

CASE REPORT

EPIDEMIOLOGICAL PROFILE OF PARTURIENTS ATTENDED IN THE NORMAL CHILDREN CENTER IN A REFERENCE HOSPITAL IN GOIÂNIA

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ABSTRACT

Aim: To describe the epidemiological profile of parturients treated at Hospital e Maternidade Dona Íris in Goiânia, Goiás. **Materials and Methods:** Epidemiological, retrospective, cross-sectional, descriptive study of quantitative approach. Data from the natural birth book of pregnant women attended between September 1, 2018 and July 29, 2019 who underwent normal birth were included. The variables studied were age, type of pregnancy, health problems, gestational age, type of delivery, sex, and weight of the newborn, as well as Apgar scores at 1 and 5 minutes. **Results:** The average age was 24.25 ± 6.01 years, 51% were multiparous and 99% with single pregnancy. Prematurity was present in 11.2% and the extreme prematurity rate was 36.6% when we considered both adolescents and young adults. Concerning the comorbidities identified, 1.3% was due to hypertension and 0.3% to Diabetes Mellitus. Most newborns were male (51.2%) and weighing more than 2500 g (90.9%). Apgar score ≥ 7 was present in 92% of newborns and 98.5% in the 5th minute. **Conclusions:** The majority of the parturients were between 22 and 29 years old, multiparous, with single pregnancy and gestational age above 37 weeks. Extreme prematurity was present in 1.7% and 9.6% were premature. Most newborns were male (51.2%) and Apgar at 1 and 5 minutes greater than or equal to 7 was above 90%.

KEYWORDS: APGAR COEFFICIENT. CHILDBIRTH PREMATURE LABOR. RETROSPECTIVE STUDY. BIRTH WEIGHT.

INTRODUCTION

The pregnancy is a unique moment in a woman's life. Several physiological, social and mental changes occur during this period and quality prenatal care is essential for the pregnant woman to feel protected so that health professionals can act at the right time. Knowing how to identify potential risk factors for health complications of the mother-fetus and mother-newborn binomial allows preventing and acting on adverse events related to the obstetric health of patients and their concepts¹.

Among the risk factors for complications during pregnancy, arterial hypertension and diabetes can be highlighted. AH has already been associated with premature births, low birth weight at birth and maternal death^{2,3}. In the case of maternal diabetes, it has already been associated with a higher occurrence of stillbirths⁴, early newborn hypocalcemia and prematurity, among other complications⁵.

The World Health Organization defines preterm birth as that which occurs before the 37th gestational

week. Prematurity can be further subdivided into extreme prematurity (< 28 weeks), true preterm (28-32 weeks) and late preterm (32-37 weeks)¹. This definition is the most widely used and accepted in relation to prematurity rating nowadays^{1,6}.

In Goiânia, in the year 2017, 5956 babies were born by vaginal delivery. Of these, 11% were preterm (GA <37 weeks), 86% at term (GA ≥ 37 weeks) and 3% post-term (GA ≥ 42 weeks)⁷. If stratification according to WHO is performed, extreme prematurity in Goiânia in 2017 was of 8%, true preterm 9% and late preterm 82%. Most pregnancies were single (99%) and as for the sex of babies, both male and female accounted for 50% each. The birth weight <2,500 g was 9% and > 2,500 g was 91%, and the Apgar score in the 1st minute ≥ 7 was 14% and the score <7 was 86%⁷.

Worldwide, approximately 0.5% of all births occur before the third trimester of pregnancy. These births mostly result in neonatal deaths and correspond to 40% of infant deaths⁸.

In about 75% of prematurity cases, the etiology is

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multifactorial. Studies indicate as risk factors a previous case of prematurity, in addition to infections during pregnancy, structural abnormalities of the uterus, especially cervical failure, lifestyle (stress, strenuous work, long standing work), lifestyle habits (smoking, alcoholism and illicit drugs), very young or advanced maternal age, short interval between pregnancies, low body mass index, multiparity, among others ⁵.

