

Original Research Article

To find perinatal outcome in twins with different modes of delivery at a tertiary care centre

Dr Divya Gupta¹, Dr Premlata Mital², Dr Lata Rajoria³, Dr Devendra K. Benwal⁴, Dr Sunita Singhal¹, Dr Richa Ainani¹¹PG Student, Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur²Senior Professor and Unit Head, Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur³Senior Professor and Head of Department, Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur⁴Assistant Professor, Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur

*Corresponding author

Dr Premlata Mital

Email: drprelatamital@gmail.com

Abstract: Twin pregnancies are associated with an increased risk of obstetric complications as well as perinatal morbidity and mortality especially in developing countries. Perinatal outcome depends on gestational age, presentation of the fetuses and mode of delivery. This study is designed to find perinatal outcome in twins with different modes of delivery. This was a prospective observational study done to find perinatal outcome in twin pregnancy with respect to mode of delivery in the Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur from April 2015 to March 2016. It included 150 pregnant women with twin pregnancies at gestational age of 28 weeks and above admitted for delivery and consented for the study. All the necessary information regarding demographic data, clinical findings and outcomes of each participant and their babies were collected by using data collecting form. Majority of the women with cephalic presentation of 1st twin had vaginal delivery (65.7%) as compared to non cephalic presentation where majority of the women had caesarean delivery (73.3%). Mean weight and Apgar at 5 minute of both first twins and second twins were significantly more in caesarean group. Admission to NICU and perinatal mortality were significantly more in vaginal delivery for both first and second twins. Malpresentation was the commonest indication for caesarean section. Elective caesarean section should be considered as safe method of delivery for 1st non cephalic twin and for cephalic-non cephalic twins. Vaginal delivery should be allowed for cephalic-cephalic twins.

Keywords: Twin pregnancy, perinatal outcome, mode of delivery.

INTRODUCTION

With the widespread increase in ovulation induction and assisted reproductive technology especially in-vitro fertilisation, there is increase in prevalence of twin pregnancy [1, 2]. It accounts for 1% of pregnancies in India. It is believed to be responsible for 10% of perinatal mortality [3-6]. Twin pregnancies are associated with an increased risk of obstetric complications as well as perinatal morbidity and mortality especially in developing countries. Perinatal outcome depends on gestational age, presentation of the fetuses and mode of delivery. Management of twins especially to decide the optimal mode of delivery is still controversial but it is considered that for non cephalic first twin caesarean delivery should be opted for better outcomes. In majority of the countries the caesarean rate for twin pregnancies is approximately 50% [1, 2, 7]. In our country a variable caesarean rate has been observed by different authors. It was 28.5% by Yadav C M *et al.* 2015 [8], 20.32% by Arora GG *et al.* [9],

68.02% by Shetty MB *et al.* 2016 [10]. Various studies observed that caesarean rate ranged from 68 to 95% for twin pregnancies conceived by assisted reproduction [7, 11-13] which is higher than 50% caesarean rates for twin pregnancies conceived spontaneously [1]. It may be due to anxiety and stress of would be the mother or increasing age of the women.

There is limited information about perinatal outcome in twin pregnancy with respect to mode of delivery. This study is designed to find perinatal outcome in twins with different modes of delivery and information of this study may help clinicians on how to manage twin pregnancies and improve perinatal outcome.

MATERIALS AND METHODS

The present study was done to find perinatal outcome in twin pregnancy with respect to mode of delivery in the Department of Obstetrics and Gynaecology, S.M.S. Medical College, Jaipur from

April 2015 to March 2016. This was a hospital base, prospective observational study involving 150 pregnant women with twin pregnancies at gestational age of 28 weeks and above admitted for delivery and consented for the study. The gestation age was determined by either dates from the first day of the last normal menstrual period or by extrapolations from early obstetric ultrasound or first visit found on the antenatal card when reporting in labour ward. All the necessary information regarding demographic data, clinical findings, obstetric scan if present, and outcomes of each participant and their babies were collected during admission and during the course of management by using data collecting form. Patients (both mothers and babies) were followed within seven days. Those patients who were discharged early were asked to leave their mobile phone numbers or attend Obstetric and Gynecology clinic at day seven.

Data entry was done using Microsoft Excel sheet. Statistical analysis was done using computer software. Numeric values were expressed as mean and standard deviations. One way analysis of variance was performed for comparing means of groups. Chi-square test or Tukey HSD Post-hoc Test was done to calculate p value. In analysis a p-value of less than 0.05 was considered statistically significant.

