BRAZILIAN ANDFOREIGN CESAREAS IN FRONTIER CITY: ROBSON CLASSIFICATION

Cesáreas de brasileiras e estrangeiras em município de fronteira: classificação de robson

Cesarea brasileñas y exrranjeras em frontier city: clasificación de robson

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ABSTRACT

Objective: to analyze the incidence of cesarean sections and the clinical conditions of newborns of Brazilian and foreign mothers according to Robson's classification. **Method:** cross-sectional, retrospective and quantitative study, carried out in 2017 and 2018 in Foz do Iguaçu- PR. Women who delivered between 2012 and 2016) n=21, 129) were included. For analysis, the Chi-Square association test the G test was performed with a significance level of 5%. **Results:** the incidence of cesarean sections was 46%. The Robson group that contributed most was 5 and groups that were exoressive in relation to Apgar scores below 7 were 5, 8, 9 and 10. For these women, the need for referral to intensive care was more expressive for newborns births in group 10. **Conclusion:** Robson-s classification is important for clinical management, with group 5 presenting factors that reduce the chance of vaginal delivery.

DESCRIPTORS: Cesarean section; Incidence; Maternal and child health; Cross-sectional studies.

RESUMO

Objetivo: analisar a incidência de cesáreas e as condições clínicas de recém-nascidos de mães brasileiras e estrangeiras conforme a classificação de Robson. **Método:** estudo de corte transversal, retrospectivo e quantitativo, realizado em 2017 e 2018 em Foz do Iguaçu-PR. Foram incluídas mulheres que tiveram parto entre 2012 a 2016 (n=21.129). Para análise realizou o teste de associação Qui-Quadrado ou o teste G com o nível de significância de 5%. **Resultados:** a incidência de cesáreas foi de 46%. O grupo de Robson que mais contribuiu foi o 5 e grupos que se mostraram expressivos em relação a escores de Apgar inferior a 7 foram 5, 8, 9 e 10. Para estas mulheres, a necessidade de encaminhamento para cuidados intensivos foi mais expressiva para recém-nascidos do grupo 10. **Conclusão:** a classificação de Robson é

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importante para gestão clínica, sendo que o grupo 5 apresenta fatores que reduzem a chance de parto vaginal.

DESCRITORES: Cesárea; Incidência; Saúde materno-infantil; Estudos transversais.

RESUMEN

Objetivo: analizar la incidencia de cesáreas y las condiciones clínicas de los recién nacidos de madres brasileñas y extranjeras según la clasificación de Robson. **Método:** estudio transversal, retrospectivo y cuantitativo, realizado en 2017 y 2018 en Foz do Iguaçu-PR. Se incluyeron mujeres que dieron a luz entre 2012 y 2016 (n = 21,129). Se realizó la prueba de asociación Chi-Cuadrado o la prueba G con significancia del 5%. **Resultados:** la incidencia de cesáreas fue del 46%. El grupo de Robson que más contribuyó fue el 5 y los grupos que fueron expresivos en relación con Apgar por debajo de 7 fueron 5, 8, 9 y 10. La necesidad de derivación a cuidados intensivos fue más expresiva para los recién nacidos en el grupo 10. **Conclusión:** la clasificación de Robson es importante para el manejo clínico, con el grupo 5 presentando factores que reducen la posibilidad de parto vaginal.

DESCRIPTORES: Cesárea; Incidencia; Salud maternal e infantil; Estudios transversales.

INTRODUCTION

Cesarean section is a safe surgical procedure that should be performed to solve an obstetric emergency based on specific recommendations to preserve the life of the mother and the newborn1. In numerous situations this procedure has been performed without recommendation, employed for medical convenience or by request of the pregnant woman.[1-2]

Cesarean sections can trigger complications that cause harm to the woman and the newborn when performed inopportunely, without real indication.[3-4] For the fetus, the risks include premature birth and increased incidence of admission to the Neonatal Intensive Care Unit (NICU). For the woman, harm may occur during the procedure and puerperium.[1]

Considering these problems, the World Health Organization (WHO) highlights the need to reduce cesarean rates worldwide. In 1985, rates between 10% and 15% were set as ideal, since rates above this recommendation were not correlated to reduced maternal and infant mortality.[2,5]

The incidence of cesarean sections has become seen as a world epidemic, and Brazil is considered the leader in cesarean sections, reaching 88% in private hospitals and 55% in public hospitals.[5-6] In European countries the rate is 20% to 22% and in the United States 32.8%. Colombia and Dominican Republic also have high numbers, 42% and 43%, respectively.[2,6]

Considering that these rates have become a concern for public health, and due to the fact that there are weaknesses in the consensus for the indication of cesarean sections, there is a need for further studies to explore the contribution of obstetric and fetal factors that are drivers of these high rates, based on the Robson Classification (RC), as recommended by the WHO.[2,5,7] Thus, this study aims to analyze the incidence of cesarean sections and the clinical conditions of newborns in a Brazilian frontier municipality, according to the RC.