Bearing in mind that innumerable variables can interfere in the health-disease process, it is necessary to characterize the epidemiological profile of parturients and newborns in order to obtain data that can serve as an auxiliary instrument in the planning of more effective actions, actions those that will provide improvements in the quality of health care for the mother-fetus and mother-newborn binomial. Understanding the epidemiology of this population will provide subsidies for comprehensive and effective care in the attention of these patients and their concepts.

Therefore, the objective of this study is to describe the epidemiological profile of parturients attended at Hospital e Maternidade Dona Íris (HMDI).

MATERIALS AND METHODS

This is a epidemiological, retrospective, cross-sectional, descriptive study with a quantitative approach. With pregnant women attended at HMDI Normal Childbirth Center in the period from September ¹, 2018 to July 29, 2019 who underwent normal delivery. Data were extracted from the normal delivery book of pregnant women attended at HMDI from September ¹, 2018 to July 29, 2019. The variables studied were age, type of pregnancy (single or multiple), risk classification at admission (diabetes, hypertension, extreme prematurity, habitual risk, fetal distress, prolonged expulsive period, fetal death and others), gestational age, characterization of obstetric history, type of previous delivery (cesarean or normal) and number of deliveries. Regarding neonates, the following characteristics were noted: sex, preterm, low weight, Apgar in the 1st and 5th minutes. The identification of the responsible professional was also noted. Pregnancy with gestational age ≥ 37 weeks was considered term, ≥ 28 weeks and <37 weeks preterm, and <28 weeks extreme prematurity^{1,6,9,10}. The data obtained were stored in the Excel® program for statistical analysis.

Continuous variables were described by mean and standard deviation, categorical by frequencies and percentiles. Comparisons of categorical variables were performed using the Chi-Square or Kolmogorov Smirnov tests. Continuous variables were compared using the Kruskal Wallis test. Correlations of nonparametric data were performed using Pearson's correlation test and parametric correlations were performed with Spearman's test. Multivariate logistic regression

was used to assess independent associations. The level of significance adopted was α = 0.05, and a 95% confidence interval.

RESULTS

The mean age of the patients was 24.25 ± 6.01 with an average gestational age of 38.31±2.57. Most patients were multiparous (52%) and had a single pregnancy (99.1%). Considering the personal history of the parturients in relation to the registered health problems, 84.9% presented habitual risk and 1.7% extreme prematurity (Table 1).

Variable	n	\bar{x} ±SD	Minimum	Maximum
Maternal Age	2769	24,25± 6,01	12,00	45,00
GA	2773	38,31±2,57	16,00	42,00
		N	%	
GA				
< 28	46			1,7
28 l- 37	265			9,6
>37	2462			88,7
Type of pregnancy				
Single	2751			99,1
Twin	24			0,9
Obstetric Background				
As for childbirth	1330			48,0
Primiparous	1442			52,0
Multiparous				
As for previous diseases				
Usual Risk	2343			84,9
Others	201			7,3
Extreme Prematurity	74			2,7
Extended Expulsive Period	38			1,4
Hypertension	35			1,3
Fetal suffering	29			1,1
Fetal Death	22			0,8
Twinning	10			0,4
Diabetes	8			0,3

\bar{x} = average. SD: Standard deviation. NB: Newborn. GA: Gestational age.

Table 1: Distribution of parturients attended at the HMDI normal delivery center in Goiânia, regarding maternal age, gestational age and obstetric history. Goiania, 2019..

Taking into account the age group and the gestational age, 47.6% of the parturients aged between 22 and 29 years were in the range of extreme prematurity, while for the parturients in the age group between 18 and 25 years, 49.5% fit into prematurity and 53.5% in the term range (Table 2).

