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Study on perinatal outcome in twin pregnancies at ESI- PGIMSR, ESIC Medical College & Hospital, Joka, Kolkata

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Abstract

Multiple pregnancy is usually associated with increase perinatal and neonatal outcome. The risk of maternal mortality is 2.5 times more than singleton pregnancy. The aim of this study is to assess perinatal outcome.

Method: A hospital-based retrospective cross-sectional study was conducted among 40 women who had multiple pregnancy at ESIC Medical College between 01/01/2023 to 30/05/2024. In these study all primi and multi gravid with age between 18-40 years were included and the perinatal outcomes were assessed in the form of: low birth weight, preterm birth, Apgar Scores, mode of delivery and neonatal Intensive Care Unit (NICU) admission. The data were analyzed using Microsoft EXCEL to obtain results.

Results: Among 2507 births recorded in the hospital, 40 births were twins and 2467 were singleton pregnancy. Of the total 40 (twin) birth records (2507 individual birth records), 9 (22.50%) of twin-1 got admitted at NICU and 10 (25%) of Twin-2 got admitted at NICU. Our study shows Low birth weight 35 (87.50%) and preterm birth 35 (87.50%) and NICU admission (22.50-25%).

Conclusion: Good antenatal care and early treatment of associated comorbidities will minimize the complication.

Keywords: Multiple pregnancy, preterm birth, NICU admission, cesarean section, low birth weight

Introduction

The rate of twin pregnancy has been increased globally since last four decades^[1]. Risk factor for multiple pregnancy is consanguinity, family history and ovulation induction drugs and IVF. A current estimate suggested, about 80% of twin pregnancies occurred either in Africa or Asia^[1]. Twin pregnancy due to a complex interaction of different factors such as maternal age, parity, family history of multiple pregnancies and others^[2, 3]. Due to inherent biological factors, a twin pregnancy is associated with various adverse perinatal outcomes and maternal obstetrics complications^[4]. The most common maternal complication are Pre-eclampsia, GDM, Abruptio placentae, placenta previa, PROM increase operative delivery and fetal complication are Preterm birth, low birth weight, twin to twin transfusion syndrome, discordant twins and admission to neonatal intensive care unit (NICU).

Methods and Materials

A hospital-based retrospective cross-sectional study was conducted among mothers who gave birth to twins at ESI-PGIMSR, ESIC Medical College & Hospital between 01/01/2023 to 30/05/2024.

Inclusion and exclusion criteria: Primi and multigravida age from 18-40 years and multiple pregnancy. Exclusion criteria was Singleton and chronic medical disorder. The patient was monitored throughout the pregnancy and maternal outcome were noted in the form of complication i.e. pre-eclampsia, GDM (Gestational Diabetes Mellitus), mode of delivery and development of PPH. The perinatal outcome were assessed by low birth weight, preterm delivery, Apgar scores, admission to the neonatal intensive care unit (NICU).

The data were analyzed using Microsoft Excel to obtain results.

Results

Socio-demographic and obstetrics characteristics

A total of 2507 births were recorded during the study period at ESI-PGIMS, ESIC Medical College & Hospital. Of these, twin-births accounted for 40 (1.6%). The mean maternal age at birth was 27.82 years. About 42.50% of twin births were recorded within the age range of 25–29 years [Fig.1]. Regarding obstetrics characteristics, the majority of mothers (57.50%) had primi para. All 40 mother (100%) had ANC follow up and ultrasound examinations were performed for 40 (100%) mothers during ANC follow up (See Table 1 for the details).

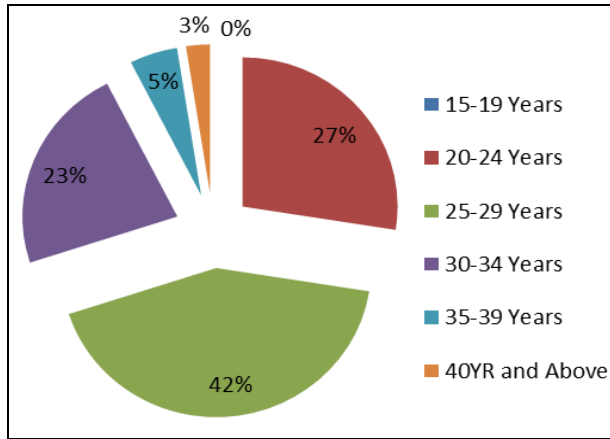


Fig 1: Distribution of maternal age

Table 1: Socio-demographic factors of twin mothers:

Variables	Frequency	Percentage (%) - Out of 40
Maternal Age (YRS)		
15-19	0	0
20-24	11	27.50
25-29	17	42.50
30-34	9	22.50
35-39	2	5
40 yr and Above	1	2.50

Obstetric characteristics

Table 2: Obstetric characteristics of twin births:

Variable	Frequency	Percentage (%)
Gravida		
G1 (PRIMI)	23	57.50
G2	14	35
G3 and above	3	7.5
POG at Birth		
<37WKS	35	87.50
37-40WKS	5	12.50
Above 40 wks	0	0

Regarding obstetrics characteristics, the majority of mothers 23 (57.50%) had primi gravida. Approximately 35 (87.50%) of the mothers gave births at pre-term (less than 37 completed weeks) and nearly 5 (12.50%) of mothers at term. (See Table-2 for the details).

Table 3: Comorbidity

Variable	Frequency	Percentage (%)
Comorbidity		
Present	32	80
Absent	8	20

In our study, 80% have co-morbidities like Pre-eclampsia, GDM, Hypothyroids and Placenta previa.

