

The Maternal and Foetal Outcome of Multiple Pregnancy

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Abstract

Original Research Article

Objective: In this study our main goal is to evaluate the maternal and foetal outcome of multiple pregnancy. **Method:** This cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Sylhet M.A.G. Osmani Medical College Hospital, Sylhet from November 2019 to June 2020. A total of 50 multiple pregnancies cases where women who admitted in Department of Obstetrics and Gynaecology were included in the study. **Results:** During the study, family history of multiple pregnancy was present in 11 (22.0%) patients, use of ovulation inducing drugs or assisted reproductive technology (ART) was in 6 (12.0%) patients and no recognized risk factors was in 33 (66.0%) patients. Anaemia was the most frequent maternal complication of multiple pregnancy (64.0%). Other complications were preterm labour (56.0%), pregnancy induced hypertension (30.0%), premature rupture of membrane (14.0%) postpartum haemorrhage (12.0%), polyhydramnios (10.0%), antepartum haemorrhage (8.0%), gestational diabetes mellitus (6.0%). No maternal mortality in multiple pregnancy in this study. Vertex-vertex was the most frequent foetal presentation in multiple pregnancy (42.0%). Other foetal presentations were vertex-breech (26.0%), breech-vertex (14.0%), breech-breech (8.0%), vertex-transverse (6.0%) and breech-transverse (4.0%). 0-6 in 14 (28.0%) and was 7-10 in 36 (72.0%) new born babies; it was 17 (34.0%) and 33 (66.0%) new born babies respectively in second twin. vaginal delivery in 24 (48.0%) cases and caesarean section in 26 (52.0%) cases in first twin; while vaginal delivery in 21 (42.0%) cases and caesarean section in 29 (58.0%) cases in second twin. According to foetal outcome, birth asphyxia was in 11 (11.0%) cases, LBW was in 75 (75.0%) cases, admission to neonatal ward was in 43 (43.0%) cases and still born was in 13 (13.0%) cases. **Conclusion:** Multiple pregnancies are associated with increased maternal and perinatal risks. There is a need for early diagnosis and should receive regular antenatal care and care during delivery to reduce complications and adverse outcome in multiple pregnancies. There is also need for ongoing social and medical care beyond the prenatal and perinatal periods.

Keywords: Multiple pregnancy, vaginal delivery, caesarean section.

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INTRODUCTION

Multiple pregnancy now warrants special attention from obstetricians. Recognizing the specialized nature of multiple pregnancy management, the Royal College of obstetrics and Gynaecology (RCOG) study group on multiple pregnancies has recommended that, like for diabetes, multiple pregnancies be managed within any one hospital by a single consultant led multi-disciplinary team. traditional approximation of the incidence of multiple pregnancy is 1:80 and triplets 1:6400 [1]. Twins and higher-order multiple pregnancies account for approximately 3% of all gestations in the United States [2], and seem to be

stabilized since 2006 after a dramatically increase since the beginning of the 1970s [3]. In Nigeria, the reported rates of twin delivery varied from 28 per 1000 deliveries. Other African countries have an average overall rate of 20 per 1000 deliveries [4]. The rate ranged from 6 per 1000 deliveries in Asia to 11 per 1000 deliveries in Europe and America [5]. In Pakistan, the reported rates of twin delivery varied from 32 per 1000 deliveries [6]. In India, twinning occurs in approximately 1% of pregnancies and has been reported to be responsible for 10% of perinatal mortality [7-10]. Twinning is a multi-factorial phenomenon principally attributable to genetic and environmental factors, such as advanced maternal age and increased parity [11, 12].

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There are two main causes for the change in the rate of multiple pregnancies: advanced maternal age [13], and advances in assisted reproductive techniques such as drugs for induction of ovulation in vitro fertilisation and a variety of intra-fallopian transfer procedures have resulted in increased number of higher order multiple pregnancy [14-16]. In this study our main goal is to evaluate the maternal and foetal outcome of multiple pregnancy.

OBJECTIVE

- To assess the maternal and foetal outcome of multiple pregnancy.

METHODOLOGY

Study design: This was a cross-sectional descriptive study.

Place and period of study: This study was conducted in the Department of Obstetrics and Gynaecology, Sylhet M.A.G. Osmani Medical College Hospital, Sylhet from November 2019 to June 2020.

Study population: 50 multiple pregnancies cases where women who admitted in Department of Obstetrics and Gynaecology Sylhet MAG Osmani Medical College Hospital, Sylhet during the study period were the target population and those fulfilled the inclusion and exclusion criteria were included as study population.

Sampling method: Consecutive and convenient (purposive) sampling was employed as sampling technique in this study.