METHOD

This is a cross-sectional, retrospective, quantitative study, comprising the analysis of medical records of women who underwent the birth process between 2012 and 2016, in a reference hospital institution for high-risk pregnancy in Foz do Iguaçu-PR, Brazil. This municipality belongs to the triple border with Ciudad de Este (Paraguay) and Puerto Iguazu (Argentina).

The data search took place in 2017 and 2018, following the inclusion criteria: women who underwent cesarean sections and vaginal deliveries, regardless of the place of origin. Women who underwent other obstetric procedures such as uterine curettage, cerclage, and laparotomy for ectopic pregnancy were excluded.

We collected information on obstetric, admission, and sociodemographic factors, as well as data on delivery and the newborn.

The variables were grouped as follows: a) Parturients: Brazilian and foreign (Paraguayan, Argentinean, Chinese, Lebanese, Haitian and other ethnicities present in the city); b) Gestational age of the newborn: premature (< 37 weeks), term (≥ 37 weeks and ≤ 41 weeks), post-term (≥ 42 weeks); c) 1st and 5th minute Apgar score: < 7 and ≥ 7; d) Type of delivery: cesarean or vaginal.

For RC[8] the following concepts were used: obstetric history, number of fetuses, fetal presentation, onset of labor, and gestational age, and the ten groups were organized thus:

Group 1: Nulliparous women with single, cephalic fetus, above or equal to 37 weeks, in spontaneous labor;

Group 2: Nulliparous women with a single, cephalic fetus at or above 37 weeks, in induced labor or undergoing cesarean section before the onset of labor;

Group 3: Multiparous women without a previous cesarean section, with a single, cephalic fetus at or above 37 weeks, in spontaneous labor;

Group 4: multiparous women without a previous cesarean section, with a single, cephalic fetus at or above 37 weeks, whose labor is induced or who undergo a cesarean section before labor begins;

Group 5: All multiparous women with at least one prior cesarean section, with a single, cephalic fetus at or above 37 weeks;

Group 6: All nulliparous with a single fetus in breech presentation;

Group 7: All multiparous women with a single fetus in breech presentation including those with previous cesarean section(s);

Group 8: All multiparous women, including those with prior cesarean section(s)

Group 9: all women with a transverse or oblique fetus, including those with previous caesarean section(s)

Group 10: all pregnant women with a single cephalic fetus under 37 weeks including those with previous cesarean section(s).

The information was transcribed in a structured instrument and entered into Excel® spreadsheets; then inconsistency checks were performed. For data analysis, the chi-square

association test or the G test was used, complemented by the adjusted residuals analysis. Statistical tests were performed in Bioestat 5.0 Software (2007) and the significance level was 5% (p<0.05).

Data search and transcription to the structured instrument were performed by two nurses with professional experience in obstetrics.

The study was approved by the Research Ethics Committee of the Universidade Estadual do Oeste do Paraná, under opinion number 2.009.310.

RESULTS

A total of 9,728 cesarean sections were performed among the 21,129 births in the municipality of Foz do Iguaçu-PR, Brazil, in the period between 2012 and 2016, representing an overall rate of 46%. Among the women seen in the service, 19,085 were Brazilian and 2,044 foreigners, 8,797 (46.1%) of Brazilians and 931 (45.55%) of foreigners underwent cesarean sections.

Table 1 presents the analysis of overall births and cesarean sections among Brazilians and foreigners according to the RC.

Table 1 - Absolute and relative frequency of Brazilian and foreign women who performed normal delivery or cesarean delivery according to RC, and absolute and relative frequency of Brazilian and foreign women who performed cesarean delivery. Foz do Iguaçu, PR, Brazil, 2017-2018.

