

## Research Article

# **An assessment of maternal complications in woman with twin pregnancy at tertiary care hospital**

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## **ABSTRACT**

**Objective:** To assess the maternal complications in woman with twin pregnancy at tertiary care hospital

**Methods:** This cross sectional study was conducted at Department of Obstetrics & Gynecology Bahawal Victoria Hospital, Bahawalpur from January 2017 to June 2017 over the period of 6 months. Total 432 cases of twin pregnancy having gestational age >20 weeks were selected. Complications of twin pregnancy were assessed.

**Results:** During study period, there were 432 twin pregnancies out of total 13539 pregnancies. Most of the cases were belonged to age group 21-30 years. Primigravida were 45.7% out of total twin pregnancies.

Preterm deliveries was seen in 304 (70%), followed by anemia 259(60%) cases, preterm rupture of membranes in 120 (39.4%) cases, pregnancy induced hypertension in 122(28.3%) cases, cholestasis of pregnancy in 24(5.5%) cases, total 20(4.6%) found with antepartum hemorrhage, gestational diabetes mellitus in 08(1.8%) cases. Total 44 (10.2%) cases were found with PPH and mortality rate was 02(0.46%).

**Conclusions:** In present preterm labor, GDM, PIH and anemia were the most common complications.

Most of the cases found with mild to moderate anemia. In most the cases C-section was performed. PPH was noted in most the cases.

**Keywords:** Twin pregnancy, preterm, GDM, PIH

## **INTRODUCTION**

Although, incidence of multiple pregnancies is variable according to race, age and parity of patients, rising incidence of multiple pregnancy is commonly attributed to fertility enhancing treatments.<sup>1-4</sup>

Maternal and fetal complications are increased from antenatal period to postpartum period except postdatism and macrosomia in multiple pregnancies. Most grave and common complication of multiple pregnancies is preterm delivery that increases the short and long-term perinatal morbidity and mortality.<sup>5</sup> Others fetal

complications are specific to and more in monochorionic pregnancies like discordant twin, twin-twin transfusion syndrome, twin reversed arterial perfusion sequence, twin anemia polycythemia sequence, single fetal demise and congenital anomalies, thus diagnosis of chorionicity is must in early trimester.<sup>6</sup> Undiagnosed cases of chorionicity ought to be treated like monochorionic pregnancies to avoid fetal morbidity and mortality. A significant maternal hemodynamic change due to increase in cardiac output and plasma volume predisposes to

physiological anemia in multiple pregnancies.<sup>7</sup> High incidence of hypertensive disorders of pregnancy have been observed in multiple pregnancies.<sup>8</sup> Hence, increase in plasma volume, anemia and hypertensive disorders in combination increases the risk of pulmonary edema in multiple pregnancies which further increases the risk of maternal morbidity and mortality.<sup>9</sup>

Association of gestational diabetes with multiple pregnancies is still not clear. No significant association of gestational diabetes mellitus with multiple pregnancies was found in one of the study by Buhling KJ et al.<sup>10</sup> Higher incidence of antepartum hemorrhage has been associated with placenta previa along with toxemic abruptio in twin pregnancy.<sup>11</sup>

Atonic postpartum hemorrhage occurs due to overdistended uterus therefore patients with multiple pregnancy have more risk of blood transfusion and its complications.<sup>12</sup> Henceforth, specialized antenatal care is advocated in cases of multiple pregnancies to improve the maternal and fetal outcome by identifying these complications at early instance. World Health Organization has established favorable maternal and fetal outcome by early detection of complications through increasing number of antenatal contacts with health care provider.<sup>13</sup> This study was planned to determine incidence of maternal complication in twin pregnancy in a tertiary care hospital.

## MATERIAL AND METHODS

This cross sectional study was conducted at Department of Obstetrics &Gynecology Bahawal Victoria Hospital, Bahawalpur from January 2017 to June 2017 over the period of 6 months. Total 432 cases of twin pregnancy having gestational age >20 weeks were selected. Patients with any systemic disease and patients with single pregnancy were excluded from the study.

