



COMPARISON OF MATERNAL MORBIDITY IN CAESAREAN SECTION & VAGINAL DELIVERY: A PROSPECTIVE STUDY IN A TERTIARY TEACHING HOSPITAL.

Gynaecology

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ABSTRACT

INTRODUCTION: -Rising caesarean delivery rate all over world is a matter of profound concern to health care providers.

OBJECTIVES:- To assess intrapartum and postpartum maternal morbidity up to 6 weeks in caesarean sections and vaginal deliveries.

METHODS:- A Prospective observational cohort study of women who underwent caesarean sections and those who had vaginal delivery, conducted at tertiary care centre during period of 1st June 2017 to 31st Dec 2018. Maternal morbidity during intrapartum period and postpartum period up to 6 weeks was compared between caesarean and vaginal delivery group.

RESULTS:- Postpartum complications were higher in caesarean group as compared to vaginal delivery group. Association between caesarean delivery and postpartum morbidity was significant for fever during hospital stay, wound infection, requirement of blood and blood products transfusion.

CONCLUSION:- WHO statement that caesarean sections to be performed only when medically indicated stands true.

KEYWORDS

Caesarean, Intrapartum Morbidity, Postpartum Morbidity

INTRODUCTION

Caesarean delivery rate is constantly rising all over the world. Many caesarean sections are undertaken unnecessarily which can put lives & well being of women & their babies at risk both in short term & long term.

This profound rising trend in CS is matter of concern to health care specially when CS are performed for maternal request & without any medical indications.

Problem associated with CS lies in its short-term morbidity such as infection, haemorrhage, visceral injury & venous thromboembolism & long term risk include risk to future pregnancy, fertility & its effect on quality of life.

We conducted a study with objective to assess maternal morbidity associated with caesarean delivery compared to vaginal delivery.

MATERIAL AND METHODS:

A prospective observational study conducted at B.J. Government Medical College and Sassoon General Hospital, Pune during period of 1st June 2017 to 31st December 2018 after approval from institutional

ethical committee. Study group includes 434 women who underwent caesarean delivery & 434 women who had vaginal delivery were included in comparison group. Women from both group delivered during study period and were residing in Pune city who agreed to follow up till 6 weeks postpartum. Informed consent was taken from women before study. A pretested questionnaire was used to collect data and face to face interview was done by health facility staff. Collected data included demographic characteristics, obstetric and medical history, detailed information on morbidity, mode of delivery and various maternal complications (morbidity) during delivery and up to six week postpartum. Maternal morbidity during intrapartum period and maternal and neonatal outcome following delivery was compared between caesarean section group and vaginal delivery group.

Statistical Analysis :

Quantitative data was presented as means $\pm$ standard deviation (SD). Qualitative data was presented as frequencies. Chi square test was used to compare categorical variables.

RESULTS

A total of 3,253 women underwent CS during study period.

Table 1: Distribution of demographic variables of women from both groups

S.N	Demographic Details	LSCS (n=434)		Normal (n=434)		Total	P- value
		No.	%	No.	%		
1	Maternal age						
	≤35 years	418	96.32	422	97.24	840	0.4422
	>35 years	16	3.68	12	2.76	28	
2	Parity						
	Nulliparous	280	64.52	400	92.17	680	0.00001
	Multiparous	154	35.48	34	7.83	188	
3	BMI						
	<30	345	79.50	396	91.25	741	0.00001
	≥30	89	20.50	38	8.75	127	
4	ANC registration						
	Registered	420	96.77	419	96.54	839	0.8501
	Unregistered	14	3.23	15	3.46	29	
5	H/o BOH						
	Yes	13	2.99	14	3.23	27	0.8449
	NO	421	97.01	420	96.77	841	
6	Raised BP	88	20.27	61	14.05	149	0.01508
	Normal BP	346	79.73	373	85.95	719	
7	Tobacco smoking						
	Yes	6	1.38	4	0.9	10	0.5246

	No	428	98.62	430	99.10	858	
8	Previous CS						
	Yes	204	47	50	11.52	254	0.00001
	No	230	53	384	88.48	614	

Table 1 shows demographic characteristics and obstetric details of women in both groups. Mean age of women in caesarean group was 23.8 ± 3.65 years compared to vaginal delivery group where mean was 23.17 ± 3.27 years. 20% women having BMI > 30 had caesarean section as compared to 7% women from same BMI group had vaginal delivery. On application of chi square test there was association between parity and body mass index with mode of delivery. 96% women from caesarean and vaginal delivery groups had registered their pregnancies showing increased awareness in seeking antenatal care at hospital. 20% women in caesarean group compared to 14% in vaginal delivery group had raised blood pressure. This difference was statistically significant.

Table 2: Comparison of co-morbidities in LSCS & Vaginal delivery group

S. No	Co-morbidities	LSCS (n=434)		Normal (n=434)		Total	P-value
		N	%	N	%		
1	Febrile co-morbidity	8	1.84	4	0.92	12	0.2449
2	Hypertensive disorder	88	20.27	61	14.05	149	0.01508
3	Anaemia	33	7.6	43	9.9	76	0.2298
4	Diabetes	10	2.3	1	0.23	11	0.0063
5	APH	14	3.22	5	1.15	19	0.0368
6	Other	8	1.84	2	0.46	10	0.05634

Table 2 shows the common co-morbidities present in women who had undergone caesarean section were hypertensive disorder (20.27%) followed by anaemia (7.6%) and antepartum haemorrhage (3.22%). There was statistically significant association between hypertensive disorders (pre-eclampsia, eclampsia, chronic hypertension, diabetes (gestational diabetes, type I or II diabetes mellitus), antepartum haemorrhage and caesarean delivery.