Age range	Gestational Age					
	n	< 34 %	n	34 l- 37 %	N	≥ 37 %
< 18	17	16,8	27	12,9	262	10,7
18 l- 22	20	19,8	54	25,7	694	28,2
22 l- 26	24	23,8	50	23,8	622	25,3
26 l- 30	24	23,8	34	16,2	371	15,1
30 l- 34	8	7,9	25	11,9	292	11,9
≥ 34	8	7,9	20	9,5	216	8,8

*Test: Kruskal Wallis

Table 2: Distribution of parturients according to age group and GA attended at the HMDI normal delivery center. Goiania, 2019.

As for newborns, the average birth weight was 3085.90 ± 553.10 and the APGAR score ≥ 7 in the first minute was 92% and 98% in the fifth minute. General prematurity at delivery was present in 11.3% of parturients. The majority of newborns were male (51%). (Table 3).

Variable	n	%
Apgar 1st min		
≥ 7	2550	92,0
< 7	213	8,0
Apgar 5th min		
≥ 7	2722	98,5
< 7	42	1,5
NB Sex		
Male	1422	51,2
Female	1354	48,8

NB: Newborn. Source: Normal Delivery Book of the Normal Delivery Center of a reference hospital in Goiânia.

Table 3: Distribution of newborns regarding birth weight, APGAR and gender attended at the HMDI normal delivery center. Goiânia, 2019.

Variable	Diabetes Mellitus				p*
	No (n=2706)		Yes (n=8)		
	n	%	n	%	
Low weight					
Yes	246	9,1	–	0,0	
No	2460	90,9	8	100,0	0,371
Prematurity					
Yes	74	2,7	–	0,0	0,638
No	2678	97,3	8	100,0	
Death					
Yes	400	14,6	1	12,5	0,869
No	2346	85,4	7	87,5	

*Chi-Square Test

Table 5: Analysis of the presence of maternal Diabetes Mellitus with low weight, prematurity and fetal death identified in the HMDI's book on normal birth center. Goiânia, 2019.

In the bivariate analysis of the presence of maternal hypertension with low weight, prematurity and fetal death, there was no statistically significant difference (Table 4).

Variable	Hypertension				p*
	No (n=2681)		Yes (n=35)		
	n	%	n	%	
Low weight					
Yes	242	9,0	4	12,1	
No	2439	91,0	29	87,9	0,538
Prematurity					
Yes	74	2,7	–	0,0	0,323
No	2651	97,3	35	100,0	
Death					
Yes	396	14,6	5	14,3	1,000
No	2323	85,4	30	85,7	

*Chi-Square Test

Table 4: Analysis of the presence of maternal hypertension with low weight, prematurity and fetal death identified in the book of the normal birth center of HMDI. Goiânia, 2019.

Likewise, when the presence of maternal diabetes with low weight, prematurity and fetal death was analyzed, no statistically significant difference was found (Table 5).

When trying to correlate extreme prematurity with maternal age and previous history (previous pregnancies, types and number of previous births), no statistically significant difference was found.

Maternal age did not influence the Apgar score in the first minute, however, gestational age and the number of previous births had a significant influence on the Apgar score 5 in the first minute ($p < 0.001$). Likewise, in the analysis of the Apgar score in the fifth minute, an association with gestational age ($p < 0.001$) and previous deliveries ($p < 0.007$) was verified.

DISCUSSION

In the present study, the mean age of the patients was 24.25 ± 6.01 years. This data is similar to other epidemiological studies published in Brazil 11–13, Saudi Arabia (Wahabi et al., 2016) and the United States¹⁴. However, when it was broken down by age group, the prevalence of adolescents in the sample was higher than other studies. While the present study pointed to a rate of 11% of parturients who gave birth by normal delivery, others found rates of 2.3% to 2.7%^{4,13,14}. Regarding the parturients identified as young adults, the rate of the present study was lower than that found in the study by Kawakita et al (2016).

In the analysis of the number of previous pregnancies, the rate of primiparous pregnancies (42.7%) was lower than that of other Brazilian studies that found values ranging from 46.8%¹⁵, to 57.6%¹⁶ and higher than the rate found by Guerra, Valete and Alves (2018)¹¹. Regarding the multiparous, Santos et al. (2014)¹⁵ and Menetrier and Almeida (2016)¹⁷ identified 52.9% and 53.1% of pregnant

women, respectively. Dias and Santos, on the other hand, found a rate of 41.7%, much lower than that measured in the present study. Moreover, Guerra, Valete and Alves (2018)¹¹ found 69.7% multiparous parturients.