RESULTS

The occurrence of twins in our study was 28.2/1000 livebirths. Out of 150 women with twin pregnancies, 81 (54%) had vaginal delivery and 69 (46%) had caesarean section. Table 1 shows demographic profile of the women with mode of delivery. Mean age of the women with twin pregnancy in vaginal delivery and caesarean section group was 24.39±3.59 and 24.46±3.2 years and the difference in the age in two groups was statistically not significant (p 0.9). Two groups statistically did not differ in relation to religion, literacy status, residence and maternal BMI. There was significant difference in the parity of the women in two groups. In caesarean section group majority of the women were nulliparous.

Out of 150 twin pregnancies, 105 (70%) had cephalic presentation of the 1st foetus and 45 (30%) had

non cephalic presentation. Out of 105 women with cephalic presentation of 1st foetus, 65.7% delivered vaginally and 34.3% delivered by caesarean section while out of 45 women with non cephalic presentation, 73.3% delivered by caesarean section. The difference in both the groups was statistically highly significant (p 0.00001). (Table 2a)

Out of 105 women with cephalic presentation, 63.8% had cephalic-cephalic, 32.4% had cephalic - breech and 3.8% had cephalic - transverse presentation of fetuses and out of 45 non-cephalic presentation, 40% had breech – breech, 46.7% had breech – cephalic and 13.3% had breech – transverse presentation. Majority of the women with cephalic presentation had vaginal delivery as compared to non cephalic presentation where majority of the women had caesarean delivery. (Table 2b)

Perinatal outcomes with different modes of delivery are shown in table 3. When the babies were delivered preterm (≤32 weeks) most of them delivered vaginally and the difference was statistically significant. Mean weight of both first twin and second twin were significantly more in caesarean group. There was no significant difference between gender of the babies delivered by vaginal route or by caesarean section. Apgar score at 5 min of 1st twin in vaginal and caesarean delivery was 5.52±2.16 and 6.29±1.52 respectively and the difference was statistically significant (p 0.01). Apgar score at 5 min of 2nd twin in vaginal and caesarean delivery was 5.46±2.24 and 6.31±1.35 respectively and the difference was statistically significant (p 0.006). Admission to NICU and perinatal mortality were significantly more in vaginal delivery for both first and second twins.

Table 4 shows various indications of caesarean section in twin pregnancy. The commonest indication in twin was malpresentation (49.3%) followed by fetal distress (14.5%), previous CS (10.1%). Other indications were hypertensive disorder of pregnancy (8.6%), abruption placentae (5.8%), PROM (4.34%), IUGR (2.9%), placenta previa (2.9%) and CPD (1.4%).

Table 1: Demographic profile of mother and mode of delivery

Demographic profile	Vaginal delivery (n=81)	Caesarean section (n=69)	p value
Mean age (years)	24.39±3.59	24.46±3.2	0.9 ns
Hindu	69 (85.2)	52 (75.4)	0.128 ns
Urban	50 (61.7)	38 (55.1)	0.409 ns
Literate	44 (54.3)	40 (57.9)	0.653 ns
Maternal BMI (Kg/M ²)	23.6±2.21	24.2±3.12	0.171 ns
Parity			
0	24 (29.6)	35 (50.7)	0.008 sig
≥1	57 (70.4)	34 (49.3)	

ns-not significant, sig - significant

Table-2a: Mode of delivery in twins according to presentation of first foetus

Presentation	Mode of delivery				p value
	Vaginal delivery		LSCS		
	No.	%	No.	%	
Cephalic (n=105)	69	65.7	36	34.3	X ² = 19.3352 0.00001
Non-cephalic (n=45)	12	26.7	33	73.3	
Total (n=150)	81	54.0	69	46.0	

Table-2b: Mode of delivery in twin pregnancy according to their presentation

Presentation			Mode of delivery in twin group			
			Vaginal		LSCS	
	No	%	No.	%	No.	%
Cephalic (n=105)						
Cephalic- Cephalic	67	63.8	47	70.1	20	29.9
Cephalic-Breech	34	32.4	20	58.8	14	41.2
Cephalic-Transverse	4	3.8	2	50.0	2	50.0
Non cephalic (n=45)						
Breech- Breech	18	40.0	6	33.3	12	66.7
Breech - Cephalic	21	46.7	4	19.0	17	81.0
Breech-transverse	6	13.3	2	33.3	4	66.7