Inclusion Criteria:

- Multiple pregnancy
- Gestational age 28 weeks and above
- Both primigravida and multigravida
- Any age

Exclusion Criteria

- Singleton pregnancy

Data collection tool: Both quantitative and qualitative data were collected using semi-structured and pre-designed questionnaire designed for the study.

Procedures of collecting data

Informed written consent was taken from the patients after detailed explanation of the purpose of study. The diagnosis of multiple gestations was established by transabdominal ultrasonographic imaging and the last ultrasonographic examination before delivery were used to establish correct diagnosis. Whenever multiple pregnant woman was identified a detailed history were taken. General, physical and obstetric examinations were performed. Gestational age was established from the history of last menstrual

period in regular menstruating woman or by ultrasound at early pregnancy. Maternal data included the following: maternal age, duration of pregnancy (gestational age), parity, nature of conception-spontaneous or assisted reproductive techniques, use of ovulation induction drugs, maternal medical or antepartum complications, mode of delivery, intrapartum complications and postpartum complications and maternal mortality. Perinatal outcomes included normal baby, birth asphyxia, low birth weight, admission to neonatal ward and still birth. A structured questionnaires and a check list were used for data collection.

Procedure of data analysis and interpretation

Data were processed manually and analyzed with the help of SPSS (Statistical package for social sciences) Version 21.0. Quantitative data were expressed as mean and standard deviation. Qualitative were expressed as frequency and percentage.

RESULTS

In Figure-1 shows age distribution of the patients. The age of the patients ranged from 20 to 35 years with the mean age of 28.48 (SD \pm 4.38) years. Figure-1 showed the distribution of the patients according to age. There were 17 (34.0%) patients in the age group of 20-25 years, 19 (38.0%) patients in the age group of 26-30 years and 14 (28.0%) patients in the age group of 31-35 years. The following figure is given below in detail:

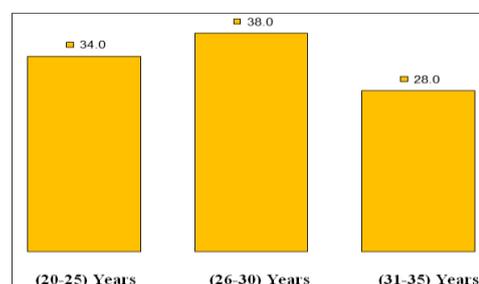


Fig-1: Distribution of the patients according to age (n=50)

In Table-1 shows gestational age of the patients where the gestational age of the patients ranged from 28 to 40 weeks with the mean gestational age of 36.34 (SD \pm 3.11) weeks. There were 8 patients (16.0%) in the gestational age group of 28 to 34 weeks, 20 patients (40.0%) in the gestational age group of 34 to 37 weeks and 22 patients (44.0%) in the gestational age group of 37 to 40 weeks. The following table is given below in detail:

Table-1: Distribution of the patients by gestational age (n=50)

| Gestational age | Frequency | Percentage |
|------------------------|-----------------------|------------|
| 28 to 34 weeks | 8 | 16.0 |
| 34 to 37 weeks | 20 | 40.0 |
| 37 weeks to 40 weeks | 22 | 44.0 |
| Mean (\pm SD) weeks | 36.34 (SD \pm 3.11) | |

In Table-2 shows distribution of patients by risk factors of multiple pregnancy (n=50). Family history of multiple pregnancy was present in 11 (22.0%) patients, use of ovulation inducing drugs or assisted

reproductive technology (ART) was in 6 (12.0%) patients and no recognized risk factors was in 33 (66.0%) patients. The following table is given below in detail:

Table-2: Distribution of patients by risk factors of multiple pregnancy (n=50)

| Risk factors of multiple pregnancy | Frequency | Percentage |
|------------------------------------|-----------|------------|
| Family history | 11 | 22.0 |
| Ovulation inducing drugs or ART | 6 | 12.0 |
| None | 33 | 66.0 |

In Table-3 shows distribution of patients by maternal complications (n=50). Anaemia was the most frequent maternal complication of multiple pregnancy (64.0%). Other complications were preterm labour (56.0%), pregnancy induced hypertension (30.0%), premature rupture of membrane (14.0%) postpartum

haemorrhage (12.0%), polyhydramnios (10.0%), antepartum haemorrhage (8.0%), gestational diabetes mellitus (6.0%). No maternal mortality in multiple pregnancy in this study. The following table is given below in detail:

Table-3: Distribution of patients by maternal complications (n=50)

| Maternal complications | Frequency | Percentage |
|--------------------------------|-----------|------------|
| Pregnancy induced hypertension | 15 | 30.0 |
| Anaemia | 32 | 64.0 |
| Gestational diabetes mellitus | 3 | 6.0 |
| Premature rupture of membrane | 7 | 14.0 |
| Preterm labour | 28 | 56.0 |
| Antepartum haemorrhage | 4 | 8.0 |
| Polyhydramnios | 5 | 10.0 |
| Postpartum haemorrhage | 6 | 12.0 |
| Maternal mortality | 0 | 0.0 |

Some of patients had multiple complications.

