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ANALYSIS OF THE OCCURRENCE OF PREMATURE IN A PUBLIC HOSPITAL IN THE MUNICIPALITY OF ANÁPOLIS – GOIÁS

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Abstract: Objective: To analyze the occurrence of premature birth in a public hospital in the city of Anápolis-Goiás. **Methods**: Epidemiological, retrospective, descriptive and quantitative approach study of identified cases of premature birth. The study was conducted on medical records of patients who gave birth in a public hospital from January 2018 to December 2019. **Results**: A total of 7,432 records of births were evaluated, of which 9.8% were premature. There was a significant occurrence of prematurity in parturients who did not undergo any type of follow-up, 204 (13.7%) and in those who attended less than 8 consultations, 5,074 (11.5%). Of the women who had adequate prenatal care, only 2,154 (5.5%) had premature births. **Conclusion:** The study showed that there are maternal, socioeconomic and environmental conditions that favor the high occurrence of preterm birth in public service patients and that this is avoidable with adequate prenatal care, favoring early diagnosis and treatment of pregnant women, thus reducing neonatal mortality.

Keywords: Prenatal Care, Pregnancy, High-Risk Pregnancy, Perinatal Death, Premature Birth.

INTRODUCTION

The World Health Organization (WHO) defined premature birth or preterm birth as that which takes place after the 20th week of pregnancy and before the 37th week. This situation is related to high neonatal morbidity and leads to adverse health consequences in the long term.1

Despite going through several changes and evolutions, prematurity remains a challenge for public health. Brazil, with prematurity, takes the 10th position among the countries responsible for 60% of premature births in the world, with about 340 thousand baby births. In order for there to be changes in

this scenario, it is necessary to improve the preparation of health services to better meet and support pregnant women with their needs, carrying out an adequate prenatal care for possible early identification of risk factors for premature birth, thus aiming at an intervention that contributes to the prognosis of mother and child.[11]

According to the Primary Care Protocol, there are some risk elements for preterm birth, which include: previous history of preterm birth with or without preterm labor; previous history of one or more second trimester miscarriages; maternal clinical and obstetric complications; increased physical activity; smoking; cocaine use; lack of prenatal care; high stress situations; multiple pregnancy; polyhydramnios or uterine overdistension; fetal growth restriction; congenital anomalies; premature rupture of preterm membranes; placental abruption; presence of an intrauterine device (IUD) in the uterine cavity; uterine fibroids; uterine anomalies; isthmus-cervical incompetence; maternal infections; antiphospholipid antibody syndrome; traumas and surgeries.[6]

There is also an association between skin color/race and the occurrence of preterm labor (PPT). According to the meta-analysis proposed by Oliveira et al., black women are more likely to progress to preterm labor than white women.[9] This relationship does not have a fully evidenced mechanism, but it has a perspective on social determination, which include factors such as alcohol consumption, smoking, drug addiction and prenatal care. In addition, socioeconomic status, family income, housing, occupation, education, type of maternal work and lonely motherhood are also factors that influence the occurrence of premature births. In short, black women are more exposed to worse socioeconomic conditions and poor nutrition.

Vanin, reported in his study, that urinary tract infection (UTI) is more prevalent during pregnancy, being the one that most correlated with prematurity.[13] Concomitant with the idea, Alves reiterates that UTI in pregnancy follows renal pelvic dilation and hydroureter, increased kidney size, increased urine production, change in the position of the bladder from pelvic to abdominal, reduction in bladder tone and relaxation of the muscles bladder and ureter smooth.[3] While Almeida reports that of almost 15% of women who had a preterm birth, these had a previous history of preterm birth and previous abortion.[2]

According to Almeida et al., observed in several studies, this one reported that prenatal care has a fundamental importance in the screening and diagnosis of patients who may have a preterm birth, thus having the chance to take measures that may inhibit it or may guarantee the survival of the conceptus, possibly in this case reducing morbidity and mortality.[2]

Premature birth is a complicating factor for maternal and fetal health, despite having an unknown etiology, it is pointed out as the main cause of neonatal morbidity and mortality in the world.3 Considering this, a situational health diagnosis was carried out, where it was observed that it was essential to discuss the epidemiology of premature birth in a public hospital in the city of Anápolis.

The aim of the production of the work is to single out the profiles and conditions that are most associated with the high occurrence of premature births in the public network, in order to contribute to protocols at national and regional levels. In view of the recommendations, the intention is to provide support to pregnant women, through the provision of adequate and quality prenatal care, in addition to promoting ways in which there is encouragement of public health policies aimed at the most common

etiological risk factors, prioritizing reduction the occurrence of prematurity.

Given the above, the aim of this study was to analyze the occurrence of premature birth in a public hospital in the city of Anápolis (GO) from January 2018 to December 2019.

