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Original Research Article

Comparison of incidences and indications of multi primary caesarean with primi caesarean mothers in a tertiary care teaching hospital

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ABSTRACT

Background: The incidences and indications of caesarean sections between the primary caesarean multies and caesarean primies were comparable in respect of their demographical and clinical variables of mothers and their foetal outcomes. Aim and objective of the study was to analyze the incidences and indications of primary caesarean multies and caesarean primies. To compare the incidences and indications of mothers between the primary caesarean multies and caesarean primies. To compare the demographic and clinical profiles of the mothers and babies.

Methods: During January to June 2016 total of 3583 deliveries were conducted in Tirunelveli Medical College Hospital, Tamil Nadu, India. Among them 89 and 1168 were primary caesarean multies and caesarean primies respectively. They had been compared according to the objectives.

Results: The caesarean incidences were 62.5% among the primies and 4.8% among the multies as Primary. The primary caesarean incidences among the multies were statistically significantly lesser in the 15-24 ages than the primi ($P < 0.05$). 25-29 age bracket the incidences were not differed significantly ($P > 0.05$). After 30 years of age, the incidences were statistically significantly increased among the multies ($P < 0.05$). The birth weight of babies did not show any statistically significant indications between the two groups ($P > 0.05$). The indications of Foetal distress, Severe Oligo hydration and others did not show any statistically significant difference between the groups ($P > 0.05$). Mal presentation and Ante Partum hemorrhage were significantly more among the multies than primies ($p < 0.05$) and Failed indication and CPD were the significantly lesser indication than the primies ($P < 0.05$).

Conclusions: Without reducing the caesarean section rate in primi we cannot bring down the overall caesarean rate of delivery.

Keywords: Caesarean, Comparison, Primary multies, Primies

INTRODUCTION

Caesarean section is almost certainly one of the most-oldest operations in surgery with its or its origin lost in antiquity, and ancient mythology. Caesarean section has been defined as 'the delivery of the foetus after the period of viability through an incision in the abdominal wall on an intact uterus. Caesarean section, originally performed in the interest of the mother, has now been extended to

include the interest of the foetus also. The twentieth century has seen many new developments in the field of obstetrics, rendering increased safety to caesarean section, which is mainly due to availability of antibiotics, safe anaesthesia, blood transfusion facilities and recent improvement in surgical techniques. So caesarean section has become an accepted standard procedure in modern obstetric practice reducing the maternal mortality and morbidity and improving the perinatal outcome. Progress

in obstetrics and improvement in perinatal outcome have been associated with an increased incidence of caesarean section. Caesarean section. Caesarean section is substituted for a difficult forceps operation.

In these days of rapidly changing socioeconomic values there is preference for small families, therefore the need is for every pregnancy in culminating in normal healthy infant cannot be over emphasised.

Caesarean delivery is also associated with higher maternal morbidity and mortality compare to vaginal deliveries.¹ Caesarean deliver also increases the future obstetric complications like scar rupture, placenta accreta, caesarean hysterectomy maternal morbidity and mortality.²

Nowadays caesarean section is one of the commonest surgery.³ In the modern era of improved anaesthetic techniques, increasing maternal complications and better perinatal survival have justified the increasing caesarean deliveries. Primary caesarean delivery defined as caesarean deliveries out of all births in women who have not had a previous caesarean deliveries. It has been steadily increasing in the recent years.⁴ Barber et al found that 50% of the increase in caesarean delivery in their institution was due to increase of primary caesarean deliveries.⁵ Many factors like maternal obesity, maternal request, unhealthy life style factors, maternal complications like pre-eclampsia, heart diseases renal diseases and other medical disorders fear of litigation have led to increase in the caesarean delivery rate. It is still more higher in a tertiary care hospital with a lot of referral and handled cases from periphery and rural health centres. Our present study aims to find out the comparative differences in indications and incidences of caesarean section in primi and multi with primary caesarean section. It also tries to find out the ways for reducing the primary caesarean delivery.