The following data were recorded for each case: maternal age, parity, gestational age at birth and route of delivery. Following Maternal complications were analyzed: Prevalence of preterm delivery, preterm rupture of membranes, anemia, gestational hypertension, and cholestasis

of pregnancy, antepartum hemorrhage, gestational diabetes mellitus and postnatal complications including postpartum hemorrhage and maternal mortality.

Anemia was classified by WHO criteria: mild anemia 9-10.9gm/dl, moderate anemia 7-8.9 gm/dl and severe anemia<7gm/dl.

Gestational diabetes was defined as: any degree of glucose intolerance with onset and 1st recognition during pregnancy after 20 weeks of gestation having oral glucose tolerance test value of fasting serum glucose  $\geq$  95mg/dl and 1 hour serum glucose concentration  $\geq$  180mg/dl and 2 hours serum glucose concentration  $\geq$ 153mg/dl and patient has two abnormal values out of these three values.

Gestational hypertension defined as: diastolic blood pressure of at least 90mmHg or systolic blood pressure of at least 140mmHg measured on at least two occasions 6hours or more apart after gestational age of 20 weeks.

Postpartum hemorrhage was defined when more than 500 ml blood loss in normal delivery and 1liter in cesarean section or any amount of blood loss that leads to unstable vitals in postpartum period.

All the collected data entered in SPSS version 18 and analyzed. Mean and SD was calculated for numerical data and frequency and percentages were calculated for categorical data.

## RESULTS

During this study period, a total of 432 twin pregnancies were found with a gestational age of more than 20 weeks. Out of 432 twin pregnancies, only one patient with diabetes mellitus was excluded from the study.

Total number of births during this period were 19539, with incidence of 22/1000 birth of twin pregnancies. Assisted reproductive techniques contributed to 13.4% of twin pregnancies. Eighty six percent (86.9%) of patients were in the age group of 21-30 years and primigravida contributed to 45.7% of total patients. The rate of cesarean section was 224/431 (51.9%) and cesarean section for delivery of second twin was happened in 5

patients. Most common indication of cesarean section was abnormal presentation 114/224 (50.9%) followed by previous cesarean section 37/224 (16.5%), fetal distress 33/224 (14.7%) and

40/224 (18%) were for miscellaneous indications. Results of maternal medical complications are given in Table 1.

**Table 1:** Frequencies for maternal complications

Maternal complications	Frequency	Percentage
<b>Antenatal complications</b>		
Total Preterm delivery	304	70
Spontaneous preterm delivery	272	89.4
Induced preterm delivery	32	10.5
PTROM	120	39.4
<b>Route of delivery</b>		
Vaginal delivery	212	49.1
LSCS	224	51.9
<b>Anaemia</b>	259	60
Mild	103	39.7
Moderate	139	53.6
Severe	17	6.5
Hypertensive disorders of pregnancy	122	28.3
Cholestasis of pregnancy	24	5.5
Hypothyroidism	22	5.1
Antepartum hemorrhage (APH)	20	4.6
Toxaemic abruptio	09	2.06
Nontoxemic abruptio	07	1.5
Placenta previa	04	0.93
Gestational diabetes mellitus (GDM)	08	1.8
<b>Postpartum complications</b>		
Atonic postpartum haemorrhage	44	10.2
Maternal mortality	02	0.46

## DISCUSSION

The prevalence of (22/1000 birth) of twin pregnancies in this study was on higher side which is related to the fact that we are at a tertiary level teaching hospital that received referrals for complicated cases and multiple gestations from nearby health care centers. The prevalence of twin gestation in Pakistani population was reported from 10.7/1000 to 19.58/1000 births/birth by Marete et al and Aziz et al respectively.<sup>14-15</sup>

Although it was thought that prevalence of multiple births is more in advanced age group due to more use of fertility treatment and rise in follicle stimulating hormone concentration with age. However, in this study, 86.9% of multiple gestations were found in the age group of 21-30 years. A study by Tomar SP et al also revealed 81% of multiple births in the age group of 20-29 years.<sup>16</sup> The high prevalence of multiple

pregnancies in young age may be due to early age of marriage and childbirth in the study population. Primigravida were 45.7% and multigravida contributed to 54.3% of twin gestations. Chowdhury S et al reported more number of preterm deliveries in multigravida as compared to primigravida patients. While N Rezavand observed no difference in parity among multiple pregnancies.<sup>17</sup>

Only 13.4% of twin conceptions were contributed by assisted reproductive techniques and explained by the profile of patients at our institute where services are mostly availed by the patients belonging to low socio-economic stratum.

