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EPIDEMIOLOGICAL FACTORS PREDICTING TO PREMATURITY BETWEEN PUERPERAS ATTENDED IN A HOSPITAL OF REFERENCE IN MATERNAL CHILDHOOD HEALTH

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ABSTRACT

Introduction: When it comes to preterm birth, it means the one that occurred before 37 weeks of gestation, where there is a risk for these children to become ill and thus evolve to death. **Objective:** to conduct an epidemiological survey predisposing to prematurity among postpartum women treated at a referral hospital in maternal and child health. **Method:** quantitative-descriptive study with prospective events; data collection took place in October and November 2016, with 133 postpartum women, in the Hospital Santa Casa de Misericórdia in Belém do Pará, Brazil, in the Neonatal Intensive Care Unit; used form with closed questions. **Results:** The puerperae had an average of 25 years in a stable union, complete secondary education, unemployed with 81 (60.9%); family income from one to two wages 85 (63.9%), prenatal 128 (96.2%), 133 puerperal (102) 76.6% were more than four visits. Complications 93 (69.9%), urinary tract infection 35 (96.3%) and hypertensive syndrome 30 (22.5%); use of medications 70 (53.4%), psychological factors not planning pregnancy 72 (54.1%). **Conclusion:** The prevalence of prematurity was related to the labor situation as well as infections and drug use and also not planning a pregnancy.

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INTRODUCTION

Preterm birth is one that occurs less than 37 weeks' gestation, where a premature birth has a high risk of falling ill and dying, as there is still no complete development. These complications in the process of the puerperal gravid cycle generate risks to the integrity of both the mother and newborn pain and can evolve to death (SILVA *et al*, 2010). Prematurity is the main cause of neonatal mortality and has been studied in different countries to know the real cause of a preterm birth, since what is expected of a gestation is the obtaining of a healthy newborn with minimal trauma to the mother and for the same, and in some situations this is not possible due to complications of pregnancy and childbirth (CUMAN; RAMOS, 2010). Despite obstetric and neonatal advances, an increase in prematurity has

been observed in order to reduce these increases in prematurity, it is important to use markers that allow the early identification of pregnant women who are at greater risk for preterm birth and thus enabling preventive measures in a timely manner (CUNHA *et al*, 2011). Currently, the reduction of preterm birth is one of the main goals to be achieved in prenatal care, and one of the major unresolved problems, and that its incidence has remained stable over the years, despite the great efforts developed for its anticipation, when it is aimed at an adequate prevention of preterm labor, it is important to identify its risk factors during prenatal care (SILVA *et al*, 2016). It is important to identify and evaluate pregnant women with these conditions, in order to outline strategies to prevent prematurity and its consequences, due to short-term and long-term neonatal morbidity and the associated costs, obstetric care should focus on the need for delivery. Therefore, in addition to a greater risk of morbidity and mortality for the newborn, there are also high financial

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costs to the health system when compared to the term (PORTO *et al.*, 2013). The main way to intervene and prevent complications or risks is precisely the knowledge and monitoring of the factors leading to preterm birth, as well as the conditions of birth, considering the general condition, the health conditions of the mother and the care provided in the process of birth, the main milestone of the puerperal gravid cycle (CUMAN; RAMOS, 2010). Prevention is one of the great challenges, because it is not only a medical problem, but also an educational and social one, which becomes more complex, so social and biological risk factors can lead to prematurity as well (PIZZANI; LOPES; MARTINEZ, 2012). The identification and reasons that are leading to preterm delivery are important before the pregnancy is completed at 38 weeks. Looking for the best care to avoid unfavorable maternal and fetal outcomes, it is relevant to have an adequate follow-up and a holistic view with these pregnant women to avoid complex situations during pregnancy that can lead to delivery before 38 weeks (BETTIOL; BARBIERI; SILVA, 2010).