	Births by Group				Cesarean sections by group				
RC	Brazilian		Foreigner		Brazilian		Foreigner		General
	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]	%[b]
1	89,9(4351)	22,8	10,1(491)	24,0	90,5(1036)	11,8	9,5(109)	11,7	5,4
2	90,9(2110)	11,1	9,1(211)	10,3	91,2(1685)	19,1	8,8(162)	17,4	8,7
3	90,5(5329)	27,9	9,5(559)	27,3	93,4(497)	5,6	6,6(35)	3,7	2,5
4	92,1(940)	4,9	7,9(81)	4,0	92,4(665)	7,6	7,6(55)	5,9	3,4
5	90,6(3897)	20,4	9,4(404)	19,8	90,5(3278)	37,3	9,5(344)	36,9	17,1
6	86,4(293)	1,5	13,6(46)	2,2	85,5(271)	3,1	14,5(46)	4,9	1,5
7	90,7(340)	1,8	9,3(35)	1,7	90,6(317)	3,6	9,4(33)	3,5	1,7
8	85,6(244)	1,3	14,4(41)	2,0	84,6(203)	2,3	15,4(37)	4,0	1,1
9	97,1(33)	0,2	2,9(01)	0,0	97,0(32)	0,4	3,0(01)	0,1	0,2
10	89,8(1548)	8,1	10,2(175)	8,6	88,2(813)	9,2	11,8(109)	11,7	4,4
p-value	0,0010				0,0001				46%

[a]aRate that represents the group itself.
[b]Rate it represents between the groups.

There was a difference between the frequency of total births by groups of Brazilian and foreign women (p<0.010). The analysis of adjusted residuals showed that the values of the frequencies of total births of nulliparous foreign mothers with pelvic presentation (group 6) and of women with multiple pregnancies, including those with previous cesarean sections (group 8) were more expressive in the results obtained.

As for the frequency of Brazilian and foreign women who underwent cesarean sections, a difference between groups was identified (p<0.0001). The analysis of adjusted residuals showed that groups 6 and 8 were the most expressive.

Regarding the group with the highest contribution for cesarean sections among all women seen in the period, group 5 was the most evident, i.e., multiparous women with at least one previous cesarean section, with a single, cephalic fetus at or above 37 weeks.

According to Table 2, for mothers with newborns with a 1st minute Apgar Index greater than 7, there was a statistically significant difference (p<0.0020) between the classifications and nationality. The analysis of adjusted residuals showed that nulliparous foreign mothers with a single fetus in breech presentation (group 6) and multiparous Brazilian mothers without previous cesarean section, with a single, cephalic fetus, older than 37 weeks, and in labor (group 3) were more expressive.

Table 2 - Absolute and relative frequency of newborns of women who underwent surgical delivery with Apgar Index in the 1st minute higher and lower than 7, according to the RC. Foz do Iguaçu, PR, Brazil, 2017-2018.

	Apgar ≥ 7				Apgar < 7			
CR	**Brazilian**		**Foreigner**		**Brazilian**		**Foreigner**	
	%(n)[a]	**%[b]**	**%(n)[a]**	**%[b]**	**%(n)[a]**	**%[b]**	**%(n)[a]**	**%[b]**
1	90,4(956)	11,7	9,7(103)	12,1	93,0(80)	13,2	7,0(06)	7,8
2	91,4(1610)	19,6	8,6(152)	17,8	88,2(75)	12,4	11,8(10)	13,0
3	93,4(466)	5,7	6,6(33)	3,9	93,9(31)	5,1	6,1(02)	2,6
4	92,7(639)	7,8	7,3(50)	5,8	83,9(26)	4,3	16,1(05)	6,5
5	90,3(3137)	38,3	9,6(335)	39,2	94,0(141)	23,3	6,0(09)	11,7
6	86,4(247)	3,0	13,6(39)	4,6	77,4(24)	4,0	22,6(07)	9,1
7	90,3(269)	3,3	9,7(29)	3,4	92,3(48)	7,9	7,7(04)	5,2
8	86,6(194)	2,4	13,4(30)	3,5	56,2(09)	1,5	43,7(07)	9,1
9	100,0(26)	0,3	0,0(00)	0,0	85,7(06)	1,0	14,3(01)	1,3
10	88,6(648)	7,9	11,3(83)	9,7	86,4(165)	27,3	13,6(26)	33,8
p-value	0,0001				0,0065			

[a]Rate that represents the group itself.
[b]Rate it represents between the groups.

As for newborns with an Apgar score in the 1st minute lower than 7, there was a statistical difference (p<0.0065) between the classifications and the mother's nationality. The adjusted residual analysis showed that foreign mothers with multiple gestations, including those with previous cesarean sections (group 8) and multiparous Brazilian mothers with at least one previous cesarean section, with a single, cephalic fetus, above 37 gestational weeks (group 5) were the most expressive in the results.