Aim and Objective of the study was to analyze the incidences and indications of primary caesarean multies and caesarean primies. To know the incidence of primary caesarean section in multi. To study of indications of

primary caesarean section in multi. To know the incidence of caesarean section in primi. To study the indication of caesarean section in primi. Compare the indication of incidence of caesarean section in multi with that of primi.

METHODS

It is a prospective randomized Hospital based study conducted in Tirunelveli Medical College Hospital, Tamil Nadu, India, during the study period of January to June 2016. Total of 3583 deliveries were conducted in the above hospital. Among them 89 and 1168 primary caesarian multies and caesarean primies were selected respectively for the study according to the inclusion exclusion criteria.

Inclusion criteria

- Multi with at least one previous vaginal delivery of viable foetus and underwent primary caesarean section in the present pregnancy
- All primi gravita who have undergone caesarean section.

Exclusion criteria

- Multi with no live child
- Multiple pregnancies in the present pregnancy among both groups
- Previous LSCS.

Data analysis and interpretations

The data were analyzed in terms of percentages and interpreted the statistical significances by Chi-square (χ^2) test and 'Z' test of proportions. The P- values less than or equal to 0.05 ($P \leq 0.05$) were treated as statistically significant.

RESULTS

The study period deliveries have been classified according to their obstetrics profile in the Table 1.

Table 1: Classification of deliveries from January to June 2016.

Mothers' Para	Vaginal deliveries		Caesarean deliveries		Total deliveries	
	Frequency	%	Frequency	%	Frequency	%
Primi	850	23.7	1168	32.6	2018	56.3
Multi	866	24.2	610	17.0	1476	41.2
Primary	0	0.0	89	2.5	89	2.5
Total	1716	47.9	1867	52.1	3583	100.0

The above Table 1 states the deliveries during the study period. The primi deliveries were 56.3%. Among them,

23.7% and 32.6% were vaginal and cesarean respectively. Among the multi para, 24.2%, 17.0% and 2.5% were

vaginal caesarean and primary caesarean respectively. Among the total multies 1565 (43.7%), 866 (24.2%) mothers delivered vaginally. Among the remaining multies, 610(17%) mothers were repeated LSCS and 89 (2.5%) mothers delivered as primary LSCS i.e. first time LSCS after one or more vaginal deliveries.

The study subjects of primary LSCS mothers of multi gravid were classified in the above Table 2. Among them, 66.3% and 23.6% were gravid-2 and 3 respectively.

Table 2: Percentage distribution of primary multi LSCS according to their gravida.

Gravida	2	3	4	5	6	Total
Mothers	59	21	7	1	1	89
%	66.3	23.6	7.9	1.1	1.1	100.0

The fourth gravid mothers were only 7.9%. The remaining 5th and 6th gravid mothers were 1.1% of each.

Table 3: Incidences of LSCS compared between primi and multies.

Para of mothers	LSCS		Vaginal		Total		χ^2	df	Signifi
	No	%	No	%	No	%			
Primi	1168	32.6	850	23.7	2018	56.3	61.677	1	P<0.001
Multi	699	19.5	866	24.2	1565	43.7			
Total	1867	52.1	1716	47.9	3583	100.0			

The Table 3 compares the incidences of LSCS between the Primi and multi para mothers. The incidences of

LSCS in Primi para (32.6%) were statistically significantly (P<0.001) greater than the multi gravida mothers (19.5%).

Table 4: Incidences of primary LSCS between primi and multi para mothers.

Para of mothers	Primary		Repeated		Total		χ^2	df	Signifi
	No	%	No	%	No	%			
Primi	1168	62.5	0	0.0	1168	62.5	1509.961	1	P<0.001
Multi	89	4.8	610	32.7	699	37.5			
Total	1257	67.3	610	32.7	1867	100.0			

The incidences of primary LSCS of Primi and Multi were compared in the above Table 4. The difference of

incidences between the primi and multi was statistically significant (P<0.001).

Table 5: Comparison of primary LSCS between primi and multi according to their age.