MATERIALS AND METHODS

The study had a descriptive quantitative approach with prospective events. The main objective of the study was to verify the biopsychosocial factors that lead the puerperae to preterm birth. The survey was carried out at the Fundação Santa Casa de Misericórdia do Pará (FSCMPA), located in the city of Belém, at Rua Oliveira Belo, nº 395, Bairro Umarizal, reference hospital in maternal and child health. The FSCMPA has 406 beds, being 100% attending the SUS, has five outpatient clinics referenced by the Basic Health Unit for various medical specialties, that is, the consultations are marked via Basic Health Units. Participation of the research subjects occurred voluntarily, after signing the Term of Free and Informed Consent-TCLE and the Term of Free and Informed Consent-TALE, the survey had as a sample 133 postpartum participants aged 15 years to 44 years of age who were with children hospitalized in the Santa Casa de Misericórdia Foundation Hospital of Pará, born prematurely, identified during the consultation and confirmed by medical records. Data collection took place in October and November 2016, in the morning and evening shifts for 60 days, with 133 postpartum women. The participants were selected after a previous selection, in which they were patients aged 15 to 44 years, with children hospitalized at the Santa Casa de Misericórdia Foundation Hospital of Pará, born prematurely, that is, with gestational age less than 37 weeks. We excluded postpartum women who were not within the age group of selection, who did not have children hospitalized, and who did not have a child born prematurely, that is, with gestational age less than 37 weeks, and who had some mental disorder. The data were analyzed using the program Microsoft Excel 2013, and Bioestat 5.3 that allowed the construction of tables and graphs, for the ordering of the data that were collected. From the elaborated tables and the use of the filters the analyzes with the information aggregated in the tables were later exported to the program. The quantitative analysis of the data occurred in a statistical way, considering that throughout the study, a theoretical and scientific basis was used regarding the bibliography related to the subject, providing the interpretation and analysis of the data.

RESULTS

From 03 October to 11 November 2016, 133 postpartum women were interviewed at the Santa Casa de Misericórdia

Foundation Hospital, who had preterm deliveries and agreed to participate in the study using the terms previously mentioned. The form containing questions related to epidemiological factors predisposing to prematurity was applied. From this, the following results were obtained, thematic axes: Socio-demographic distribution; distribution according to biological factors; distribution according to psychological factors.

Sociodemographic distribution of puerperal women attending the Santa Casa de Mercy Hospital in the state of Pará: According to the Table 1, the women interviewed had a mean age of 25.48 years (standard deviation of 6.99), ranging from 15 to 44 years. In relation to the marital status, 84 (63.2%) of the puerperae declare a stable union, 24 (18%) single, 20 (15%) married, 04 (3%) divorced and 01 (0.8%) widow. In relation to schooling, the majority finished high school 46 (34.6%), but 81 (60.9%) of the women did not engage in any economic activity. Since 85 (63.9%) have a family income of between 01 and 02 minimum wages. In terms of housing, 87 (65.4%) of the puerperal women had their own home, of which 93 (69.9%) lived in the masonry house. As shown in Table 1.

Table 1. Distribution of the puerperas of the Santa Casa de misericórdia hospital in the state of Pará according to the socio-demographic profile

	n	%
Age (years)		
15 – 20	40	30,1
21 – 26	42	31,6
27 – 32	25	18,8
33 – 38	18	13,5
39 – 44	08	6,0
Average: 25.48 years		
Standard Deviation: 6.99		
Marital status		
Stable bond	84	63,2
Singles	24	18,0
Married	20	15,0
Divorced	04	3,0
Widow	01	0,8
Education		
Fundamental Incomplete	25	18,8
Fundamental Complete	15	11,3
Incompleto	33	24,8
Average Complete	46	34,6
Superior	14	10,5
Labor Situation		
Maid	44	33,1
Unemployed	81	60,9
Receiving Benefit	08	6,0
Family income (in minimum salaries)		
1 – 2	85	63,9
2 – 4	43	32,3
≥ 5	05	3,8
Own House		
Yes	87	65,4
No	46	34,6
Type of Home		
Masonry	93	69,9
Wood	40	30,1
TOTAL	133	100,0

