Mother-requested cesarean delivery compared to vaginal delivery: a systematic review

PARTO CESÁREO A PEDIDO MATERNO COMPARADO COM PARTO VAGINAL: REVISÃO SISTEMÁTICA

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Introduction

The rates of c-sections without medical or obstetric indication have increased substantially in the last decades, especially in developing countries. Many factors contribute to this increase, being the mother-requested cesarean delivery a key contributing factor. There is a major debate about the implementation of c-sections performed at the mother's request without any established medical indication, and safety, cost, maternal autonomy, maternal and professional satisfaction, and ethics constitute important factors under discussion.

OBJECTIVE

To prepare a recommendation considering the risks and benefits involved in the practice of mother-requested cesarean delivery and c-section without medical indication, compared to the planned vaginal delivery.

MATERIAL AND METHODS

The evidence used for analysis of the risks and benefits involved in the practice of mother-requested cesarean delivery and c-section without medical indication was obtained according to the following steps: preparation of the clinical question, structuring of the question, search for evidence, critical evaluation and selection of evidence. The measures of effectiveness or damage expressed in absolute numbers were analyzed using difference in absolute risk, adopting a confidence interval of 95%. For statistically significant results, the number needed to treat to benefit (NNT) and the number needed to treat to harm (NNH) were calculated. The meta-analysis was performed using RevMan 5 interface.

RESULTS

Using the search strategy described, 1,482 studies were retrieved. Out of these, which were reviewed based on title, only 295 articles included the subject mother-requested cesarean delivery or c-section without medical indication, and thus 1,187 studies were excluded. Of the 295 remaining studies, only 73 were selected for full text review, so that nine comparative studies (observational cohorts) that met the criteria for inclusion and exclusion were considered for final evaluation. The results with significant difference were: mother-requested cesarean delivery or c-section without medical indication increases the risk of hemorrhagic (Figure 1), infectious (Figure 2) and breastfeeding complications (Figure 3), and respiratory complications in the newborn (Figure 4). They also point toward a reduction in the risk of emergency c-sections (Figure 5) and Apgar score ≤ 7 (Figure 6) compared to planned vaginal deliveries. The requested cesarean delivery does not establish significant differences in maternal mortality, post surgical wound complications, neonatal asphyxia, neonatal infection, and admission to neonatal ICU.

Conclusion

Despite the heterogeneity seen in the results of the meta-analysis, we were able to conclude that the performance of mother-requested cesarean section, or c-section without indication, increases the risk of hemorrhagic, infectious and breastfeeding complications, as well as respiratory complications in the newborn, also reducing the risk of Apgar score ≤ 7 , compared to the vaginal delivery.

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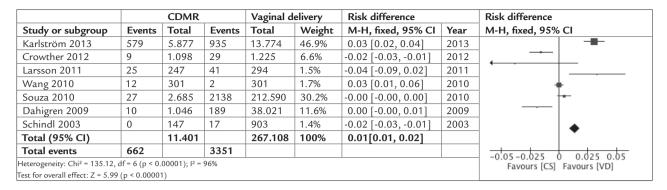


FIGURE 1 Hemorrhagic complications.

	CDMR		Vaginal delivery		Risk difference		Risk difference	
Study or subgroup	Events	Total	Events	Total	Weight	M-H, fixed, 95% CI	Year	M-H, fixed, 95% CI
Karlström 2013	148	5,877	155	13,774	74.2%	0.01 [0.01, 0.02]	2013	-
Larsson 2011	8	247	8	294	2.4%	0.01 [-0.02, 0.03]	2011	
Wang 2010	7	301	3	301	2.7%	0.01 [-0.01, 0.03]	2010	
Dahigren 2009	1	1,046	104	38.021	18.3%	-0.00 [-0.00, 0.00]	2009	
Schindl 2003	0	147	1	903	2.3%	-0.00 [-0.01, 0.01]	2003	
Total (95% CI)		7,618		52,293	100%	-0.01 [-0.01, 0.01]		◆
Total events	164		271			-		
Heterogeneity: Chi² = 160.5	-0.05 0 0.025 0.05							
Test for overall effect: $Z = 6$.	05 (p < 0.00	001)						Favours [CS] Favours [VD]

FIGURE 2 Infectious complications.

