PROFILE OF NEONATAL DEATHS: A STUDY IN A GOIÂNIA PUBLIC MATERNITY

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ABSTRACT

Introduction: The World Health Organization (WHO) defines fetal death as that which occurs before the complete expulsion or extraction of the product from the conception of the maternal organism, regardless of the duration of pregnancy Objectives: To trace the profile of fetal deaths in a public maternity hospital in Goiânia. Describe the main causes of fetal death. Analyze the characteristics of deaths occurred and declared. Analyze risk factors associated with the occurrence of fetal death. Methods: Retrospective cross-sectional ecological study. Results: The main factors that culminated in fetal death are 18.5% Premature Labor. The main cause of fetal death was prematurity with 28%. The unit's fetal mortality rate is 22.8 deaths per 1000 births, but the profile is of high risk, which justifies the data. As for the maternal factors presented and related to fetal deaths, it was observed that of 131 (95.6%) pregnancies with one or more children, 104 (75.9%) were born alive, while 64 (46.7%) were born dead. Of these pregnant women, 27 (19.7%) had one or more abortions; 20 (14.7%) had ruptured amniotic membranes and 36 (26.3%) ruptured pouch during pregnancy. Among all the pregnant women evaluated, 22 (16%) presented Systemic Arterial Hypertension as the main complication in the current pregnancy. Among the factors associated with pregnancy and which led to fetal death, Prematurity was found in 39 (18.5%) of pregnant women. In this study, it was also found that 96 (65.3%) of the pregnant women did not use medication during pregnancy and, when used, the main drugs were antihypertensive drugs 14 (9.5%). As a condition for hospitalization, 42 (31%) pregnant women died of fetal death and motherhood was the place where the majority of births occurred, 133 (97%). Of all deliveries performed, 90 (65.7%) were vaginal, and in 98 (71.5%) the obstetrician was the professional who conducted the procedure. When cesarean section was indicated, acute fetal distress was the deciding factor in 12 patients, totaling 25.2% of all pregnant women whose indication for delivery was surgical. The prevailing gestational age in 75 (54.7%) had less than 31 weeks of gestation that constitutes extreme preterm, with a predominant weight in 66 (48.2%) <1000 grams being classified in extremely low weight. The presence of meconium was present in 30 (22%) of fetal deaths. Conclusion: Regarding the observed fetal characteristics, the following deaths were found: male, extreme preterm (<31 weeks), extremely low birth weight (<100g), normal birth. An important data that draws attention was the large amount of underreporting in relation to the type of anesthesia performed during cesarean section, neonatal resuscitation and birth conditions. It was observed that almost half of those born were not sent to the autopsy service. Having found arterial hypertension as the main cause of fetal death in this population is not surprising, since other studies carried out in the country have identified this same cause.

KEYWORDS: FETAL MORTALITY, DEATHS, MATERNITY

INTRODUCTION

The World Health Organization (WHO) defines fetal death as that which occurs before the complete expulsion or extraction of the product of conception from the maternal organism, regardless of the duration of pregnancy[1].

Although there is no consensus on the definition of fetal death, the Ministry of Health (2012) conceptualizes it as the death occurring in the uterus at any gestational age, from fertilization, before the complete exteriorization of the maternal body[2,3].

Fetal death can be classified as: a) early: up to 20 weeks of gestation and fetal weight up to 500 grams; b) intermediate: between 20 and 28 weeks of gestation and fetal weight between 500 and 1000 grams; c) late: after 28 weeks of gestation and weighing more than 1000 grams[2,4].

Fetal mortality results from a complex articulation between biological factors, social conditions and the care provided by health services. Despite the evident importance of fetal death as a public health problem, little attention has been paid to this issue, especially regarding its epidemiology; fetal death has rarely been analyzed

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separately from perinatal and infant mortality. Some risk factors have been associated with fetal death. A number of them can be prevented and treated. However, in many cases of fetal loss, no factor can be clearly detected[1,5].

It is known that neonatal mortality is associated with the quality of health care, being the main factor in infant mortality since the 1990s in the country[6]. The first month of life is the most vulnerable period for a child's survival. With an average global rate of 17 deaths per 1,000 live births in 2019. Globally, 2.4 million children died in the first month of life in 2019 and approximately 6,700 neonatal deaths every day with about a third of all neonatal deaths they occur on the first day after birth and about three quarters in the first week of life[7]. Neonatal death is one that occurs within 27 days of delivery. Death in this period reflects socioeconomic and reproductive conditions, as well as those related to the quality of prenatal care, during childbirth and with the newborn, demonstrating gaps in the organization of the health network[8].