Source: Research data, 2016

It was verified that out of 113 interviewed women, 13 (22%) were single mothers and 45 (78%) were in stable union. Relative to family income, 47 (89%) reported less than two minimum wages, while 35 (60%) were unemployed. These results showed that teenage pregnancy is a factor of higher concentration of complications such as prematurity. This reality can also be perceived in relation to the age from the age

of 40, where many women seek financial and marital stability since the majority maintains a stable union and in terms of schooling and family income there is similarity. Regarding table 2, 119 (89.5%) had tap water in their homes and 14 (10.5%) did not have piped water distribution, and 128 (96.2%) reported have electric power and 5 (3.8%) do not have this type of service. When using illicit drugs, only 1 (0.7%) reported use and 132 (99.3%) did not use illicit drugs. Therefore, in our results it was observed that the majority were not drug users, and compared with other literature there was no divergence of data.

Table 2. Distribution of the puerperas of the Santa Casa de misericórdia hospital in the state of Pará according to the socio-demographic profile. (cont.)

	<i>n</i>	<i>%</i>
<i>Piped water</i>		
Yes	119	89,5
No	14	10,5
<i>Electricity</i>		
Yes	128	96,2
No	05	3,8
<i>Smoker</i>		
Yes	07	5,3
No	126	94,7
<i>Alcohol use</i>		
Yes	06	4,5
No	127	95,5
<i>Use of illicit drugs</i>		
Yes	01	0,7
No	132	99,3
TOTAL	133	100,0

Source: Research data, 2016

Table 3. Distribution of the puerperas of the Santa Casa de misericórdia hospital in the state of Pará according to the biological factors related to prematurity

	<i>n</i>	<i>%</i>
<i>Pré-natal</i>		
Yes	128	96,2
No	05	3,8
<i>Number of pré-natal consultations</i>		
None	05	3,8
A	06	4,5
Two	07	5,3
Three	13	9,8
≥ Four	102	76,6
<i>He presented pré-natal complications</i>		
Yes	93	69,9
No	40	30,1
<i>Pré-natal complications</i>		
Hypertensive Syndrome	30	22,5
Urinary tract infection (UTI)	35	26,3
Placenta previa	03	2,3
Other	65	48,9
<i>Pré-natal infection</i>		
Yes	72	54,1
No	61	45,9
<i>Treatment for prenatal infection</i>		
Yes	62	46,6
No	71	53,4
<i>Prenatal Exams for DST's</i>		
Yes	128	96,2
No	05	3,8
<i>Use of medications during prenatal care</i>		
Yes	70	52,4
No	63	47,4
<i>Types of medications</i>		
None	63	47,4
Antihypertensives	09	6,8
Antibiotics	22	16,5
Other	39	29,3
TOTAL	133	100,0

Source: Research data, 2016

Distribution of puerperal women attended at the Santa Casa de Mercy Hospital in the State of Pará according to the biological factors related to prematurity: Regarding prenatal care, it was observed that 128 (96.2%) answered that yes and 05 (3.8%) emphasized that they did not perform prenatal consultations (Table 3). Still in table 3, when questioned about the number of prenatal consultations, it was observed that of 133 women, 102 (76.6%) performed more than 4 prenatal consultations. In Table 3, in relation to prenatal complications, 93 (69.9%) had the most complication, and 40 (30.1%) did not present this complication, and among these complications 35 (26.3%) had UTI and 30 (22.5%) had hypertensive syndrome. Analyzing Table 3, we can consider that with regard to the examinations for sexually transmitted diseases (STDs) carried out in prenatal care, 128 (96.2%) did the tests for STDs and 05 (3.8%) did not do the same examinations. Regarding medication use, 70 (52.4%) used a medication and 63 (47.4%) did not use it, 9 (6.8%) took anti-hypertension, 22 (16.5%) use of antibiotics, and 39 (29.3%) made use of other types of medication as stated in Table 3. These results showed that even women who were giving birth prematurely, most had at least one prenatal visit, Table 3 shows that most performed more than four prenatal visits. Analyzing what refers to the prenatal complications, most had some complication that leads to premature delivery among these complications the hypertensive syndrome and UTI is highlighted not only in this study but also compared to other literature. Prenatal care is an important factor since many factors that can affect both mother and child are detected can be treated or controlled.