Table-3: perinatal outcome

	Mean ± standard deviation, or No. (%)		
	Vaginal delivery(n =81)	LSCS (n=69)	
Gestation at delivery ≤32 weeks	30 (37.0)	12 (17.4)	0.007
1st Twin birth weight (kg)	1.93±0.62	2.12±0.48	0.04
2nd Twin birth weight (kg)	1.85±0.59	2.10±0.49	0.005
1st Twin gender			0.79
Male	37 (45.7)	33 (47.8)	
Female	44 (54.3)	36 (52.2)	
2nd Twin gender			0.77
Male	43 (53.1)	35 (50.7)	
Female	38 (46.9)	34 (49.3)	
1st Twin Apgar score at 5th min	5.52±2.16	6.29±1.52	0.01
2nd Twin Apgar score at 5th min	5.46±2.24	6.31±1.35	0.006
1st Twin NICU Admission	28 (34.6)	11 (15.9)	0.009
Yes			
2nd Twin NICU Admission	31 (38.3)	14 (20.3)	0.01
Yes			
1st Twin Perinatal Mortality	20 (24.7)	7 (10.1)	0.02
Yes			
2nd Twin Perinatal Mortality	21 (25.9)	7 (10.1)	0.01
Yes			

Table-4: Indications of caesarean section in twin pregnancy

INDICATION	Twin Pregnancy (n = 69)	
	No.	%
Malpresentation	34	49.3
IUGR	2	2.9
Previous LSCS	7	10.1
Hypertensive disorders	6	8.6
Placenta Previa	2	2.9
Abruptio Placenta	4	5.8
Fetal Distress	10	14.5
PROM	3	4.3
CPD	1	1.4

DISCUSSION

The occurrence of twins in our study was 28.2/1000 livebirths which was consistent with previous studies done by Adamson H [14], Peter B [15], Musili FKJ [16]. But it was lower than that reported by Nigerian investigators Olusanya BO [17], Abasiattai AM [18] and Iyiola OA [19]. The variation in twinning rate may be explained by the differences in prevalence of risk factors for twinning between the study populations. The mean age of women was 24.39 ± 3.59 and 24.46 ± 3.2 years in vaginal and caesarean delivery group respectively. The difference in the age between the two groups was statistically not significant (p value 0.9). Our results were in contrast with that of George Eleje and Zebulon [20], Morten bjerregaad-Andersen [21] and Godwin *et al.* [22] who reported a higher mean age i.e. 30 ± 2.33 , 28.4 and 26.5 yrs respectively. This could be because of practice of early marriages which is still prevalent in our state.

In our study 46% women with twin pregnancy had caesarean section. When the first twin had non cephalic presentation caesarean section was done in 73.3% as compared to 34.3% when first twin had cephalic presentation. Various studies have reported significantly higher rates of Caesarean sections in twin pregnancies with a range of 20 – 76% [23-25]. Liu AL 2012 had reported 82% caesarean section rate in their study [26].

In our study mean weight of both first twins and second twins were significantly more in caesarean group. There was no significant difference between gender of the babies delivered by vaginal route or by caesarean section. The Apgar score at 5 minute was significantly higher in both first and second twins in caesarean delivery. Admission to NICU and perinatal mortality were significantly more in vaginal delivery for both first and second twins. Our results were consistent with that observed by Liu AL 2012 in their study [26]. Similarly Smith G CS *et al.* [27] observed that the risk of perinatal death was approximately 75% lower among women delivered by planned caesarean section compared with attempting vaginal birth. This is principally due to reducing the risk of death of the second twin due to intrapartum anoxia. Vaginal delivery is recommended for twins when both twins present by vertex and it is considered to be safe as long as one follows guidelines for the conduct of such delivery.²⁸ For non cephalic 1st twin elective caesarean section should be done and when 1st twin is cephalic and 2nd twin non cephalic pros and cons of the vaginal delivery and caesarean section should be explained and caesarean section in these would help in reducing perinatal mortality of the second twin because of intrapartum hypoxia.

Malpresentation was the commonest indication for caesarean section followed by foetal distress in our study. Our results were consistent with that of Shetty MB *et al.* [10] and Arora GG *et al.* [9] who also observed malpresentation to be the commonest indication for caesarean section followed by foetal distress in their studies.

CONCLUSION

Twin pregnancy is associated with high perinatal morbidity and mortality and the most common cause for this is prematurity. Elective caesarean section should be considered as safe method of delivery for 1st non cephalic twin and for cephalic-non cephalic twins. Vaginal delivery should be allowed for cephalic-cephalic twins. Health persons should be trained for antepartum diagnosis of foetal presentation which would help in deciding the mode of delivery.

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