It is estimated that, worldwide, fetal deaths occur in the same number as neonatal deaths. In Brazil, in 2007, 30,677 neonatal deaths and 30,123 fetal deaths with more than 22 weeks of gestation were reported. The concept of Fetal Mortality Rate or Coefficient implies the number of fetal deaths (occurring from the 22nd full week of gestation, or 154 days or fetuses weighing 500g or more or height from 25 cm) per thousand births totals, in the population residing in a given geographic area, in the considered year. Total births include live births and stillbirths. In order to reduce the incidence of fetal death in the antepartum period, it is essential to have knowledge about its etiology. However, 40 to 50% of cases are said to have an undefined cause[1,8].

Given this, the objective of this research is to trace the profile of infant deaths in a public maternity hospital in Goiânia.

METHODS

Retrospective cross-sectional ecological study. Data referring to all those born at Hospital e Maternidade Dona Íris from January 2019 to July 2020 were analyzed. The information was obtained from the Infant Death Investigation Forms – Hospital Health Service of the Ministry of Health.

Data collection was carried out after approval by the Ethics and Research Committee of Hospital e Maternidade Dona Íris, city of Goiânia, to which the project is linked. The outcome to be analyzed will be fetal mortality.

RESULTS

The period analyzed was from January to December 2019 with a total of 5999 births. A total of 137 fetal deaths were found. The unit's fetal mortality rate is 74 deaths per 1000 births, representing 22.8%, as the fetal mortality coefficient.

	Number of patients (N=137)	
	N	%
NUMBER OF PREGNANCIES		
1	55	40,1
2	32	23,3
3	22	16,1
≥ 4	22	16,1
NR	6	4,4
NUMBER OF NORMAL DELIVERIES		
1	61	44,5
2	13	9,5
3	7	5,1
≥4	10	7,3
None	36	26,3
No registry	10	7,3
NUMBER OF ABORTIONS		
1	21	15,3
2	4	3,0
3	1	0,7
≥4	1	0,7
None	105	76,6
No registry	5	3,7
LIVE BORN CHILDREN		
1	52	38
2	25	18,2
3	15	11,0
≥ 4	12	8,7
None	29	21,1
No registry	4	3,0
CHILDREN BORN DEAD		
1	58	42,3
2	3	2,2
3	2	1,5
≥ 4	1	0,7
None	73	53,3
SEX		
Female	58	42,0
Male	68	50,0
Ignored	11	8,0
WEIGHT		
Extremely low birth weight (<1000g)	66	48,2
Very low birth weight (1000-1500g)	17	12,3
Low birth weight (1500-2500g)	25	18,3
Adequate birth weight (>2500g)	29	21,2
GESTATIONAL AGE		
Postterm (>42 weeks)	0	0
Term (37s - 41s 6d)	30	22,0
Late preterm (36s - 36s 6d)	8	5,8
Moderate preterm (31s - 35s 6d)	24	17,5
Extremely preterm (< 31s)	75	54,7
PLACE WHERE THE DELIVERY OCCURRED		
Home	2	1,5
Another hospital	2	1,5
TYPE OF DELIVERY		
Vaginal	90	65,7
Cesarean	46	33,6
Forceps	1	0,7

