

# Study of obstetric and medical complications in twin pregnancy

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## Abstract

**Introduction:** Twins are two offspring produced in same pregnancy. Although rare, development of three fetuses (triplets), four fetuses (quadruplets), five fetuses (quintuplets) or six fetuses (sextuplets) may also occur, though twin pregnancy is the commonest. This pregnancy accounts for a disproportionate share of adverse obstetric and neonatal outcome and is associated with an increased risk of preterm deliveries, perinatal morbidity and mortality and maternal complications<sup>8</sup>. Women with twin gestation are 6 times more likely to be hospitalized for antepartum complications, most frequently preterm labour, preterm premature rupture of membranes and pre-eclampsia. **Aims and objectives:** To study the obstetric and medical complications in twin pregnancy **Materials and Method:** The present study was conducted in the in post graduate Department of Obstetrics and Gynaecology of SMGS hospital, Government Medical Collage Jammu. Data was collected from November 2013 to octomber 2014. All women admitted to the labour room after clinical or ultrasound diagnosis of twin gestation were enrolled in the study. Women with less than 28 weeks of gestation were excluded. Women with preexisting medical disorder e.g. cardiac disorder, renal disorder, vasculopathies etc were also excluded. Thus total 195 mothers with twin pregnancies were enrolled during the study. Informed consent was obtained. Data was collected on a predesigned semi structured proforma on which patient's demographics data, risk factor for twin pregnancy, gestation, haemoglobin, mode of delivery, antepartum, intrapartum and postpartum complication comprising severe anaemia, pregnancy-induced hypertension, pre-eclampsia, eclampisa and antepartum haemorrhage was recorded. The collected data was analyzed using proper statistical method. **Results:** Majority of the mothers were in the age group of 21 to 30 year of age. The mean gestational age at the time of delivery is  $35.43 \pm 1.95$  weeks. The present study comprises of 54.35% of multigravida with mean parity of 1.85. The family history of twin pregnancy was observed in 10.26% of cases. Anemia was present in 83.69% of cases. Hypertensive disorders are present in 47.18% of all cases. 12.82% of cases have premature rupture of membranes. Preterm labour was observed in 41.03% of cases. APH was seen in five 2.56% of patients. Among them abruption was present in three 1.53% patients and placenta previa was seen in two patients 1.02% of cases. The mode of delivery was vaginal in 60% of cases and caesarean in 39.49%. **Conclusion:** Thus in the end we conclude that Anaemia, Hypertensive disorders, PROM and Preterm Labour were he common complication observed in mothers with twin pregnancy.

**Keywords:** twin pregnancy, Anemia Hypertensive disorders, Preterm Labour.

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## INTRODUCTION

Twins are two off spring produced in same pregnancy. Although rare, development of three fetuses (triplets),

four fetuses (quadruplets), five fetuses (quintuplets) or six fetuses (sextuplets) may also occur, though twin pregnancy is the commonest. According to Hillin's rule (1985), the mathematical frequency of multiple birth is twins 1 in 80 pregnancies, triplets in 1 in 80<sup>2</sup>, quadruplets 1 in 80<sup>3</sup> and so on<sup>1</sup>. The twin birth rate in the United States rose 76% from 1980 through 2009, from 18.9 to 33.3 per 1000 births. The Yoruba have the highest rate of twinning in the world, at 45-50 twin sets (or 90-100 twins) per 1000 live births, possibly because of high consumption of a specific type of yam containing a natural phytoestrogen which may stimulate the ovaries to release an egg from each side<sup>2</sup>. In central Africa there are 18-30 twin sets (36-60 twins) per 1000 live births. In

Latin America, south Asia, and Southeast Asia, the lowest rates are found; only 6-9 twin per 1000 live births. North America and Europe have intermediate rates of 9-16 twins per 1000 live births<sup>3</sup>. The incidence of multiple births is on the increase especially in the developed countries mainly as a result of the increasing use of assisted reproductive techniques; treatment for infertility also has considerable influence. Since the early years of in vitro fertilization embryo transfer (IVF-ET), it has become clear that the best pregnancy rates results from transferring more than one embryo<sup>4</sup>, the European society of Human Reproduction and Embryology (ESHRE) report a total multiple delivery rate of 23.1% Europe after ART for 2003<sup>5</sup>. While in US the figures are even higher, in 2004 of the 49,376 infants born after ART. 45% were twins and total multiple birth rate was 50.9%<sup>6</sup>. Other factors associated with twinning include; heredity, family history of twinning especially in a first-degree relative on the maternal side, increasing maternal age and parity, maternal height, weight for height, previous twin deliveries, use of ovulation induction agents, easy conception (usually within 3 months of marriage ) and pregnancy soon after cessation of long-oral contraceptive use. Multiple pregnancy warrants special attention from obstetricians. Recognizing the specialized nature of multiple pregnancy management, the RCOG study group on multiple pregnancies has recommended that just like for diabetes, multiple pregnancies should be managed in a hospital having an expert gynaecologist with multi disciplinary team<sup>7</sup>, it has important medical and social implications. This pregnancy accounts for a disproportionate share of adverse obstetric and neonatal outcome and is associated with an increased risk of preterm deliveries, perinatal morbidity and mortality and maternal complications<sup>8</sup>. Women with twin gestation are 6 times more likely to be hospitalized for antepartum complications, most frequently preterm labour, preterm premature rupture of membranes and pre-eclampsia. The most common and profound implication is preterm delivery (<37 weeks of gestation). Presently the leading cause of hospitalization among pregnant women and second leading cause of infant death<sup>9</sup>.