Age group	Multi		Primi		'Z'	Sig
	No	%	No	%		
15-19	2	2.2	164	14.0	6.343	P<0.001
20-24	32	36.0	560	47.9	2.248	P<0.05
25-29	37	41.6	393	33.7	1.461	P>0.05
30-34	12	13.5	49	4.2	2.534	P<0.05
35-39	5	5.6	2	0.2	2.213	P<0.05
40-44	1	1.1	0	0.0	-	-
Total	89	100.0	1168	100.0	-	-

The incidences of primary LSCS of multi were compared with the primi LSCS in the above Table 5 according to their ages. The trends of incidence from ages 15 to 25

were more among the primi and the differences were statistically significant (P<0.05). In the age bracket 25-29 the incidence between the two groups was not statistically

significant ($P>0.05$). After 30 years of age the incidence trends were more among the multi and the differences

were statistically significant ($P<0.05$).

Table 6: Comparison of birth weight of babies between the two groups.

Birth weight (Kg)	Multi		Primi		'Z'	Sig
	No	%	No	%		
1.0-1.5	1	1.1	12	1.0	0.087	$P>0.05$
1.5-2.0	6	6.7	24	2.0	1.753	$P>0.05$
2.0-2.5	9	10.1	197	16.9	2.014	$P<0.05$
2.5-3.0	19	21.3	246	21.1	0.044	$P>0.05$
3.0-3.5	25	28.1	344	29.5	0.283	$P>0.05$
3.5-4.0	24	27.1	296	25.3	0.369	$P>0.05$
4.0-4.5	4	4.5	49	4.2	0.132	$P>0.05$
4.5-5.0	1	1.1	0	0.0	-	-
Total	89	100.0	1168	100.0	-	-

The above Table 6 compares the birth weight of the babies of the two groups. The birth weight between the two groups except 2.0-2.5 kg, all other groups were not

differed significantly ($P>0.05$). The birth weight of the babies in the weight 2.0-2.5 was statistically significantly differed ($P<0.05$).

Table 7: Comparison of indications of LSCS between the multi and primi.

Indications	Multi		Primi		'Z'	Sig
	No	%	No	%		
Foetal distress	22	24.7	326	27.9	0.672	$P>0.05$
Failed induction	8	9.0	301	25.8	5.102	$P<0.001$
Malpresentation	16	18.0	73	6.2	2.855	$P<0.01$
Ante Partum hemorrhage	15	16.9	49	4.2	3.163	$P<0.01$
CPD	15	16.9	302	25.9	2.156	$P<0.05$
Severe Oligo hydration	4	4.5	70	6.0	0.651	$P>0.05$
Others	9	10.0	47	4.0	1.856	$P>0.05$
Total	89	100.0	1168	100.0	-	-

The above Table 7 states the comparisons of indications for LSCS between the Primary Multi and LSCS primi. The Foetal distress, Severe Oligo hydration and other indications between the two groups were not statistically significantly differed ($P>0.05$). The other indications Viz. Failed indication, Mal presentations, Ante Partum Hemorrhage and CPD between the two groups had statistically significantly differed ($P<0.05$).

DISCUSSION

Our study showed that over all cesarean delivery rate was 52.1%. The overall incidence of CS in other studies like Erika desai (45.6%) 2013, Yajunliu (56.04%) 2011, Swapan Das et al (25.68%) 2012, Sharmila et al (29.3%) 2016, P. Himabindhu (40.55%) 2015, 57.87% in a study by Salah et al 21.3% in a study by Annelee boyle et al 2013.⁶⁻¹²

Over all cesarean section rate in a study by Anneleeboyle et al was 21.3% primary caesarean section in primi was 30.8% and primary caesarean section in multi was 11.5%. Failure progress (35.4%), non-reassuring FHR tracing (27.3%), malpresentation (18.5%) were the important causes of primary caesarean section in the above study.¹²

Over all caesarean section rate was 52.1% in our study. Primary caesarean section in primi was 62.5% and primary caesarean section in multi was 4.8%, 32.7% accounts for repeat caesarean section in our study. Foetal distress (27.7%), failed induction (24.5%), malpresentation (7%), Antepartum hemorrhage (5%), CPD (25.2%) were the important causes of primary caesarean section in our study.