In the Brazilian group, there is a difference (p=0.0001) between the Apgar score at the 1st minute higher and lower than 7. The RC that presented higher frequency, regarding newborns with Apgar scores at the 1st minute higher than 7 were from groups 2, 4 and 7. And the wheelchairs that presented the highest frequency, regarding newborns with 1st minute Apgar scores lower than 7, in this difference, groups 5 and 10 were the most expressive.

In the foreign group, there is a difference between the Apgar score in the 1st minute higher and lower than 7 (p=0.0001). Group 5 presented higher frequency of newborns with a 1st minute Apgar score higher than 7. The groups that presented higher frequency of newborns with a 1st minute Apgar score lower than 7 were 9 and 10.

As for newborns with an Apgar score in the 5th minute higher than 7 (Table 3), the results were significant (p<0.0001) between the classifications and the mother's nationality. The analysis of adjusted residuals showed that foreign mothers with multiple pregnancies, including those with previous cesarean sections (group 8) was the most significant in the results.

Table 3 - Absolute and relative frequency of newborns of women who underwent surgical delivery with Apgar Index in the 5th minute higher and lower than 7, according to the RC. Foz do Iguaçu, PR, Brazil, 2017-2018.

	Apgar ≥ 7				Apgar < 7			
RC	**Brazilian**		**Foreigner**		**Brazilian**		**Foreigner**	
	%(n)[a]	**%[b]**	**%(n)[a]**	**%[b]**	**%(n)[a]**	**%[b]**	**%(n)[a]**	**%[b]**
1	90,4(1016)	11,8	9,6(108)	11,4	95,2(20)	13,4	4,8(01)	4,0
2	91,2(1667)	19,4	8,8(160)	16,9	90,0(18)	12,1	10,0(02)	8,0
3	93,3(490)	5,7	6,7(35)	3,7	100,0(07)	4,7	0,0(00)	0,0
4	92,3(657)	7,6	7,7(55)	5,8	100,0(08)	5,4	0,0(00)	0,0
5	90,5(3250)	37,8	9,4(339)	35,8	82,1(23)	15,4	17,9(05)	20,0
6	85,9(268)	3,1	14,1(44)	4,6	60,0(03)	2,0	40,0(02)	8,0
7	90,7(301)	3,5	9,3(31)	3,3	88,9(16)	10,7	11,1(02)	8,0
8	68,5(163)	1,9	31,5(75)	7,9	0,0(00)	0,0	100,0(02)	8,0
9	100,0(31)	0,4	0,0(00)	0,0	50,0(01)	0,7	50,0(01)	4,0
10	88,5(760)	8,8	11,5(99)	10,5	84,1(53)	35,6	15,9(10)	40,0
p-value	0,0001				0,0819			

[a]Rate it represents in its own group.
[b]Rate it represents between the groups.

As for newborns with an Apgar score at the 5th minute lower than 7, no statistical association (p=0.0819) was observed between the RC and the mother's nationality.

In the Brazilian group, there is a statistically significant difference (p=0.0001), between the Apgar score in the 5th minute higher and lower than 7. Group 5 presented higher frequency regarding newborns with Apgar score in the 5th minute higher than 7. Groups 7 and 10 presented higher frequency regarding newborns with Apgar score in the 5th minute lower than 7.

In the foreign group, there is a statistically significant difference (p=0.0001), between the Apgar score at the 1st minute higher and lower than 7. Groups 9 and 10 presented higher frequency regarding newborns with an Apgar score at the 5th minute lower than 7, similarly to the 1st minute findings.

In a comparison between Robson's groups, newborns with Apgar scores below 7 at the 1st and 5th minutes were born to mothers with gestational age less than 37 weeks (group 10), regardless if Brazilian or foreign.

Table 4 shows newborns who presented and who did not present complications soon after birth. Regarding the newborns that presented complications, no statistical association (p=0.2944) was observed between the RC and the mother's nationality.

Table 4 - Absolute and relative frequency of newborns who had or not intercurrences during labor and delivery, children of women who underwent cesarean section, according to the RC. Foz do Iguaçu, PR, Brazil, 2017-2018.