In Table-4 shows distribution of patients by foetal presentation (n=50). Vertex-vertex was the most frequent foetal presentation in multiple pregnancy (42.0%). Other foetal presentations were vertex-breech (26.0%), breech-vertex (14.0%), breech-breech (8.0%), vertex-transverse (6.0%) and breech-transverse (4.0%). The following table is given below in detail:

Table-4: Distribution of patients by foetal presentation (n=50)

| Foetal presentation | Frequency | Percentage |
|---------------------|-----------|------------|
| Vertex-vertex | 21 | 42.0 |
| Vertex-breech | 13 | 26.0 |
| Breech-vertex | 7 | 14.0 |
| Breech-breech | 4 | 8.0 |
| Vertex-transverse | 3 | 6.0 |
| Breech-transverse | 2 | 4.0 |

In Table-5 shows mode of delivery where vaginal delivery in 24 (48.0%) cases and caesarean section in 26 (52.0%) cases in first twin; while vaginal delivery in 21 (42.0%) cases and caesarean section in 29 (58.0%) cases in second twin. The following table is given below in detail:

Table-5: Distribution of patients by mode of delivery (n=50)

| Mode of delivery | First twin | Second twin |
|-------------------|------------|-------------|
| Vaginal delivery | 24 (48.0) | 21 (42.0) |
| Caesarean section | 26 (52.0) | 29 (58.0) |
| Total | 50 (100.0) | 50 (100.0) |

In Table-6 shows APGAR score at one minute in cases of first twin was 0-6 in 14 (28.0%) and was 7-10 in 36 (72.0%) new born babies; it was 17 (34.0%) and 33 (66.0%) new born babies respectively in second twin. The following table is given below in detail:

Table-6: Distribution of new born babies by APGAR score (n=50)

| APGAR score | First twin | Second twin | Total |
|--------------------|------------|-------------|-----------|
| At 1 minute | | | |
| 0-6 | 14 (28.0) | 17 (34.0) | 33 (33.0) |
| 7-10 | 36 (72.0) | 33 (66.0) | 67 (67.0) |
| At 5 minute | | | |
| 0-6 | 11 (22.0) | 13 (26.0) | 24 (24.0) |
| 7-10 | 39 (78.0) | 37 (74.0) | 76 (76.0) |

In Table-7 shows birth weight of the babies. Low birth weight (<2500 gm) was in 36 (72.0%) and normal birth weight (2500 gm or above) in 14 (28.0%)

new born babies in first twin; it was 39 (78.0%) and 11 (22.0%) new born babies respectively in second twin. The following table is given below in detail:

Table-7: Distribution of new born babies by birth weight (n=50)

| Birth weight | First twin | Second twin | Total |
|------------------|------------|-------------|-----------|
| <2500 gm | 36 (72.0) | 39 (78.0) | 21 (21.0) |
| 2500 gm or above | 14 (28.0) | 11 (22.0) | 25 (25.0) |

In Table-8 shows foetal outcome of the patients where birth asphyxia was in 11 (11.0%) cases, LBW was in 75 (75.0%) cases, admission to neonatal

ward was in 43 (43.0%) cases and still born was in 13 (13.0%) cases. The following table is given below in detail:

Table-8: Distribution of foetal outcome (n=50)

| Foetal outcome | First twin | Second twin | Total |
|----------------------------|------------|-------------|-----------|
| Birth asphyxia | 5 (10.0) | 6 (12.0) | 11 (11.0) |
| Low birth weight babies | 36 (72.0) | 39 (78.0) | 75 (75.0) |
| Admission to neonatal ward | 20 (40.0) | 23 (46.0) | 43 (43.0) |
| Still born | 6 (12.0) | 7 (1.0) | 13 (13.0) |

***Some of the new born babies had multiple outcome.**

DISCUSSION

This study also showed that there were 8 patients (16.0%) in the gestational age group of 28 to 34 weeks, 20 patients (40.0%) in the gestational age group of 28 to 34 weeks and 22 patients (44.0%) in the gestational age group of 37 to 40 weeks. This result was in agreement with the study that 64.0% of multiple pregnancies delivered their babies before 37 weeks of gestation and 36.0% of multiple pregnancies delivered their babies between 37 to 40 weeks of gestation [15]. In this study 48.0% of women with multiple pregnancies were on regular antenatal checkup; 38.0% of multiple pregnancies were on irregular antenatal checkup and 14.0% of multiple pregnancies had no antenatal care. In this regards other study found that 66% of patients were unbooked with minimal or no antenatal care and 34% of patients were booked patients (having regular antenatal care) [16]. Another article found that 82% of women with multiple pregnancies were unbooked and only 18.0% were booked [7].