Diagnosis of pathologies related to prematurity, of puerperal attended at the Santa Casa de Misericórdia hospital in the state of Pará: In the results found in Table 4, it was possible to identify that among the diagnoses of the diseases related to prematurity, 04 (3.0%) of the puerperae presented a diagnosis for VDRL and 129 (97.0) stated that they did not have this disease, 133 (100%) of the participants reported not having hepatitis B / C; Rubella and Cytomegalovirus during gestation. According to table 4, 67 (50.4%) of the interviewees had Urinary Tract Infection (UTI) and 66 (49.6%) did not report this condition during pregnancy. Regarding the treatment for UTI 58 (43.3%) did the same, and 75 (56.4%) did not perform any type of treatment for UTI. However, regarding the trimester of this treatment, it was observed that 75 (56.4%) of the parturients did not or did not report on the accomplishment of the same, and 31 (23.3%) reported that they were treated in the 2nd trimester of pregnancy. Regarding prenatal uroculture, 133 (100%) of the sample studied did not perform prenatal uroculture. As shown in Table 4. When checking the results found in table 4, it was observed that, there was a low incidence of prematurity related to VDRL, Toxoplasmosis, HIV, Hepatitis B-C; Rubéola and Citamegalovirus, confirming with the research of Souza and Botelho (2011), where of only 257 puerperae (0.4%) had diagnosis of VDRL and HIV with the same percentage associated with preterm delivery. It is observed that there was no difference in the results of Table 4, because compared to this research, the findings confirm that most of the puerperal women (50.4%) had ITU, (46.6%) were treated. Therefore, we have identified that urinary infection in pregnancy is common, due to anatomical and physiological changes of the urinary tract, but it becomes an aggravating factor for preterm labor. The result of the present study shows that (100%) of the interviewees did not perform uroculture during prenatal care.

Table 4. Distribution of the puerperas of the Santa Casa de Misericórdia hospital in the state of Pará according to the diagnosis of pathologies related to prematurity

	n	%
VDRL		
Yes	04	3,0
No	129	97,0
Toxoplasmosis		
Yes	01	0,7
No	132	99,3
HIV		
Yes	01	0,7
No	132	99,3
Hepatitis B/C; Rubella and Cytomegalovirus		
Yes	00	0,0
No	133	100,0
Urinary Tract Infection (UTI)		
Yes	67	50,4
No	66	49,6
Treatment for UTI		
Yes	58	43,6
No	75	56,4
Quarter (UTI Treatment)		
Not treated or not informe	75	56,4
1st quarter	23	17,3
2nd quarter	31	23,3
3rd quarter	04	3,0
Performed uroculture in prenatal care		
Yes	00	0,0
No	133	100,0
TOTAL	133	100,0

Source: Research data, 2016

Table 5. Distribution of puerperal women at the Santa Casa de Misericórdia hospital in the state of Pará according to the psychological factors related to prematurity

	n	%
Pregnancy was planned		
Yes	61	45,9
No	72	54,1
Pregnancy was accepted		
Yes	128	96,2
No	05	3,8
There was support from the spouse in pregnancy		
Yes	123	92,5
No	10	7,5
There was support from parents in pregnancy		
Yes	128	96,2
No	05	3,8
TOTAL	133	100,0

Source: Research data, 2016

Psychological factors related to prematurity among puerperal patients attended at the holy house of mercy hospital in the State of Pará: In relation to the psychological factors related to prematurity, 61 (45.9%) reported that pregnancy was planned and 72 (54.1%) did not do so. In reference to the support of the spouse the majority should support this with 123 (92.5%) but 10 (7.5%) did not have the same. We can verify that the fact of the pregnancy not being planned can directly interfere with the prematurity since the majority did not plan the same one.