	CDMR		Vaginal delivery		Risk difference		Risk difference	
Study or subgroup	Events	Total	Events	Total	Weight	M-H, fixed, 95% CI	Year	M-H, fixed, 95% CI
Karlström 2013	73	5,877	32	13,774	16.2%	0.01 [0.01, 0.01]	2013	-
Liu 2012	2,317	22,462	31,211	409,242	83.8%	0.03 [0.02, 0.03]	2012	
Total (95% CI)		28,339		423,016	100.0%	0.02 [0.02, 0.03]		•
Total events	2,390		31,243					-0.05 0 0.025 0.
Heterogeneity: Chi² = 89.46, df	Favours [CS] Favours [VD]							
Test for overall effect: Z = 13.79	9 (p < 0.0000	01)						

FIGURE 3 Breastfeeding complications.

	CDMR			Vaginal delivery		Risk difference		Risk difference
Study or subgroup	Events	Total	Events	Total	Weight	M-H, fixed, 95% CI	Year	M-H, fixed, 95% CI
Karlström 2013	159	5,877	153	13,774	70.5%	0.02 [0.01, 0.02]	2013	-
Crowther 2012	2	1,098	1	1225	9.9%	0.00 [-0.00, 0.00]	2012	<u> </u>
Dahigren 2009	91	1,046	2,900	38,021	17.4%	0.01 [-0.01, 0.03]	2009	<u> </u>
Schindl 2003	1	147	0	903	2.2%	0.01 [-0.01, 0.02]	2003	
Total (95% CI)		8,168		53,923	100%	0.01 [0.01, 0.02]		•
Total events	253		3,054					-0.05 0 0.025 0.05
Heterogeneity: Chi² = 67.71, o Test for overall effect: Z = 5.9		Favours [CS] Favours [VD]						

FIGURE 4 Respiratory complications.

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		CDMR		Vaginal o	delivery	Risk difference		Risk difference
Study or subgroup	Events	Total	Events	Total	Weight	M-H, fixed, 95% CI	Year	M-H, fixed, 95% CI
Karlström 2013	0	5,877	838	13,774	68.9%	-0.06 [-0.06, -0.06]	2013	_*
Crowther 2012	109	1,098	367	1,225	9.7%	-0.20 [-0.23, -0.17]	2012	
Larsson 2011	25	247	45	294	2.2%	-0.05 [-0.11, 0.00]	2011	†
Dahigren 2009	0	1,046	5,580	38,021	17%	-0.15 [-0.15, -0.14]	2009	
Schindl 2003	0	147	93	903	2.1%	-0.10 [-0.12, -0.08]	2003	•
Total (95% CI)		8,415		54,217	100%	-0.09 [-0.09, -0.09]		
Total events	134		6,923					-0.05 0 0.025 0.05
Heterogeneity: Chi² = 1120.4 Test for overall effect: Z = 40.		Favours [CS] Favours [VD]						

FIGURE 5 Emergency c-section score.

		CDMR		Vaginal delivery		Risk difference		Risk difference
Study or subgroup	Events	Total	Events	Total	Weight	M-H, fixed, 95% CI	Year	M-H, fixed, 95% CI
Karlström 2013	0	1,046	182	38,021	17.8%	-0.00 [-0.01, -0.00]	2013	_*
Crowther 2012	38	5,877	252	13,774	72.1%	-0.01 [-0.01, -0.01]	2012	- ↓
Dahigren 2009	0	1,098	1	1,225	10.1%	-0.00 [-0.00, 0.00]	2009	
Total (95% CI)		8,021		53,020	100%	-0.01 [-0.01, -0.01]		•
Total events	38		435					
Heterogeneity: Chi ² = 92.86, Test for overall effect: Z = 8.3	-0.05 0 0.025 0.05 Favours [CS] Favours [VD]							

FIGURE 6 Apgar score.