quality.

DESCRIPTORS: Maternal and Child Health; Pregnancy Complications; Oligohydramnios.

RESUMEN

Objetivo: analizar los resultados perinatales de oligohidramnias en embarazos de alto riesgo. Método: Estudio epidemiológico, observacional, retrospectivo con enfoque cuantitativo, realizado con datos secundarios de 3,448 embarazadas de alto riesgo. De este total, 44 mujeres embarazadas tenían oligohidramnias como complicación clínica. Los datos se recopilieron de noviembre de 2016 a octubre de 2017. La variable independiente fue oligohidramnios. Las variables de resultado fueron: prematuridad, bajo peso al nacer, Apgar, muertes fetales y neonatales y tipo de parto. Resultados: el oligohidramnios mostró una asociación estadísticamente significativa con el parto prematuro ($p = 0.05$), LBW ($p < 0.001$), Apgar reducido en el primer minuto ($p = 0.03$) y muerte infantil ($p = 0.01$). Conclusión: Las oligohidramnias en embarazos de alto riesgo se asocian con resultados perinatales desfavorables como prematuridad, BPN, puntaje de Apgar reducido en el primer y quinto minutos y muerte infantil, lo que pone de relieve la necesidad de atención especializada para mujeres embarazadas, a través de atención prenatal especializada y calidad.

DESCRIPTORES: Salud Materno Infantil; Complicaciones del embarazo; Oligohidramnios.

RESUMO

Objetivo: Analisar os resultados perinatais da oligoidramnia em gestações de alto risco. Método: Estudo epidemiológico, observacional, retrospectivo, com abordagem quantitativa, realizado a partir de dados secundários de 3.448 gestantes de alto risco. Desse total, 44 gestantes tinham como intercorrência clínica a oligoidramnia. Os dados foram coletados no período de novembro de 2016 a outubro de 2017. A variável independente foi o oligoidrânio. As variáveis desfechos foram: prematuridade, baixo peso ao nascer, Apgar, óbitos fetais e neonatais e tipo de parto. Resultados: O Oligoidrânio apresentou associação estatística significativa com o parto pré-termo ($p=0,05$), o BPN ($p<0,001$), o Apgar reduzido no 1º minuto ($p=0,03$) e a morte infantil ($p=0,01$). Conclusão: As oligoidramnia na gestação de alto risco associa-se a resultados perinatais desfavoráveis como prematuridade, BPN, Apgar reduzido no 1º e 5º minuto e morte infantil, evidenciando a necessidade de cuidados especializados à gestante, por meio de pré-natal especializado e de qualidade.

DESCRIPTORES: Saúde Materno-Infantil; Complicações na Gravidez; Oligoidrânio.

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INTRODUCTION

Pregnancy is a physiological process that culminates in many physiological changes in women, however, they can often aggravate pre-existing conditions or develop new pathologies and / or situations that make them pregnant at high risk, for example, oligohydramnios.⁽¹⁾

Oligohydramnios can be conceptualized as a marked reduction in the amount of amniotic fluid volume (<500ml), characterized as a clinical complication during pregnancy, making it a high-risk pregnancy.^(2,3)

When analyzing the epidemiological health data related to oligohydramnios in the literature, the world population has a prevalence of about 3.9 to 5.5% of pregnancies with this comorbidity, and in Brazil, of the cases registered in 2012, observed an incidence of 0.5 to 5.5% of pregnancies with dysfunction in the amount of amniotic fluid.^(4,5)

This pathology has significant consequences for pregnant women and the neonatal, and the sooner the oligohydramnios sets in, the worse the prognosis

of the disease. One of the main problems for the fetus is restricted intrauterine growth (IUGR) due to the low production of amniotic fluid and renal mal-function of the fetus. And it is seen that babies born as a result of this clinical complication during pregnancy, are small for gestational age (SGA); with weight below the 10th percentile for gestational age, in addition to being more prone to vascular comorbidities (20 to 30%), metabolic and nervous system diseases (5 to 10%) and perinatal mortality, with about ten times more compared to a usual risk pregnancy.⁽⁶⁾

Another study points out the repercussions of Oligohydramnios with significant statistical results, highlighting the type of delivery ($p < 0.0002$; $RR = 0.32$), acute fetal distress ($p < 0.0004$; $RR = 2.2$) and the presence of malformations fetal ($p < 0.01$; $RR = 5.4$). In addition, the percentage of fetal malformations were 17.6 and 3.3%⁽⁷⁾.

Taking these data into account, the aim of this study was to analyze the perinatal results of oligohydramnios in high-risk pregnancies.

METHOD

This is an epidemiological, observational and retrospective study, with a quantitative approach, carried out using secondary data from 3.448 medical records of high-risk pregnant women. Of this total, 44 pregnant women had Oligohydramnios as a clinical complication in the current pregnancy.