In this study 66.0% of women with multiple pregnancies were multigravida and 34.0% of patients were primigravida. This result correlated with the study of other that 66.0% of women with multiple pregnancies were multigravida and 34.0% of patients were primigravida¹⁵ where as another study also found that 68.0% of women with multiple pregnancies were multigravida and 32.0% of patients were primigravida [16].

The present study showed that family history of multiple pregnancy was present in 22.0% of patients and use of ovulation inducing drugs or assisted reproductive technology (ART) was in 12.0% of patients. This result was supported by one study where 36.0% of multiple pregnancies had family history of multiple pregnancy and 8.0% of patients used ovulation

inducing drugs or assisted reproductive technology (ART) [15].

In the current study anaemia was the most frequent maternal complication of multiple pregnancy (64.0%). Other complications were preterm labour (56.0%), pregnancy induced hypertension (PIH) (30.0%), premature rupture of membrane (PROM) (14.0%) postpartum haemorrhage (12.0%), polyhydramnios (10.0%), antepartum haemorrhage (APH) (8.0%), gestational diabetes mellitus (6.0%). No maternal mortality in multiple pregnancy in this study. One study found that 50% were in pre term labour, 32% with PIH, 20% with iron deficiency anemia, 12% with preterm prelabor rupture of membranes, hyperemesis gravidarum 12%, polyhydramnios 8%, antepartum haemorrhage 8% [15]. Other study reported the four leading maternal adverse outcomes were anemia, preterm delivery, pregnancy - induced hypertension and preterm premature rupture of membranes in descending order of frequency [7].

In this study vertex-vertex was the most frequent foetal presentation in multiple pregnancy (42.0%). Other foetal presentations were vertex-breech (26.0%), breech-vertex (14.0%), breech-breech (8.0%), vertex-transverse (6.0%) and breech-transverse (4.0%). One study found that 24 (48%) twin pairs presented as cephalic-cephalic, 4(8%) presented as cephalic-breech, 3(6%) presented as cephalic-transverse, 0(12%) presented as breech-cephalic, 8(16%) presented as breech-breech and 1(2%) twin pair presented as transverse-cephalic. Others also reported more or less similar foetal presentations [15].

This study showed that mode of delivery was vaginal delivery in 42.0% of cases and caesarean section in 58.0% of cases. In first twin vaginal delivery was 48.0% of cases and caesarean section was 52.0% of

cases. This result was supported by one study that most of women with multiple pregnancies the mode of delivery was caesarean section (70.0%) and rest were vagina delivery (30.0%) [15]. This study showed that APGAR score at one minute was less than 7 in 31.0% of new born babies of multiple pregnancies. One study reported that APGAR score at one minute was less than 7 in 75.2% of new born babies of multiple pregnancies [17]. This study showed that APGAR score at five minute was less than 7 in 24.0% of new born babies. One report found that APGAR score at five minute was less than 7 in 27.5% of new born babies of multiple pregnancies [7].

The current study showed that that birth weight was low (<2500 gm) in 72.0% of new born babies and normal birth weight (2500 gm or above) in 28.0% of new born babies of multiple pregnancies. One study found that 92.0% of new born babies of multiple pregnancies were low birth weight [15].

In this study birth asphyxia was present in 11.0% of new born babies of multiple pregnancies other than still born. This result was nearly similar to the study of Qazi [7], that 7.8% of new born babies of multiple pregnancies had birth asphyxia. This study showed that admission to neonatal ward was required in 43.0% of cases. This result was consistent with the study that showed 51.0% of new born babies of multiple pregnancies required admission to neonatal intensive care unit (NICU) [11]. Another study reported 36.3% of new born babies of multiple pregnancies required admission to special care baby unit (SCBU) [17].

CONCLUSION

Multiple pregnancies are associated with increased maternal and perinatal risks. There is a need for early diagnosis and should receive regular antenatal care and care during delivery to reduce complications and adverse outcome in multiple pregnancies. There is also need for ongoing social and medical care beyond the prenatal and perinatal periods.

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