Original Research Article
Analytical study of caesarean deliveries using Robson criteria in a public health setting of rural M.P.

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Background: Global rise in caesarean delivery rates have raised a public health alarm towards immediate and long term adverse perinatal outcomes associated with such deliveries. Robson's criteria (WHO 2015) help to classify, monitor and identify the key gap areas for improvements and policy amendments towards CS rate reduction.

Objectives: To study and analyze caesarean rates using Robson criteria

Methods: Cross-sectional, observational, record-based study at rural district health center of M.P. from June2020 to Jan2021. Data analyzed using descriptive statistical methods.

Results: A total of 1393 out of 4927 deliveries were conducted by caesarean with overall C.S. rate of 28%. The most common indications being group 5 (34%), group 2 (18%), group 1 (15%) and group 4 (12%). Partograph monitoring done in 1827(37%). Emergency (86%) and day shift (68%) caesareans predominated. Lack of round the clock monitoring, inadequate trained staff, late reporting of women, neglected referrals from periphery and inadequate use of partograph were common reasons for high CS rates.

Conclusions: Regular training with capacity building and audits with urgent addressal of health care gaps forms the key strategies towards achievement of desired targets.

1. Introduction

High cesarean birth rates are an issue of international public health concern[1]. Worries over such increases have led the World Health Organization to advise that Cesarean Section (CS) rates should not be more than 15%, with some evidence that CS rates above 15% are not associated with additional reduction in maternal and neonatal mortality and morbidity[2]. Analyzing CS rates in different countries, including primary *vs.* repeat CS and potential reasons of these, provide important insights into the solution for reducing the overall CS rate[3]. Robson, proposed a new classification system, the Robson Ten-Group Classification System to allow critical analysis according to characteristics of pregnancy[4&5].

2. Methods:

Cross-sectional, observational, record-based study at rural district health center of M.P. from June2020 to Jan2021. Data analyzed using descriptive statistical methods. All the women delivered during this period in the labor ward were included. All relevant obstetric information (parity, mode of previous deliveries, previous CS and indications, gestational age, onset of labor, spontaneous or induced labor) was entered on a questionnaire and then into Microsoft excel. Results were calculated at the end of this period.

3. Results:

Serial number	Age group	Number of patient	%
1	<20 (teenage preg)	9	0.9%
2	20-35	975	97.5%
3	>35	14	1.4%
4	>40	2	0.2%
Total		1000	

Serial number	Birth wt	Number of patients	%
1	>4 kg	11	1.1%
2	2.5-4 kg	705	70.5%

Serial number	Robsons group		No of patients	%
1	Nullipara, singleton, cephalic,>37 wk, spont lab		114	11.4%
2	Nullipara, singleton, cephalic,>37 wk, ind lab or not in lab		211	21.1%
3	Multipara without prev sect singleton cephalic,>37 wk, spont lab		85	8.5
4	Multipara without prev sect singleton cephalic,>37 wk, ind lab or not in lab		120	12%
5	Multi with prev cs cephalic >37		344	34.4%
6	Nullipara breech		54	5.4%
7	Multipara with breech (incl prev cs)		41	4.1%
8	Multiple preg (including prev cs)		11	1.1%
9	All preg with trans or oblique (including prev cs)		15	1.5%
10	Singleton < 36 inclu prev cs		5	0.5%
Total			1000	
3	2.5-1.5 kg	269	26.9%	
4	1.5-1 kg	10	1%	
5	<1kg	5	0.5%	
total				

Serial number	Baby status	Number of babies	%
1	Mother side	841	84.1%
2	Sncu	153	15.3%
3	Iufd	4	0.4%
4	Still birth	2	0.2%
total			

Serial number	Status	Number of patients	%
1	Lscs	719	71.9%
2	Lscs with tt	111	11.1%
3	Lscs with ppiucd	170	17%
total		1000	

Serial number	Group	Number pf patient	%
1	Elective	142	14.2%
2	Emergency	858	85.8%
total		1000	

Serial number	Group	Number of patient	%
1	Primi section	656	65.6%
2	Repeat section	344	34.4%
total			

4. Discussion:

In a study from a university hospital in Cote d'Ivoire, however, the most common groups were groups 1, 2 and 3. The importance of group 2 (nulliparous single cephalic term pregnancy, induced or caesarean before labour) in the study from Cote d'Ivoire could be explained by variations in indications for inductions of vaginal birth or CS in the two settings. In most high-income settings, groups 5, 2 and 1 are the major contributors to overall CS rate unlike the studies from low-income settings[6]. The variations between high-income settings and our study may be related to fertility trends and, therefore, stronger presentation of groups 1 and 2 in high-income settings, compared with stronger presentation of multiparous women (group 3) in our low-resource setting with high fertility rates.10 26 Induction of labour (group 2) is more frequently practised in high-income settings ranging from 8.3% in Latvia to 33% in Wallonia (Belgium) compared with 4.4% in Africa[7]. Risk selection in antenatal care is better developed, which leads to more frequently indicating induction of labour. Barriers for induction of labour in low-resource settings might be the unavailability of facilities to perform CS in case of failed induction[8]. The fact that group 5 women were one of the major contributors both in high-income and low-income settings indicates the importance of preventing primary caesarean if a meaningful reduction in overall CS rate is to be achieved[9]. In a study from Tanzania both primary and secondary CS were rising overtime[10].

5. Conclusions:

Regular training with capacity building and audits with urgent addressal of health care gaps forms the key strategies towards achievement of desired targets.

6. References:

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