### AIMS AND OBJECTIVES

To study the obstetric and medical complications in twin pregnancy.

### MATERIALS AND METHOD

The present study was conducted in the in post graduate Department of Obstetrics and Gynaecology of SMGS hospital, Government Medical Collage Jammu. Data was collected from November 2013 to October 2014. All women admitted to the labour room after clinical or ultrasound diagnosis of twin gestation were enrolled in

the study. Women with less than 28 weeks of gestation were excluded. Women with preexisting medical disorder e.g. cardiac disorder, renal disorder, vasculopathies etc were also excluded. Thus total 195 mothers with twin pregnancies were enrolled during the study. Informed consent was obtained. Data was collected on a predesigned semi structured proforma on which patient's demographics data, risk factor for twin pregnancy, gestation, haemoglobin, mode of delivery, antepartum, intrapartum and postpartum complication comprising severe anaemia, pregnancy-induced hypertension, pre-eclampsia, eclampsia and antepartum haemorrhage was recorded. The collected data was analyzed using proper statistical method.

### RESULTS

**Table 1:** Distribution of twin pregnancy according to various ANC factors

| Variable        | Number of cases | Percentage |        |
|-----------------|-----------------|------------|--------|
| Age groups      | ≤20 yrs         | 8          | 4.10%  |
|                 | 21-25 yrs       | 72         | 36.92% |
|                 | 26-30 yrs       | 92         | 47.18% |
|                 | 31-35 yrs       | 20         | 10.26% |
|                 | 36-40 yrs       | 2          | 1.03%  |
|                 | >40 yrs         | 1          | 0.51%  |
| Gestational Age | 29-32 wks       | 30         | 15.38% |
|                 | 33-36 wks       | 113        | 57.94% |
|                 | ≥37 wks         | 52         | 26.66% |
| Parity          | Primigravida    | 89         | 45.64% |
|                 | Multigravida    | 106        | 54.35% |
| Family H/o      | Yes             | 20         | 10.26% |
|                 | No              | 175        | 89.74% |

It was observed that age of mother in the present study was ranging from 19 to 42 years with mean age of 26.31 years. Majority of the mothers were in the age group of 21 to 30 year of age. The mean gestational age at the time of delivery is  $35.43 \pm 1.95$  weeks. The present study comprises of 54.35% of multigravida with mean parity of 1.85. The family history of twin pregnancy was observed in 10.26% of cases.

**Table 2:** Distribution according to various complication observed in mother with twin pregnancy

| Complication           | Number of cases | Percentage |        |
|------------------------|-----------------|------------|--------|
| Anemia                 | Present         | 163        | 83.59% |
|                        | Absent          | 32         | 16.41% |
| Hypertensive disorders | Yes             | 92         | 47.18% |
|                        | No              | 103        | 52.82% |
| PROM                   | Yes             | 25         | 12.82% |
|                        | No              | 170        | 87.18% |
| Preterm Labour         | Yes             | 80         | 41.03% |
|                        | No              | 115        | 58.97% |
| APH                    | Abruption       | 3          | 1.53%  |
|                        | Placenta previa | 2          | 1.02%  |

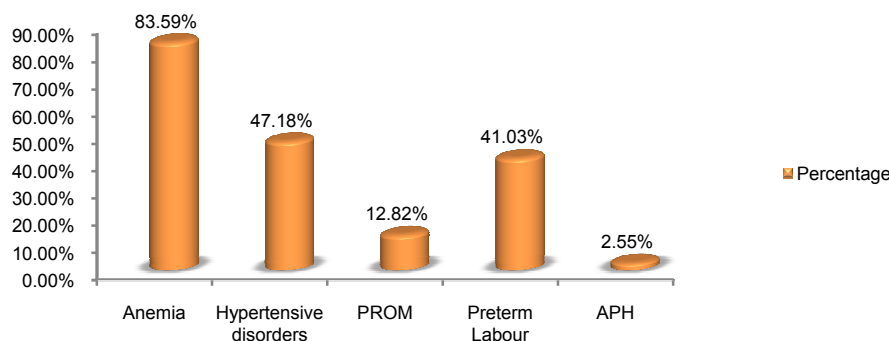


Figure 1: Various complication observed in mother with twin pregnancy

According to ICMR guidelines Hb < 10g% is defined as anemia and it was present in 83.69% of cases in the present study. Mean Hb before delivery was 9.43±0.66. In the present study hypertensive disorders are present in 47.18% of all cases. 12.82% of cases have premature rupture of membranes. Preterm labour was observed in 41.03% of cases. APH was seen in five 2.56% of patients. Among them abruption was present in three 1.53% patients and placenta previa was seen in two patients 1.02% of cases.