	No intercurrences				With intercurrences			
CR	Brazilian		Foreigner		Brazilian		Foreigner	
	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]
1	90,2(988)	11,8	9,8(107)	11,7	96,0(48)	13,0	4,0(02)	3,8
2	91,3(1631)	19,4	8,7(155)	16,9	88,5(54)	14,6	11,5(07)	13,2
3	93,2(464)	5,5	6,8(34)	3,7	97,1(33)	8,9	2,9(01)	1,9
4	92,8(634)	7,6	7,2(49)	5,3	82,9(29)	7,9	17,1(06)	11,3
5	90,6(3182)	37,9	9,4(330)	35,9	87,3(96)	26,0	12,7(14)	26,4
6	85,9(261)	3,1	14,1(43)	4,7	76,9(10)	2,7	23,1(03)	5,7
7	90,8(296)	3,5	9,2(30)	3,3	87,5(21)	5,7	12,5(03)	5,7
8	66,7(144)	1,7	33,3(72)	7,8	80,8(21)	5,7	19,2(05)	9,4
9	96,9(31)	0,4	3,1(01)	0,1	100,0(01)	0,3	0,0(00)	0,0
10	88,6(757)	9,0	11,4(97)	10,6	82,3(56)	15,2	17,6(12)	22,6
p-value	0,0001				0,2944			

[a]Rate that represents the group itself.
[b]Rate that represents between groups.

As for newborns with no intercurrences, there was a statistical difference (p<0.0001) between groups and mother's nationality. The analysis of adjusted residuals showed that the frequency of foreign mothers with multiple gestation, including with previous cesarean sections (group 8) was the most expressive in the results, while among the Brazilians, women with fetuses in transverse or oblique situation (group 9).

In comparison between Robson's groups, both for Brazilian and foreign women, there was a higher occurrence for group 5, regardless of whether the newborn presented complications or not.

Considering intercurrences after birth and Apgar scores, Table 5 shows newborns that needed to be referred to NICU, according to the distribution of the ten Robson groups

Table 5 - Absolute and relative frequency of newborns of women who performed surgical delivery who were referred to the joint housing, NICU, according to the RC. Foz do Iguaçu, PR, Brazil, 2017-2018.

	Joint housing				NICU			
RC	Brazilian		Foreigner		Brazilian		Foreigner	
	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]
1	90,4(1004)	12,4	9,5(106)	12,2	91,4(32)	4,8	8,6(03)	2,9
2	91,5(1639)	20,3	8,5(152)	17,5	82,1(46)	6,8	17,9(10)	9,5
3	93,5(472)	5,8	6,5(33)	3,8	92,6(25)	3,7	7,4(02)	1,9
4	93,0(639)	7,9	7,0(48)	5,5	78,8(26)	3,9	21,2(07)	6,7
5	90,6(3196)	39,5	9,4(332)	38,3	86,2(81)	12,0	13,8(13)	12,4
6	85,8(248)	3,1	14,2(41)	4,7	82,1(23)	3,4	17,9(05)	4,8

RC	Joint housing				NICU			
	Brazilian		Foreigner		Brazilian		Foreigner	
	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]	%(n)[a]	%[b]
7	90,9(279)	3,4	9,1(28)	3,2	88,4(38)	5,6	11,6(05)	4,8
8	63,1(118)	1,5	36,9(69)	8,0	84,9(45)	6,7	15,1(08)	7,6
9	100,0(24)	0,3	0,0(00)	0,0	88,9(08)	1,2	11,1(01)	0,9
10	88,9(465)	5,7	11,1(58)	6,7	87,2(348)	51,8	12,8(51)	48,6
p-value	0,0001				0,8497			

Caption: (NICU) Neonatal Intensive Care Unit; (NICU) Neonatal Intermediate Care Unit.
[a]Rate that represents the group itself.
[b]Rate that represents between groups.

For newborns referred to rooming-in, there was significance (p<0.0001) between the classifications and the mother's nationality. The analysis of adjusted residuals showed that the frequency of foreign mothers in group 8 was the most expressive in the results obtained, and among Brazilian mothers, those classified in group 9.

Regarding newborns referred to NICU, no statistical association was observed between the RC and the mother's nationality, and, regardless of nationality, newborns of mothers in group 10 had a higher occurrence.