MEDICATION IN PREGNANCY		
No	96	70,0
Yes	41	30,0
MATERNAL INTERCURRENCES		
No intercurrences	69	50,4
Hypertension	22	16,0
Eclampsia	4	3,0
Infection	12	8,6
Other Diseases	30	22,0
RISK FACTORS DURING PREGNANCY		
Premature Labor	39	18,5
SHDP	30	14,3
Infections	23	11,0
Premature Rupture of Membranes	23	11,0
Gestational diabetes	12	5,7
Bleeding	6	2,8
IUGR	8	3,8
No complications	9	4,3
Malformations	9	4,3
Storch	9	4,3
Amniotic Fluid Changes	9	4,3
No Records	14	6,7
Others	19	9,0
CONDITION TO INTERNATION		
Fetal death	42	31,0
Labor	30	22,0
Clinical Treatment	5	3,7
Premature Labor	21	15,4
Cesarean	13	9,5
Roprema	6	4,4
Others	4	3,0
No registry	15	11,0
PROFESSIONAL WHO PERFORMED THE DELIVERY		
Obstetrician	98	71,5
Midwife nurse	9	6,6
Resident	7	5,1
Non-obstetrician doctor	4	3,0
Obstetrician and Nurse	4	3,0
Non-obstetrician doctor and resident	2	1,4
No registry	12	8,7
Home	1	0,7
RUPTURED SAC		
Yes	36	26,3
No	101	73,7
AMNIOTIC MEMBRANE		
Ruptured	20	14,7
Complete	72	52,5
No registry	45	32,8
MECONIUM		
Yes	30	22,0
No	107	78
UTERINE DYNAMICS		
Yes	49	35,8
No	88	64,2
DILATATION OF THE COLUM		
Yes	56	40,9
No	81	59,1
FETAL HEART BEAT		
Positive	66	48,2
Negative	55	40,2
No registry	16	11,6
PRESENTATION		
Cephalic	40	29,2
Pelvic	23	16,8
Anomalous	2	1,5
Pelvic/anomalous	1	0,7
No registry	71	51,8
ANESTHESIA DURING LABOR		
Yes	29	21,2
No	79	57,6
No registry	29	21,2
INDICATION OF CESAREAN SECTION		
Anomalous Presentation	8	17,0
SHDP	9	19,2
Iterative/Previous	8	17,0
Acute/Chronic Fetal Distress	12	25,5
Others	10	21,3
TYPE OF ANESTHESIA		
Epidural	2	1,5
Spinal	26	19,0
No registry	109	79,5
WHO ATTENDED THE CHILD		
Pediatrician	57	41,6
Obstetrician	38	27,7
Nurse	9	6,6
Resident	5	3,6
No registry	16	11,7
Pediatrician/Obstetrician	6	4,4
Others	6	4,4
ATTEMPTED RESUSCITATION		
Yes	3	2,2
No	63	46
No registry	71	51,8
BIRTH CONDITIONS		
Stillbirth/death before labor	32	23,3
Stillbirth/macerated fetus	26	19,0
Stillbirth/death during labor	3	2,2
No registry	76	55,5
CAUSES OF FETAL DEATH	13	10,5
Shock	12	9,7
Infection/Sepsis	8	6,4
Malformation	35	28,2
Prematurity	20	16,2
Anoxia/Respiratory Causes	19	15,3
Other Causes	17	13,7
BODY REFERRED TO NECROPSIA		
Yes	62	45,3
No	64	46,7
No registry	11	8,0
MEDICATION USED DURING PREGNANCY		
Did not use	96	65,3
Antihypertensive	14	9,5
Antibiotics	10	6,8
Progestins	8	5,4
Antianemic/Iron	8	5,4
Anti-diabetics (Oral/Insulin)	2	1,4
Corticosteroids	2	1,4
Others	7	4,8

Table 1 – Distribution of maternal, pregnancy and childbirth characteristics of fetal deaths in the HMDI, Goiânia (GO), Brazil, 2019 (N=137)

DISCUSSION

Reducing child mortality is still a challenge for health services and society as a whole. It is part of the Millennium Development Goals, a commitment assumed by the member countries of the United Nations (UN), of which Brazil is a signatory, to fight poverty, hunger, diseases, illiteracy, environmental degradation and discrimination against women, aiming to reach more dignified levels of life for the population, since infant mortality reflects the living conditions of society[9].

In the present study, the results obtained show that the main factors that culminated in fetal death are Premature Labor 18.5%, Hypertensive Diseases of Pregnancy with 14.3%, Infections and Premature Rupture of Membranes, both with 11%. The main causes of fetal death identified were prematurity with 28%, anoxia/respiratory causes in 16.2%, followed by shock from various causes (cardiogenic, hypovolemic, neurogenic) in 10.5%, and infections or septic shock in 9.7% of the causes.

The unit's fetal mortality rate is 22.8 deaths per 1000 births, but the profile is of high risk, which justifies the data. WHO (2011) estimated that approximately 2.6 million fetal deaths (considering weight greater than 1,000 g or gestational age greater than 28 weeks) occurred worldwide in 2009. From 1995 to 2009, the fetal mortality rate dropped by 14.0%, going from 22.1/1,000 total births to 18.9/1,000 births[10].

As for the maternal factors presented and related to fetal deaths, it was observed that of 131 (95.6%) pregnancies with one or more children, 104 (75.9%) were born alive, while 64 (46.7%) were born dead. Of these pregnant women, 27 (19.7%) had one or more abortions, 20 (14.7%) had ruptured amniotic membranes and 36 (26.3%) had a ruptured sac during pregnancy.