Data were collected in the period from November 2016 to October 2017, using information contained in the medical records of pregnant women, a risk classification form and a newborn registry book at the reference hospital for childbirth.

The independent variable was the clinical complication of oligohydramnios. The outcome variables were: prematurity, low birth weight (LBW), Apgar <7 in the 1st and 5th minutes, fetal death, neonatal death and type of delivery (Normal and Cesarean).

The data were typed and organized in a Microsoft Office Excel 2017® spreadsheet, later processed and analyzed with the Epi Info 7.0 software, a public domain program. The data were submitted to the

chi-square (χ^2) and Fisher's exact tests at a 5% level of significance ($p < 0.05$) and a 95% confidence interval (CI).

All the standards for Research Involving Human Beings of the National Heal-

th Council (CNS Resolution 466/2012) were complied with and approved according to opinion No. 2,287,476 of the Standing Committee on Ethics in Research with Human Beings (COPEP).

RESULTS

Of the 3,448 pregnant women attended at the high-risk outpatient clinic, 44 (1.28%) were at risk for oligohydramnios, the predominant characteristics of which were: age between 20 and 34 years (72.7%), white skin (52.3%); live with their partner (54.5%); schooling equal to or greater than 8 years (52.3%); and paid work (63.6%), as shown in table 1.

Table 2 shows Oligohydramnios as a clinical complication in current pregnancy with a statistically significant association with preterm birth ($p = 0.05$), LBW ($p < 0.001$), reduced Apgar in the first minute ($p = 0,03$) and infant death ($p = 0.01$).

DISCUSSION

Looking at the most current literature, it is noted that about 4% of perinatal complications are caused by oligohydramnios. And the main consequences seen are: premature birth, low apgar (in the first and fifth minutes), in addition to accentuated respiratory problems at the time of birth, such as respiratory distress syndrome (ARDS), as usually the lung of the baby in question is not found properly matured. It is believed that type II pneumocytes do not adequately produce surfactant fluid, due to malnutrition caused by the pathology, or even not diagnosing the disease in some of the quarters, with limited use of preventive methods, such as corticosteroids used to assist in pulmonary maturation up to 34 weeks.^(4,6)

When analyzing the epidemiological data of this study carried out with high-risk pregnancies due to clinical complications in the current pregnancy, specifically due to oligohydramnios, it is possible to notice problems that remain for the fetus and the pregnant woman, such as premature birth as the main complication, followed by low birth weight, gestational age, low Apgar, and more rarely maternal and neonatal death. The latter is related to the quality of regional

Table 1 - Sociodemographic profile of pregnant women stratified as high risk with and without oligohydramnios as a clinical complication in current pregnancy. Maringá, PR - Brazil, 2019.

Variáveis	Sem Oligoidrâmnio		Com Oligoidrâmnio		p
	N	%	N	%	
Idade					0,19
10 a 19	271	97,8	6	2,2	
20 a 34	2376	98,7	32	1,3	
35 ou mais	757	99,2	6	0,8	
Cor					0,71
Branca	1959	98,8	23	1,2	
Preta	147	99,3	01	0,7	
Parda	1292	98,5	20	1,5	
Amarela	6	100,0	-	-	
Situação conjugal					0,69
Vive com o companheiro	1957	98,8	24	1,2	
Não vive com o companheiro	1447	98,6	20	1,4	
Escolaridade					0,91
< 8 anos	1653	98,8	21	1,2	
≥ 8 anos	1751	98,7	23	1,3	
Trabalho remunerado					0,35
Sim	1932	98,6	28	1,4	
Não	1472	98,9	16	1,1	

Source: Research data, 2020.

Table 2 - Association between oligohydramnios and perinatal outcomes of high-risk pregnancies, Maringá, PR - Brazil, 2020.

Resultados Perinatais	Oligoidrâmnio (n=44)		
	N	%	P
Prematuridade (<37 semanas)	20	45,5	0,05
Baixo peso ao nascer (<2.500 g)	18	40,9	<0,001
Apgar 1° min. (<7)	13	29,6	0,03
Apgar 5° min. (<7)	06	13,6	0,02
Morte fetal	01	2,3	0,30*
Morte infantil	04	9,1	0,01*
Cesárea	35	79,6	0,31

Source: Research data, 2020.

health, since the municipalities analyzed show an above-average standard with regard to maternal and child health care.