DISCUSSION

The 46% incidence of cesarean sections was considered high for both Brazilian and foreign women, showing that in border regions, such as the municipality studied, this type of birth is a public health problem. Other studies show high rates of cesarean sections, for example, the survey of Mexican women showed an incidence of 65.29%,[9] with South Africans 33%[10] and Ethiopians 22.7%.[11] Another study conducted in Brazil showed that even when there is a fetal death, a progressive increase of cesarean sections is still observed.[4]

With respect to RC, the group with the highest contribution to the cesarean rate was the group formed by multiparous women with at least one previous cesarean section, with a single, cephalic fetus and over 37 weeks gestational age (group 5), for both Brazilian and foreign mothers. This result was also found in Lithuanian hospitals, where researchers considered it as a target group for interventions.[12] Similarly, group 5 was also responsible for cesarean sections performed in Iceland,[5] Mexico City,[9] Paris[10] and Gaza.[13]

Researchers highlight the need to create clear criteria and guidelines for this specific group, aiming to increase vaginal birth attempts after a previous cesarean section, considering cultural aspects and care changes, which require well-trained and safe care teams to conduct this situation.[13-14] For example, a study in Lisbon showed that cesarean rates can be reduced to approximately 20% when labor induction is attempted in a proper, monitored manner and in a safe environment.[15]

When the results between general births and cesarean sections were compared between Brazilians and foreigners, differences between nationalities were found (possibly due to differences in prenatal services), and the analyses were significant for groups 6 and 8. Other studies also highlighted that women with breech, transverse and multiple gestations, belonging to groups 6, 9 and 8, respectively, have more chances of evolving to surgical delivery.[9]

In this perspective, it is understood that the proposal of Robson's groups provides means for health teams to identify specific groups to obtain an effective and clinically relevant classification system to achieve better perinatal and maternal outcomes.[9] It is necessary to reduce cesarean sections, but not at any cost, and factors such as Apgar scores below 7, the need for hospitalization of the newborn in NICU and maternal and fetal mortality rates should be observed and constantly monitored.[14]

A study in Ethiopia found that the cesarean rates are higher for groups 1, 3 and 5, justifying that the main reason for such procedure was the presence of fetal distress, followed by the fact that the mother had a previous cesarean section.[11] Similar results occurred in South Africa.[16] Still in Ethiopia, it was reported that most low-risk births in the country take place at home, and those that refer to the groups mentioned above come from births in hospitals, where the woman certainly presented a potential risk for complications.[11]

On the other hand, in Tanzania, health services often lack adequate equipment to perform fetal monitoring during labor and delivery. The lack of resources for fetal monitoring at these times can generate insecurity and fear among health professionals, as they blame themselves for negative fetal outcomes, sometimes leading to premature and inappropriate indication for cesarean delivery.[17]

Researchers describe that premature newborns are at increased risk for intracranial ischemic and hemorrhagic lesions. Among the perinatal neuroprotection strategies, these researchers do not mention the need for cesarean delivery, but rather delivery in a tertiary center, late clamping of the umbilical cord, and prevention of hypothermia.[18]

However, it should be noted that many pregnancies that present complications can lead to premature birth, and the presence of complications that affect maternal health becomes an indication for termination of pregnancy by cesarean section, thus justifying the high rates of cesarean sections for group 10 births.[19-20] Moreover, international researchers report that there is insufficient scientific evidence to prove that performing a cesarean section can improve the prognosis of premature newborns.[21]

Considering that group 8 is related to multiple gestations and group 9 to transverse fetal situation, one can infer that in these cases a cesarean section could have contributed to the wellbeing of the newborn.

And although no significance was found for where the baby was referred after birth, newborns, children of mothers belonging to group 10, regardless of nationality, were those who most needed to be referred to NICU. This is due to the fact that children born prematurely require complex technological densities to meet their ventilatory, feeding and therapeutic needs, which are indispensable for survival and recovery.[20,22]

In this study, the RC proved to be important as a surveillance tool, i.e., a clinical and administrative management tool, to identify groups that have a greater impact on cesarean rates, so as to organize care and help develop strategies to reduce these rates.[12,14] It showed that in the municipality studied, despite the high rate of this type of delivery, 17.1% was related to factors included in groups 5 of the RC, which indicate a lower chance of vaginal delivery.Discussions about these results are essential for the process of paradigmatic transformation that we are experiencing, but it should be noted that we cannot involve only technical and assistance issues to solve this serious public health problem, because first of all, it is necessary to give voice to the opinions of women to know their experiences, needs, and expectations at the time of childbirth.[14]

CONCLUSIONS

The RC is an important tool for clinical and administrative decisions, to identify groups that have a greater impact on cesarean rates and showed that in the city studied, despite the high rate of this type of delivery, some were related to factors included in group 5, which indicate a lower chance of vaginal delivery.

Regarding the limitations of the study, there is the possibility of incompleteness of the data collected from medical records, considering that this research is retrospective in nature. But still, the study may contribute to the improvement of health practices at the time of birth, from proposals based on scientific evidence.

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