DISCUSSION

When comparing the results found with the findings in the literature, it can be observed that in the study in a study entitled "The Risk Factors for Premature Birth in Puerperas who had preterm birth", the age group of women interviewed ranged from 19 to 24 years old, and most had already finished high school (SOUZA; BOTELHO, 2011). Regarding marital status, in a study with the topic "maternal risk factors for

prematurity in a public maternity of Imperatriz-MA" (ALMEIDA *et al*, 2013). In the study the pregnant women with more advanced age present health risks that channel to the premature birth, having as predisposition factor, previous history of gestation with premature birth (PESSOA *et al*, 2015). When comparing the results found, it was not possible to identify statistically significant differences in relation to smoking and alcoholism with prematurity, because of 58 women, 54 (93%) and 53 (91%) did not use tobacco and alcohol respectively (ALMEIDA *et al*, 2013). Regarding the use of illicit drugs in their study entitled "evaluation of the factors associated with the occurrence of prematurity in a tertiary teaching hospital", 109 (94.8%) did not use these drugs, out of a total of 115 women (MADI *et al*, 2012). Comparing with the studies entitled "Profile of preterm newborns admitted to the high complexity hospital intensive care unit", the range of gestational complications occurred in 67.9% of the cases, among them, infections of the treatment were the most common in 28% of pregnant women, followed by hypertensive syndrome in 17%. In the studies the intercurrent rate occurred in 49 (92.4%) puerperae of 53 mothers who had preterm infants (MADI *et al*, 2011; ALMEIDA *et al*, 2012; ALMEIDA *et al*, 2013; PESSOA *et al*, 2015). It shows that of 104 women with preterm infants 95 had some intercurrents in the prenatal period and in these cases 31 were UTIs and 73 other infections such as discharge, diabetes, polyhydramnios. Entitled "Maternal characteristics in pregnancies with risk of late prematurity" the hypertensive syndrome appears as the third condition for preterm delivery (SILVA *et al*, 2009; PORTO *et al*, 2013). Regarding the use of medications, during pregnancy also did not represent a risk factor for prematurity. Among the drugs considered in the research, we highlight the antibiotics and, in a smaller number of medications of continuous use such as antihypertensives, antidepressants and anti-obesity agents (PORTO *et al*, 2013). In the research carried out with the theme "Complications caused by the infection of the urinary tract during pregnancy" of 80 (100%) pregnant women 50 (62.5%) had a diagnosis of UTI, 46.25% reported that they were treated, 16.5 % did not undergo treatment (MATA *et al*, 2014). Comparing with the studies the pregnancy was not planned with 62%, and 86% had the support of the conjugate (ALVES *et al*, 2016). In the study, more than half with 80% did not have this support of the conjugate, which contradicts the study (BRASIL, 2011; ARAUJO *et al*, 2016).

Conclusion

Based on the results from the study, it can be concluded that in relation to the socio-demographic profile, the average number of women was 25, 48 years old, civil status in a stable union, complete secondary education and the labor situation at unemployed majority, where we can consider that there may be a factor directly related to prematurity, since the lack of a job is exposed to an inadequate diet. In this study, the use of legal and illegal drugs directly related to preterm birth was not evidenced, since the results were low for this category. Regarding the biological factors analyzed in this sample, it was observed that most of them had prenatal consultations and a large part presented complications in the same, where it was corroborated that the high incidence of urinary tract infection and the hypertensive syndrome contribute to the anticipation of births before 37 being shown to be an aggravating factor for prematurity, as well as the use of drugs as antibiotics. We have shown that syphilis, toxoplasmosis and HIV are not correlated

with preterm labor since the data obtained were not significant. In diseases such as hepatitis, rubella and cytomegalovirus no woman presented. Another important factor to consider is that many women did not perform the treatment of this infection which can trigger other infection processes and thus favoring prematurity. The psychological causes were evidenced in the case of unplanned pregnancies, where the prevalence was among the women who did not plan to become pregnant, suggesting that preterm birth is related to this cause, since planning to conceive does not only prepare the body and yes the social. The data obtained together allowed us to complement that assessing the profile of the mothers is important in the determination of the risks related to prematurity, being these aspects factors that can contribute to soften the situation of preterm deliveries.

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