The 52% multiparous rate was below that found by other studies¹⁸ that identified 77.6% of multiparous women in the sample. However, the rate was higher than that of the study by Ferreira Jr et al. (2018)¹⁹ which was 36.7%. In the case of primiparous women, the value is below those found by Ferreira Jr et al. (2018)¹⁹ which was 64.3% and higher than those of Wahabi et al. (2016)⁴ and Fayed et al. (2017)¹⁸ who identified 22.4% of pregnant women as primiparous.

Considering the type of pregnancy, whether multiple or single, the data in the present study are similar to those by Wahabi et al. (2016)⁴ and de Reis et al. (2014)¹³ for single pregnancies. For multiple pregnancies, the rate was much lower than the studies by Wahabi et al. (2016)⁴ and Fayed et al. (2017)¹⁸.

The data on prematurity is similar to those of Passini Jr et al. (2014)⁵ and higher than those of Fayed et al. (2017)¹⁸, Wahabi et al. (2016)⁴, Sevnikov, Brudin and Blomberg²⁰ who found rates of 8.7%, 9% and 7.74%, respectively. Menetrier and Almeida¹⁷ found a higher rate of prematurity, 18.6%.

In the case of extreme prematurity, Fayed et al. (2017)¹⁸ and Kawakita et al. (2016)¹⁴ found that parturients under the age of 20 years presented 5.2% and 9.6% of extreme prematurity. These values are higher than the ones in the present study.

The rate of hypertension in the present study was 1.3% and that of diabetes was 0.3%. There was no association between hypertension, low birth weight, prematurity and death. The same occurred for DM.

Most NBs were male (51.2%) and this finding is confirmed in other studies that found a higher prevalence of males^{13,19,21} compared to females. On the other hand, Renner et al. (2015)²² found a higher prevalence of female newborns (51.9%) compared to the opposite sex (40.8%).

When hypertension was analyzed with the presence of low birth weight, prematurity and fetal death, there was no statistical difference in the sample. Adu-Bonsaffoh et al. (2017)² also did not find an association of hypertension with low birth weight, however, the presence of preeclampsia was associated with low birth weight in 40.7% of newborns and 35% of prematurity. Bridewell et al. (2019) also did not find an association between low birth weight, prematurity and hypertension³.

In the analysis of newborn weight, the prevalence of low birth weight (9.1%) was much lower than other studies published in Brazil^{13,17,23} and Nepal²¹, which ranged from 33.9% to 99.34%. However, the weight above 2500 g in the present study was 90.9%, well above the aforementioned studies that ranged from 0.66% to 66.1%.

Regarding the results of Apgar scores in the 1st and 5th minute equal to or greater than 7, they were 92% and

98.5%, respectively. These values were higher than Brazilian studies published between 2014 and 2016. Reis et al. (2014)¹³ found a score of 82.1% whereas in the study by Renner et al. (2015)²² the rate was 85% and Menetrier and Almeida (2016)¹⁷ found a rate of 81.5%. The score rate below 7 in the first minute was 8%. This value is below that found in the study by Adu-Bonsaffoh et al. (2017)² (34%).

In the case of a score below 7 in the fifth minute, the rate found was lower (1.5%) than that found in the studies analyzed, which ranged from 1.7% to 14.9%

CONCLUSIONS

Most parturients were in the 22 to 29 age group, were multiparous (52%), single gestation (99.1%) with gestational age over 37 weeks (88.8%).

Extreme prematurity was present in 1.7% of parturients and 9.6% are in the prematurity range.

Regarding the gender of the newborns, the majority were male (51.2%) and the Apgar score in the 1st and 5th minute greater than or equal to 7 was above 90%.

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