Among all the pregnant women evaluated, 22 (16%) had Systemic Arterial Hypertension as the main complication in their current pregnancy. For Barbeiro et al (2015), an interaction between maternal hypertension and prenatal care was identified: among hypertensive women with inadequate prenatal care, the OR was [8.7], much higher than in hypertensive women with adequate prenatal care with an OR of [5.6]. According to Aquino and Cecatt (1998) in a study carried out with 122 pregnant women, of all isolated causes, the most prevalent was arterial hypertension (20.5%), which led to fetal death[1]. For Vieira et al (2017), despite the data from their study covering almost 100% of the coverage of prenatal care, the most prevalent causes of fetal death are still arterial hypertension and infections11. In the literature, the stillbirth rate in hypertensive women ranges from 5 - 52/1000N, depending on the severity of complications of the hypertensive disease[12].

Among the risk factors associated with pregnancy that led to fetal death, prematurity was found in 39 (18.5%) of pregnant women, followed by Specific Hypertensive disease of pregnancy in 30 (14.3%), infections 23 (11%) and premature rupture of membranes in 23 (11%) patients. The 2009 Ministry of Health technical note advises that it is necessary to pay attention to the importance of preventing prematurity and its complications that must occur during prenatal care, taking away the weight of the effort that needs to be undertaken in the care of the premature newborn[8].

In this study, it was also found that 96 (65.3%) of the pregnant women did not use medications during pregnancy and, when they did, the main medications were antihypertensives 14 (9.5%). It should be noted that the use of medication during pregnancy, especially in an indiscriminate and unguided manner, can cause irreversible damage such as malformations and even death for both the mother and the fetus.

As a condition for hospitalization, 42 (31%) pregnant women had fetal death and the maternity ward was the place where most births occurred, 133 (97%). Of all deliveries performed, 90 (65.7%) were via the vaginal route, and in 98 (71.5%) the obstetrician was the professional conducting the procedure. These data reveal that even in a safe place with a suitable professional, death refers to other factors.

When cesarean section was indicated, acute fetal distress was the decisive factor in 12 patients, totaling 25.2% of all pregnant women whose indication for delivery was surgery. A very important data regarding the type of anesthesia at the time of surgery, 109 (79.5%) remained unregistered. The quality of information on fetal death certificates, despite some improvement, is still deficient. Sociodemographic variables such as age and maternal education are still poorly filled[13].

Among the variables related to the fetus, it is observed that 68 (50%) were male. The predominant gestational age in 75 (54.7%) had less than 31 weeks of gestation, which configures extreme preterm, with predominant weight in 66 (48.2%) < 1000 grams, fitting in extremely low weight. The presence of meconium was present in 30 (22%) of fetal deaths. Veloso et al, studying the trend of low birth weight from 1996 to 2010 in Brazilian capitals, found a negative correlation between the percentage of low birth weight (increasing until 2004) and the fetal mortality rate[14].

This study showed that 57 (41.6%) of the newborns were assisted by a pediatrician in the delivery room and that only 3 (2.2%) underwent resuscitation, in 71 (51.8%) of the cases there is no record of any procedure was performed or not with the newborn. There is also no record of birth condition in 76 (55.5%) and 64 (46.7%) were not referred for necropsy. These data are alarming in relation to the quality of filling out the forms. For Barbeiro et al., (2015) there is still a deficiency regarding the quality of information on fetal death certificates13. Some maternal sociodemographic variables are still poorly filled out, which makes the use of the Mortality Information System (SIM) unfeasible to study social inequalities in stillbirths. Incompletion in fetal death certificates exceeded the values reported in death certificates for children under one year of age, cor-

roborating, once again, the "invisibility" of fetal deaths. Although it decreased, it was still reported underreporting of fetal deaths, with the possibility of rescue, using the Hospital Information System (SIH)-SUS, at least for deliveries in users of this system15.

CONCLUSION

The Death Certificate is the instrument that notifies the death and triggers the investigation process. Considering the different realities observed in the country, it is still a challenge to eradicate underreporting of deaths, which was not different in this study, being necessary to take into account the different possibilities of capturing deaths, to expand the coverage of the Information System on Mortality (SIM).

Regarding the fetal characteristics observed, the following deaths were found: male, extreme preterm (< 31 weeks), extremely low weight (<100g), normal delivery. An important fact that draws attention was the large amount of underreporting in relation to the type of anesthesia performed during the cesarean, neonatal resuscitation and birth conditions. It was observed that almost half of those born were not sent to the necropsy service.

Finding arterial hypertension as the main cause of fetal death in this population is not surprising, as other studies carried out in the country have identified this same cause.

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