Deepthi et al and Nandmer G et al reported preterm delivery in 60% and 67% of twin pregnancies respectively.<sup>18-19</sup> Whereas, Shetty MB et al and Chowdhury et al reported much lower incidence of preterm delivery in 38% and 44% of patients respectively.<sup>20-21</sup>

The inherited risk of preterm delivery in multiple pregnancies is supported by higher incidence of preterm delivery in this study, out of 304 (70%) preterm delivery 272 (89.4% had spontaneous preterm labor and 32 (10.5%) were induced preterm delivery. Preterm rupture of membranes was observed in 120 (39.4%) of patient in this study. Whereas Shetty MB et al and Chaudhary et al reported much lower incidence of preterm rupture of membranes in 6.09% and 3.8% of patients respectively.<sup>20-21</sup>

Multiple pregnancies are amongst the main causes of rising incidence of primi cesarean section due to abnormal presentation of first twin. The rate of cesarean section in present study was 224/431 (51.9%) and supported by Shetty MB et al, Chowdhury et al and Deepthi et al who have reported cesarean section in 68%, 49% and 45% of twin pregnancies respectively.<sup>18,20-21</sup> A study by Assuncao et al has reported cesarean section in 84.8% of patients that is explained by higher incidence of (42.8%) iatrogenic preterm delivery in that study.<sup>22</sup>

In spite of many efforts to prevent anemia under various programmes, it is still prevalent in adolescent and pregnant women. This study also revealed anemia as most common medical complications (60%) in contrast to other studies where it was reported in 16.6% - 35.8% of multiple pregnancies.<sup>18,21</sup> This high prevalence of anemia in this study may be due to more number of referred patients who had taken inadequate treatment in antenatal period. Second commonest maternal complication in this study was hypertensive disorders of pregnancy with an incidence of 122/431 (28%), Deepthi et al, Sheela SR et al and Chowdhury S et al reported hypertensive disorders of pregnancy in 11.66%, 14.5%, 22.6% of multiple pregnancies respectively.<sup>18,21,23</sup> Ante-partum hemorrhage was noticed in 20 (4.6%) of patients similar to that reported by Chowdhury S et al in 3 (5.7%) of patients whereas Shetty MB et al reported much higher incidence of ante-partum hemorrhage in twin gestations (32.2%).<sup>21-21</sup>

Cholestasis of pregnancy was observed in 24 (5.5%) patient in this study and its rate was lower than reported by Gonzalez MC et al (20.9%).<sup>24</sup> GDM was occurred in 1.8% of patients in this study whereas Chowdhury S et al have reported GDM in 5.7% of patients.<sup>21</sup> Buhling KJ et al reported GDM in 3.4% of patients and did not find any association with twin pregnancy.<sup>10</sup> Atonic postpartum hemorrhage (PPH) was occurred in 44 (10.2%) of patients that was lesser than reported (18.9%) by Chowdhury et al that may be due to prophylactic use of misoprostol in addition to oxytocin after delivery in our institute in all multiple births.<sup>21</sup>

Maternal mortality happened in 2 (0.46%) cases in referred patients, one was due to atonic postpartum hemorrhage who presented with eclampsia and with pulmonary edema and other had severe anemia (3.8gm/dl) with pulmonary edema in shock. The prevalence of maternal death was higher in twin mothers compared to singleton mothers (0.3% vs 0.1%, p, 0.009), in a study by Vogel JP et al.<sup>25</sup>

From the result of this study, it can be emphasized that twin pregnancies are at higher risk of preterm delivery that needs referral to higher center for better neonatal care. There is a need to establish multiple pregnancies clinic in high prevalence areas to detect multiple pregnancy related complications so that early intervention may prevent morbidity and mortality both for the mother and fetus. The positive point of this study is largest study population size as compared to other studies. The major negative aspect of this study is being a retrospective observational study.

## CONCLUSION

In present preterm labour, GDM, PIH and anemia were the most common complications.

Most of the cases found with mild to moderate anemia. In most the cases C-section was performed. PPH was noted in most the cases.

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