In our study Foetal distress (27.9%), CPD (25.9%), Failed induction (25.9%) were the important causes of

caesarean section in primi. In a study by Anneleeboyle et al Failure to progress (53.2%), non-reassuring FHR tracing (27.5%) and elective (7.6%) were the top three indication for primary caesarean section in primi group. In a study by Salah Roshdy Ahmed et.al the caesarean section rate in primi was 32% Foetal distress (30%), Breech (19.3%), failure to progress (18.8%) and failure to induce labour (11.7%) were the most common indications for caesarean section in primi.

In our study, the incidence of primary caesarean section in multi was 2.5% among the total deliveries. It was 4.8% among the total caesarean sections. Foetal distress (24.7%) malpresentation (18%), antepartum hemorrhage (16.9%) CPD (16.9%) were the top four indications for primary caesarean in multi in our study.

In a study by Sharmila et.al the incidence of primary caesarean in multi was 3%. Malpresenation (23.4%), Antepartum hemorrhage (16.8%), Foetal indications (15.3%), medical disorders (16.5%) and CPD (15.8%) were the common causes of primary caesarean section in multi. The study by Himabindhu et al the incidence of primary caesarean section in multi was 7%.⁸ Foetal distress (24.7%), abnormal presentation (19.3%), Antepartum hemorrhage (11.2%) were the important causes of primary caesarean section in multi in the above study. In a study by Rupal et al the primary caesarean section in multi was 6%. Foetal distress was the commonest cause of caesarean section in multi in the above study.¹³

Among the 52.1% caesarean deliveries 32.6% was caesarean delivery in primi parous women, 17% was repeat caesarean in multi, 2.5% was primary caesarean in multi. Overall primary caesarean rate was 35.1% (32.6% + 2.5%). Among the 2.5% cases of primary caesarean in multi majority were gravida 2 and 3. Incidence of LSCS in primi was significantly greater than multi. Incidence of LSCS in primi was significantly greater than primary LSCS in multi.

In the age of group of 15 to 25 years, the increased incidence of caesarean in primi was statistically significant than the incidence of primary caesarean in multi of the same age group. In the age group of 25-29 the incidence was same between the two groups. After 30 years the incidence in multi group was higher than primi group.

In our study 77.6% of the primary caesarean sections in the multi group was in the age group of 20 - 29 years. In the study by Himabindu et al. 90.821% of the primary caesarean section in multi group was in the age group of 21-30 years. In our study 81.6% of the caesarean section in the primi group was in the age group of 20-29 years.

In our study foetal distress was the commonest indication of caesarean section in both groups. In our study CPD and Failed induction were the next two common

indications for caesarean section in the primi group and it was statistically significantly higher than the multi group.

In our study malpresentation and antepartum hemorrhage were the next two common causes of the caesarean section in the multi group and it was statistically significantly higher than the primi group. All other indications for caesarean sections in the primi and multi group did not differs statistically.

In our study 89.9% of the mothers in the multi group were gravida 2 (66.3%) and gravida 3(23.6%). In study by Himabindu et al 92.4% of primary caesarean section in multi were gravida 2 (63.9%) and gravida 3 (28.5%).

In our study 77.6% in the multi group was in the age group of 20-29 years. 2.2% was less than 20 years, 1.1% was above 40 years, 19.1% was in the age group of 30-39 years. In a study by Himabindu et al 90.84% of primary caesarean in multi were in the age group of 21-30 years, 2.15% were less than 20 years, 6.97% were in the age group of 31-40 years.

Raising trends in caesarean section may be due

- Referral hospital gets larger number of complicated pregnancies
- LSCS performed for slightest indications of FHR abnormalities
- Decreasing trends in instrumental delivery, VBAC.

CONCLUSION

It is obvious from the study that without reducing the caesarean section rate in primi we cannot bring down the overall caesarean rate of delivery. With proper adolescent care, prenatal care, prenatal counseling, life style modification in diet and exercise we can achieve this. Careful intra partum monitoring with hospital based strict protocols will definitely help to achieve this.

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