METHODS

This is a cohort study, with an epidemiological, retrospective, descriptive and quantitative approach of identified cases of premature birth in a public hospital in the city of Anápolis (GO) from January 2018 to December 2019.

The study was carried out on the medical records of patients who had premature births in a public hospital, a reference for high-risk SUS patients, in the city of Anápolis (GO), in the years 2018 and 2019. The aforementioned public hospital performs approximately 3,700 births per year. Thus, the work consisted of an estimated population of approximately 7,400 cases in the two years of study. As inclusion criteria, the medical records of patients who were hospitalized at the institution included in the study, who delivered between the 20th and 37th week of pregnancy, were analyzed.

As exclusion criteria, incomplete medical records were dispensed with. The research was carried out through a review of the medical records of the service provided to pregnant women. Using the data collection instrument, the following were taken from the hospital records of the pregnant women: age, parity, number of prenatal consultations, place of prenatal care, type of delivery, gestational age by capurro, destination of the newborn (NB), number of abortions and clinical and obstetric complications.

Data were transcribed to a spreadsheet in MS Excel Office XP Program. Subsequently, a descriptive analysis of the data was performed, adopting the relative and absolute frequencies. The study was submitted to the Research Ethics Committee (CEP), in accordance with resolution 466/2012, approved on March 1, 2021, with Certificate of Presentation of Ethical Appraisal (CAAE) number 35114820.9.0000.5076.

RESULTS

Analyzing the occurrence of prematurity in a public hospital in the city of Anápolis-Goiás, from January 2018 to December 2019, 7,432 birth records were initially evaluated, of which 9.8% were premature. Of the parturients who constituted the study population attended at the public service and resulted in premature birth, 10.8% were under 20 years old, 9.4% were aged between 20 and 34 years old and 11.0% were women aged 35 years or more (Table 1).

Regarding parity, 7.6% of premature births were from pregnant women who were in the 1st or 2nd pregnancy and 13.7% were pregnant women who had already had at least 2 pregnancies. Regarding the number of prenatal consultations for these patients, it was noted that 204 of the parturients did not undergo any type of follow-up resulting in 13.7% of preterm deliveries, 5,074 were in less than 8 consultations, and of these 11.5% deliveries and 2,154 were in at least 8 consultations, totaling 5.5% of premature deliveries (Table 1).

According to the study data, the prenatal consultations of patients who evolved with premature birth had a predominance of 10.3% in care units for SUS users, mainly in the family health program (PSF), while 13, 7% of these pregnant women were not monitored during pregnancy and 6.8% did so in private clinics (Table 1).

It was found that among the parturients surveyed, 9.6% had no previous abortion, 10.4% had 1 episode of previous abortion, 11.5% had 2 episodes of previous abortion and 11.0% had 3 or more episodes of previous

	Births		Premature births	
	n	%	n	%
Maternal age				
< 20	1166	15,7	126	10,8
20 |– 34	5289	71,2	496	9,4
≥ 35	977	13,1	107	11,0
Parity				
0 |– 2	4714	63,4	356	7,6
> 2	2718	36,6	373	13,7
Number of consultations				
< 8	5074	68,3	582	11,5
≥ 8	2154	29,0	119	5,5
The person did not participate	204	2,7	28	13,7
Place of consultations				
Unic Health System Users	5994	83,4	617	10,3
Private offices	1233	16,6	84	6,8
Previous abortions				
0	5986	80,5	575	9,6
1	1075	14,5	112	10,4
2	262	3,5	30	11,5
3 ou +	109	1,5	12	11,0
Total	**7432**	**100**	**729**	**9,8**

Abbreviation: SUS, Unified Health System.

Table 1 – Identification of sociodemographic data and clinical profile of the studied population.

Source: Survey data, 2020

	Premature births	
	n	**%**
Intercurrences (clinical and obstetric)		
Premature rupture of membranes	195	26,7
Premature Labor	195	26,7
Pregnancy-specific hypertensive disease	180	24,7
Iteractivity	103	14,1
Fetal involvement	67	9,2
Amniotic fluid alteration	53	7,3
Infection	52	7,1
Multiple pregnancy	48	6,6
Gestational diabetes mellitus	41	5,6
placental alteration	40	5,5
Anemia in pregnancy	30	4,1
Cervical isthmus incompetence	16	2,2
Sexually transmitted infection	9	1,2
Others	65	8,9
RN's destination		
Rooming in	385	52,8
ICU	332	45,5
Death	12	1,7
Total	**729**	**9,8**

Abbreviation: ICU, Intensive Care Unit.

Table 2 – Main complications associated with the development of prematurity in the studied population

Source: Survey data, 2020

abortion (Table 1).