Table 3: Distribution according to mode of delivery

| Mode of delivery  | Number of cases | Percentage |
|---|-----------------|------------|
| Vaginal delivery  | 117             | 60.00%     |
| Cesarean section  | 77              | 39.49%     |
| 1 <sup>st</sup> Vaginal delivery and 2 <sup>nd</sup> Cesarean section | 1               | 0.51%      |

The mode of delivery was vaginal in 60% of cases and caesarean in 39.49%. Out of caesarean deliveries 38.96% are elective and 61.03% were emergency.

## DISCUSSION

It was observed that majority (85%) of the mothers in the present study were between the age group of 21 to 30 year. Similar findings were also reported by Sultana M *et al*<sup>10</sup> (60%); Spellacy wn *et al*<sup>11</sup> (55%). In contrary to this higher incidence in the age group of 31-40 years was reported by Malik MS *et al*<sup>12</sup>. It was observed that at the time of delivery 15.38% of the women had an estimated gestation age of less than 32 weeks and 57.94% of the women studied had an estimated gestation age between 32-36 weeks. Overall in this study 73.32% of all twin pregnancies delivered at an estimated gestation age of less than 37 weeks (preterm delivery). The mean gestational age at the time of delivery is 35.43 ± 1.95 weeks. This may explain the fact that twin pregnancy is a high risk gestation with many associated complications.

This was consistent to many other studies and can be explained by difference is physiological changes occurring in the maternal body. Similar observation was reported by Peter BZ *et al*<sup>13</sup> in their study. Probably, the most likely reason for preterm labour could be physiological stimuli to the onset of labour, uterine over distention, placental corticorophin releasing hormone and lung maturity factors, these factors may be stronger in multiple pregnancies due to the increased fetal and placental mass as described by previous studies conducted. However, there factors were not investigated in the present study. Anemia was found in 83.60% of women. Among then 10.25% of them received blood transfusion. Anemia results from increased iron requirement during pregnancy, due to increase in red cell mass and a physiological decrease in hemoglobin to hematocrit levels resulting from large degree of intravascular volume expansion. In developing countries like India, nutritional deficiency anemia is also observed. Moreover majority of cases reported to us for the first time in the hospital, in labour or at term. These cases accounted for 123 patients (63.07%) out of which 19(9.74%) had no antenatal checkup while rest of 104 (53.33%) of patients underwent irregular antenatal checkups or were non compliant patients. Hence, their anemia remained uncorrected. 72 (36.92%) cases were booked cases of this hospital. Further complicating this problem was the hookworm infestation which effects majority of Indian population. Hall MH *et al*<sup>14</sup> found evidence of iron and folic acid deficiency in sternal bone marrow aspirates of twin pregnant patients and therefore low haemoglobin level than singleton pregnancy. Thus during the antenatal period anemia, preterm labour and PIH were the major complicating factors. In the present study population, hypertensive disorders were common in twin pregnancy with prevalence of 47.18% among them 2 patients were having eclampsia. Hence pre-eclampsia and eclampsia was a significant morbidity associated with

multiple pregnancies. The large placenta in multiple pregnancies probably exposes mothers to more paternal antigen and placental secreted hormones which are likely to contribute to pre-eclampsia and eclampsia in multiple pregnancies. APH was seen in five 2.56% of patients. Among them abruption was present in three 1.53% patients and placenta previa was seen in two patients 1.02% of cases. In a study done by Chowdhary S *et al*<sup>15</sup> APH was found in three i.e. 5.7% patients. Preterm labour was observed in 41.03% of cases. Otuodichinma GA *et al*<sup>16</sup> reported that preterm delivery occurred in 39.7% cases. Gulrukh Qazi<sup>17</sup> conducted a study to observe the obstetric and perinatal Outcome of Multiple Pregnancy and observed four leading maternal adverse outcomes were anemia (74.6%), preterm delivery (31%), pregnancy - induced hypertension (30%) and preterm premature rupture of membranes (26.2%). Median gestational age at delivery was 37 weeks. In the preset study 39.49% delivered by caesarean section. Among the caesarean delivery 61.03% were emergency caesarian and 38.96% were planned/elective. These results were consistent with study done by Qazi G<sup>17</sup>, who also observed caesarean section as commonest mode of delivery. This high rate of caesarean was due to injudicious use of uterotonic agents at rural health central and some private sector from where they received their cases, leading to obstructed labour and fetal distress. A study by Mutihir JT *et al*<sup>18</sup> found the rate of caesarean section to be 41% some of factors which he has correlated with the increase in the caesarean section rate include the decline in internal version and breech extraction of a second transverse lie twin in their institution. It is important to have a diagnosis of twin pregnancy in antenatal period or before labour so that optimal safe mode of delivery could be decided. The mode of delivery of twins remains a challenge and a subject of controversy among obstetricians. The best route for the twin delivery is based on the presentation of the fetuses, the case of fetal heart rate monitoring and the maternal and fetal status.

## CONCLUSION

Thus in the end we conclude that Anaemia, Hypertensive disorders, PROM and Preterm Labour were the common complication observed in mothers with twin pregnancy.

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