Table 4: Co-morbidities

DCDA	Frequency	Percentage (%)
GDM	3	7.50
DLFT	1	2.50
PROM	6	15
Hypothyroid	2	5
Post CS	2	5
MCDA		
GDM	1	2.5
HDP	2	5
DLFT	2	5
PE	1	2.5
PROM	2	5
RH-Negative	1	2.5

Table 5: Mode of delivery

Variable	Frequency	Percentage (%)
NVD	7	17.50
LSCS	32	80
Instrumental	1	2.5

In our study 7 (17.50%) of the mothers delivered normal vaginal delivery, 32 (80%) of them gave birth by caesarean section (Table-5). The indication for cesarean section are malpresentation and associated co-morbidities.

Table 6: Perinatal outcome

	Frequency	Percentage (%)
Low Birth Weight (<2.5KG)	35	87.50
Normal weight (>2.5kg)	5	12.50
Preterm Birth (<37WKS)	35	87.50
Admission to NICU TWIN-1	9	22.50
Admission to NICU TWIN-2	10	25
Low APGAR score at 1 min (<7)-TWIN 1	15	37.50
Low APGAR score at 1 min (<7)-TWIN 2	13	32.50

In our study, low birth weight was 35 (87.50%) and preterm birth 35 (87.50%) and NICU admission (was 22.50-25%). Of the total 40 (twin) birth, 9 (22.50%) of twin-1 got admitted at NICU and 10 (25%) of Twin-2 got admitted at NICU (Table-6).

Table 7: Types of twins

Variable	Frequency	Percentage (%)
DCDA	28	70
MCDA	11	27.50
MCMA	1	2.5

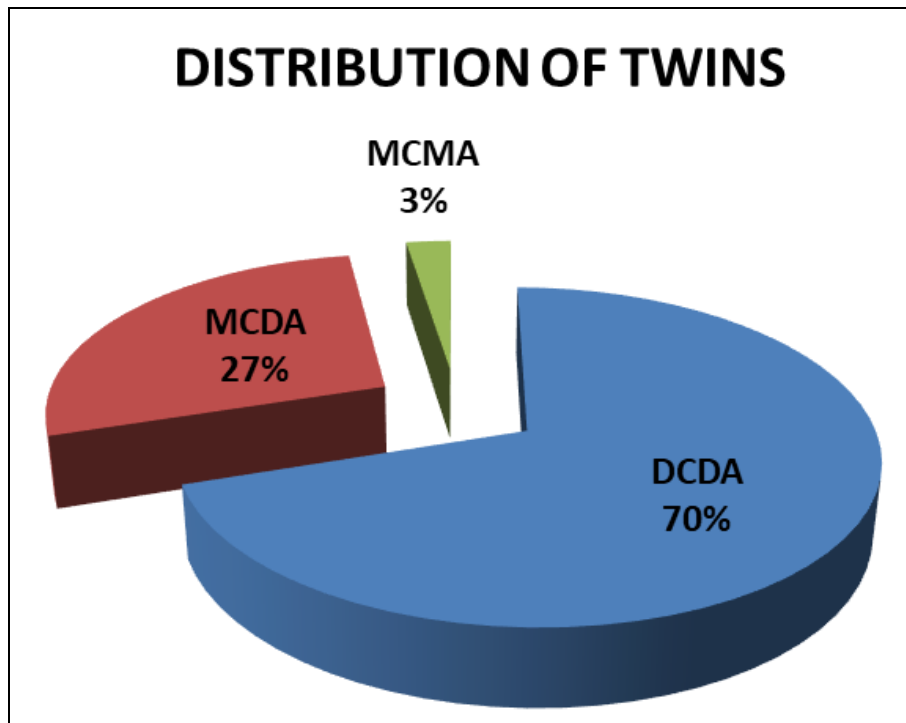


Fig 3: Distribution of twins

In our study, DCDA twin was 70%, MCDA 27.50% and MCMA 2.5%.

Discussion

In our study the prevalence of twin pregnancy was 15.96 per 1000 births which is comparable with Addis Ababa (24 per 1000) [5], Mekelle (14 per 1000) [6] and Gondar (14.9 per 1000) [7]. In our study, the majority of twin births (42.50%) were recorded among mothers within the age range of 25–29 years which is comparable with (44.4% among mothers within the range of 24-29years) [3].

Regarding the mode of delivery among twin pregnancies, it was found that 17.50% of mothers gave birth through spontaneous vaginal deliveries while 80% required caesarean section and instrumental vaginal delivery was 2.5%, which is comparable with Cesarean section (49.2%), including that performed electively, was the most common mode of delivery in twin [8].

In our study, it was found that the incidence of adverse perinatal outcomes was 87.50%, with low birth weight and preterm birth being the commonest adverse perinatal outcomes followed by NICU admission which is comparable with other studies, ranging from 31% to 44%, but some reporting up to 63% [8].

Higher early preterm rates are important, as they are associated with higher neonatal morbidity and perinatal death rates, mainly due to respiratory complications [8].

Among the twins, DCDA was 70%, MCDA was 27.50% and MCMA was 2.50% [Fig.3].

Among the twin mothers, 80% mothers have Co-morbidities like Pre-eclampsia, GDM, Placenta previa, DLFT (Deranged LFT), Hypothyroid.

Among the twins, 5% was IVF-Pregna

Conclusion

Multiple pregnancy is usually associated with maternal and fetal complication as well as adverse perinatal outcome. Good antenatal care and proper screening and treatment will minimize the complication.

Conflict of Interest

Not available

Financial Support

Not available

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