As for the main clinical and obstetric complications of premature births in the studied population, there was a predominance of premature rupture of the amniotic membranes (26.7%), premature labor (26.7%) and hypertensive diseases specific to pregnancy (24.7%) (Table 2).

The data showed that the fate of the newborn (NB) after preterm birth, which was 53.2%, either needed immediate help in the intensive care unit (ICU) or died soon after birth, while less than half (46.8%) went directly to rooming-in (Table 2).

DISCUSSION

The results of this study aimed to analyze the occurrence of preterm birth in a public health service in the city of Anápolis-Goiás, from January 2018 to December 2019. Many studies have been published in recent years about prematurity and this continues on an increasing curve among the main causes of neonatal morbidity and mortality in Brazil.

The city of Anápolis is the third largest city in the State of Goiás, has the state's twenty-second Human Development Index (HDI), according to the Brazilian Institute of Geography and Statistics (IBGE/2010), and an estimated population of 391,772 inhabitants, according to IBGE/2020.

In the population studied, cases of prematurity showed a very high occurrence considering the number of births per year in the service, pointing to the direct relationship with socioeconomic and biological factors of the pregnant woman.

According to the World Health Organization (WHO), pregnancy is classified as being early when the woman becomes pregnant before the age of 20, late after 35 years of age, and the considered ideal childbearing age to become pregnant comprises the interval between 20 and 34 years. As for the comparative results in relation to the age of the parturients, it was found that there was a prevalence of preterm birth at the extremes of maternal age, concluding that both early pregnancy and late pregnancy have important outcomes in prematurity.

When compared to reproductive history, pregnant women in the public service with 1 to 2 previous pregnancies have a lower percentage of prematurity when compared to more than 2 previous pregnancies, thus confirming an epidemiological profile aimed at increased risk of preterm birth in multiparous women, and increased risk with each pregnancy.

The Technical Manual for Prenatal, Childbirth and Puerperium of the Secretariat of the State of São Paulo recommends that at least 8 prenatal care consultations be carried out, preferably one in the first trimester, followed by return visits with 20, 26, 30, 34, 36, 38 and 40 weeks, recommendation recently updated by W.H.O.[5] In the current study, in relation to the number of prenatal consultations, it was noted that prematurity was present in 11.5% of cases with fewer consultations than recommended, 5.5% attended at least 8 consultations and 13,7% did not have any kind of prenatal care.

In relation to these data, it is important to analyze that despite the small difference between women who underwent prenatal care with an adequate number of consultations and those who did not, it is also important to analyze the place where the care was carried out, since in many places the service is not provided by specialist doctors or physicians, but by other health professionals, and this data is confirmed by 10.3% of prenatal consultations carried out in care units for SUS users, mainly in the family health program (PSF).

This way, the present study is in agreement with two other cross-sectional studies

carried out in the city of Cascavel-PR and Divinópolis-MG in which they state that the high prevalence of prematurity is directly related to impossible prenatal care.[4-8] This variable was investigated throughout this work and showed to be statistically effective.

The variable previous history of abortions in the studied population found, among the parturients surveyed, very similar numbers of premature births, concluding that it did not have statistical equivalence for comparison.

Based on the results found in this study, and in accordance with the literature, the main clinical and obstetric complications during pregnancy that determine the prematurity in question were: premature rupture of the amniotic membranes (RPM), premature labor (PPT) and hypertensive syndromes. In accordance with a retrospective descriptive study carried out in the city of Teresina-PI, the loss of amniotic fluids due to premature rupture of membranes and hypertensive disorders are the most prevalent complications in cases of prematurity.7 As well as, as elucidated by Santos Filho, the TPP is among the most frequent causes that result in premature birth, associated with untreated complicated UTI, or recurrence due to poor adherence to previous treatments.[12]

When comparing the number of prenatal consultations of patients who evolved with premature birth and the fate of these newborns after delivery, it was noted that there is a direct relationship between inadequate follow-up or the absence of follow-up during the gestational period with the severity of the NB. Thus, it is possible to point out a relationship with a case-control study carried out in the city of Porto Alegre-RS that elucidates the lack of prenatal care as the main cause of prematurity, demonstrating an important growth in ICU admissions of premature newborns.[10]

CONCLUSION

With the completion of the study, an estimate of the occurrence of premature births in a public service maternity hospital in the city of Anápolis (GO) was obtained, confirming the hypothesis that there are maternal, socioeconomic and environmental conditions that favor the high occurrence of premature birth in public service patients.

In accordance with the literature review, it was found that genetic, maternal behavioral and epidemiological factors are correlated with preterm birth, as well as it was shown that complications are preventable with adequate follow-up and favor the diagnosis and early treatment of pregnant women through numbers prenatal consultations and that the identification of failures in this period plays an important role in reducing neonatal mortality.

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