When looking at the results of the city of Maringá / PR, in general, it is noticed that the pattern of presentation of the disease is about 3% lower, when compared to other places in America. And in Brazil, in an evaluation carried out in Pernambuco with high-risk pregnancies, age threshold and similar amounts of years of study, in the period 2007 and 2008, it also obtained prevalence data similar to the bibliographic references, and with Ecuador by example. Thus, observing the epidemiological profile of pregnant women in northwest Paraná, there is a greater number of years of study, and more pregnant women over 20 years old, and this apparently contributes to a shorter permanence of the disease, and better perinatal prognosis.⁽⁴⁾

Still, with regard to maternal age, there is a close association of oligohydramnios with maternal age, it is noted that in developed countries there is a greater involvement of the young adult public. Some literature is related to the stress experienced by these women, in which most are already inserted in the labor market, and have goals to fulfill, which would generate a possible hormonal and hydroelectrolytic imbalance in the pregnant woman.⁽⁸⁾ In the present study, the pattern of manifestation has been shown to be the opposite, with a higher prevalence in pregnant women aged 10 to 19 years, predominantly adolescent public. This suggests a greater relationship with fewer years of study, and a low number of women in the labor market. In addition, what is expected is that these pregnancies are not planned, and from their own age it appears that these women do not have a steady partner. These facts would be important risk factors for triggering other pathologies.⁽⁸⁾

When analyzing the etiologies of the clinical picture of oligohydramnios, it is possible to observe that clinical and hypertensive diseases are responsible for more than half of the cases of oli-

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gohydramnios, about 54%, and another 41.5% caused by premature rupture of membranes. One of the explanations for this is that due to these abnormalities, uteroplacental insufficiency can be triggered, which can restrict fetal growth and decrease urinary output. When the etiology is due to fetal abnormalities, the main cause is genitourinary anomaly. Among these anomalies, bilateral renal agenesis, multicystic dysplastic kidney and urethral stenosis can be observed.^(4,8)

In the present analysis, there is a predominance of cases of oligohydramnios in women who are reportedly white and brown. This is evidenced by the fact that only 0,6% of black women have oligohydramnios against 1,2% and 1,5% of the public referred to a priori. When a municipality like Maringá / PR is observed, this pattern is expected, since a minority of individuals consider themselves black in the IBGE censuses, less than 10%, and also by the spectrum of regional colonization that is European Caucasian, as seen in the epidemiological data still it is more likely to amniotic fluid reduction⁽⁹⁾.

Comparing the rates of premature birth (<37 weeks), there is a significant occurrence worldwide. As in the survey carried out, it was found that 45.5% of oligohydramnios cases had premature delivery, following a pattern of occurrence of 42% of spontaneous premature delivery and 20% of premature delivery indicated, in other surveys. This associated most often with low weight for gestational age and low Apgar, these clinical events bring with them more problems such as respiratory distress syndrome (RDS) and breastfeeding difficulties. In addition, it is observed that babies resulting from complicated births and low apgar are more predisposed to delays in neuro-cognitive development, and psychiatric diseases such as attention deficit disorder (ADHD) and autism spectrum disorder^(3,10,11).

The infant mortality rate due to the consequences of oligohydramnios proved to be relatively low in the study, around 9.1%. This is due to the high number

of cesarean deliveries, also seen in the study, about 79% of cases. This type of delivery is indicated in high-risk pregnancies, such as those that evolve with oligohydramnios. However, one of the main problems is in relation to low Apgar, which will occur both in the first and in the fifth minute, neonates generally have a slower recovery rate and often require a bed containing ICU to contain the complications of discharge adaptation to the environment. And this is a big problem, because currently the region has very low locations that contain this type of room, and often mortality is related to the lack of this support.⁽¹⁰⁾

Specialized prenatal care for high-risk pregnancies, such as those caused by oligohydramnios, is very important, and different monitoring is recommended by the Ministry of Health, with respect to at least two visits per month, prescription of specific diet and corticosteroids. Besides, primary and secondary care should share information about the assistance provided by the multidisciplinary team, in order to ensure better quality of the usual and specialized prenatal care. A greater number of home visits is sugges-

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ted, as they contribute positively to the pregnant woman's psychological state, as she feels more welcomed and supported, consequently ends up taking better care of her pregnancy and avoiding outcomes such as miscarriage.^(11,12,13)

CONCLUSION

Oligohydramnios in high-risk pregnancies are associated with unfavorable perinatal outcomes such as prematurity, LBW, reduced Apgar score in the 1st and 5th minutes and infant death, highlighting the need for specialized care for pregnant women, through specialized and quality prenatal care.

In view of these results, it is necessary to reinforce the attention of the multidisciplinary team in this type of pregnancy, since the outcomes of high-risk pregnant women monitored and monitored frequently, as recommended by the Ministry of Health, evolve positively and avoid consequences such as psychological disaffections, syndromes hypertensive and physiological imbalances per se, avoiding problems in the prepartum and postpartum period. ■

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