Table 3: Postpartum morbidity in LSCS & Vaginal delivery group

S. No.	Postpartum morbidity	LSCS (n=434)		Normal (n=434)		Total	P-value
		N	%	N	%		
1	Admission to ICU/HDU	25	5.76	24	5.52	49	0.9933
2	Postpartum Haemorrhage	6	1.38	5	1.15	11	0.76155
3	Fever during hospital stay	10	2.3	3	0.69	13	0.0499
4	Wound Infection	15	3.45	2	0.46	17	0.001451
5	Thrombophlebitis	5	1.15	2	0.46	7	0.2549
6	Breast Engorgement/ lactation failure	5	1.15	3	0.69	8	0.4734
7	Wound gape requiring resuturing	5	1.15	1	0.23	6	0.10128
8	Bladder injury	1	0.23	0	0	1	-
9	Blood & blood products received	39	8.9	19	4.3	58	0.000028

Table 3 shows intrapartum and postpartum complications (morbidity) among women of both groups. Postpartum complications were higher in caesarean group as compared to the vaginal delivery group. Fever during hospital stay, wound infection, requirement of blood and blood product transfusion were more in LSCS group. Among 434 women who underwent caesarean section, 2.3% women required ICU admission whereas 1.38% had postpartum haemorrhage. Other postpartum morbidities studied were thrombophlebitis, breast engorgement and wound gape requiring resuturing each of them occurred in 1.15% of women from LSCS group. It was found that 3.45% women from LSCS group suffered from wound infection compared to 0.46% from normal delivery group.

Table 4: Postpartum complaints at 6 weeks in LSCS & Vaginal delivery group

S. No.	Postpartum Complaints at 6 weeks	LSCS (n=434)		Normal (n=434)		Total	P-value
		N	%	N	%		
1	Fever	29	6.68	25	5.76	54	0.57405
2	Burning micturition	24	5.52	27	6.22	51	0.665
3	Wound site pain	220	50.69	63	14.51	283	0.00001
4	Lower abdominal pain	57	13.13	54	12.44	111	0.7604
5	Urinary incontinence	9	2.07	5	1.15	14	0.281136
6	Breast engorgement/ mastitis/ lactation failure	32	7.37	22	5.06	54	0.9441

Table 4 shows experienced morbidity by women during follow up visit after childbirth at 6 weeks. Most common observed morbidity in caesarean group was surgical site pain (50%) which was statistically significant. Postpartum complaints reported such as fever (6.68%), lower abdominal pain (1.3%), urinary incontinence (2.07%) and breast engorgement/ mastitis (7.37%) was more in LSCS group. Burning micturition (6.22%) was more in women with normal delivery, however this was not statistically significant. We also reported that dyspareunia was more in vaginal delivery group (48%) compared to caesarean group 28% and this difference was statistically significant. We also analysed neonatal outcome in both groups. NICU admissions were more in caesarean group (4.6%) than vaginal delivery group (3%) however this difference was statistically not significant.

DISCUSSION:

In our hospital, total number of deliveries during study period was 17,142 while total number of caesarean deliveries was 3253. Caesarean delivery rate for year 2018 (January 2018 to December 2018) was 21.02% which is higher than caesarean section rate recommended by WHO (10-15%). This could be due to more number of referrals received to our tertiary care hospital. This study evaluated maternal outcome in two groups which include caesarean group and vaginal delivery group. Increasing attention was given to intraoperative and immediate postpartum morbidity associated with caesarean delivery. Long term follow up is required to study the long term maternal outcomes following caesarean delivery such as urinary incontinence and pelvic organ prolapse which needs further evaluation and research in future. Increased maternal morbidities with caesarean delivery compared with vaginal delivery are well established.^{2,3,4,5,6}

Among both groups there was no case of maternal mortality or serious maternal morbidity like uterine rupture, obstetric hysterectomy or DIC. Previous work similar to this study demonstrated significant reduction in risk of maternal infection and haemorrhage when caesarean delivery was compared to vaginal delivery. There was statistically significant association between parity, body mass index and caesarean delivery. Most frequently reported co-morbidity among both groups was hypertensive disorders followed by anaemia. This could be because of more number of referrals of high risk pregnancies to our tertiary care hospital. Unlike previous study there was no significant association between admission to ICU after delivery and mode of delivery.⁷ Similar to other studies we found increased risk of febrile morbidity, wound complications and blood transfusion required for caesarean delivery when compared with vaginal delivery.^{7,8} Finding of previous study was consistent with the present study in terms of incidence of previous caesarean section which was higher in women who underwent caesarean delivery compared to vaginal delivery.⁸

Postpartum haemorrhage was seen more in vaginal delivery group which was consistent with findings by Burrows et al.⁹ Most common postpartum morbidity observed was blood and blood product transfusions (8.9%). This report of blood transfusion rate is consistent with previous studies which mentions rate of 1.2 to 6.3% with

caesarean delivery.^{9,10,11} When postpartum complaint at 6 weeks was compared; wound site pain was statistically significant among caesarean section.

CONCLUSION:

Although recent advances in medical field have reduced maternal mortality significantly, maternal morbidity related to caesarean delivery is higher than the vaginal delivery. Hence WHO statement that LSCS to be performed only when medically indicated stands true.

Conflict Of Interest - NIL

Funding Source - NIL

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