

# Perinatal Mortality in Twin Pregnancy: A Comparison between Booked and un-booked cases

HUMA AFRIDI<sup>1</sup>, ITAAT ULLAH KHAN AFRIDI<sup>2</sup>, BEENISH RIAZ<sup>3</sup>

## ABSTRACT

**Background:** Undiagnosed twin pregnancy imposes unnecessary risk for the mother and increases perinatal mortality. Twin pregnancy is diagnosed in 75 % of patients before delivery<sup>2</sup> and often presents late, which is regrettable because much can be done for the mother and the offspring if treatment is given earlier.

**Aim:** To determine the frequency of booked and un-booked twin pregnancies and perinatal mortality among them, presenting in a tertiary care hospital.

**Methods:** Descriptive Case Series study was conducted from September 2016 to September 2017 in Department of Gynae/Obs of Fatima Memorial Hospital Lahore Pakistan. Total 150 patients were selected by non-probability Consecutive sampling.

**Results:** Total 150 patients with twin pregnancy were included, 69(46%) belonged to age group 18-30 years. 48(32%) were in age group 31-40 years and 30(20%) belonged to age group 41-45 years. Frequency of booked and un booked patients was 60(40%) and 90(60%) respectively. In booked patients perinatal mortality was in 3(2%) while in 57(38%) there was no perinatal mortality. In Un booked patients perinatal mortality was in 20(22.2%) while in 70(77.7%) there was no perinatal mortality. Main causes of perinatal mortality were meconium aspiration syndrome present in 12(8%) of patients, second leading cause of perinatal mortality was birth asphyxia present in 6(4%) of patients followed by neonatal sepsis in 6(4%) patients.

**Conclusion:** The patient should be provided with sufficient information regarding advantages of regular antenatal visits so that perinatal mortality of twins will be reduced by early diagnosis in antenatal period following proper management.

**Keywords:** Perinatal mortality, twin pregnancy, booked cases

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## INTRODUCTION

Advances in assisted reproductive techniques such as drugs for ovulation induction, in vitro fertilization and a variety of intra-fallopian transfer procedures have resulted in increased number of twin pregnancies<sup>1</sup>.

Twin pregnancy represents high risk pregnancy<sup>2</sup>. It is high risk because there is increasing risk to both mother and fetus during antenatal period as well as during labour<sup>3</sup>. Twin pregnancy contributes about 1- 4% of all pregnancies<sup>4,5</sup> and makes 10% of total perinatal mortality rate<sup>2</sup>.

Twin gestation is associated with higher rates of almost every potential complication of pregnancy. The most serious risk is spontaneous preterm delivery, which plays a major role in the increased perinatal mortality and short-term and long-term morbidity observed in these infants<sup>6</sup>.

The major issues that affect perinatal mortality in

multiple pregnancies include preterm delivery<sup>7</sup>, low birth weight<sup>8</sup>, gestational age, intrauterine growth retardation<sup>4</sup>, obstructed labor, antepartum haemorrhage and birth trauma<sup>7,8,4,9</sup>.

Premature newborns have high risk of acute respiratory distress syndrome, intraventricular hemorrhage, anemia, congenital anomalies, retinopathy, necrotizing enterocolitis, patent ductus arteriosus, prolonged hospital stay<sup>4,10</sup>. The most common cause of neonatal death is prematurity and very low birth weight followed by sepsis and jaundice<sup>3</sup>. Second twin is especially at greater risk of poor perinatal outcome, risk of severe birth asphyxia is three times higher in the second compared to the first twin<sup>8</sup>. Elective cesarean delivery at term may improve perinatal outcome for the second twin<sup>11</sup>.

In about two third of twins the fetuses are non identical or dizygotic and in one third they are identical or monozygotic. Monochorionic, compared to dichorionic twins have a much higher risk of complications<sup>12</sup> like acute transfusion, twin to twin transfusion syndrome and twin reversed arterial perfusion (TRAP) sequence and intrauterine death<sup>4</sup>. Hence, determination of chorionicity is very important<sup>13,6</sup> and follow up of monochorionic

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<sup>1</sup>Assistant Prof. Obs & Gynae Nawaz Sharif Medical College Gujrat  
<sup>2</sup>Associate Prof. & HOD Paediatrics, Department of Paediatrics, Nawaz Sharif Medical College, UOG, Gujrat

<sup>3</sup>Sr Registrar, Obs & Gynae, Shifa International Hosp Islamabad  
Correspondence to Dr Itaat Ullah Khan Afridi E- mail: itaatafridi@yahoo.com Cell: 03214253314, 0331 9624483

pregnancy is very essential regarding antenatal care<sup>14</sup>.

Management of twin pregnancy is effective when the diagnosis has been made early in gestation. Modern ultrasound studies can outline the twin pregnancy, its placentation, the structure of the central membranes, and fetal gender. Ultrasonography also helps to choose suitable management during pregnancy and an optimal mode of delivery<sup>15</sup>.

Undiagnosed twin pregnancy imposes unnecessary risk for the mother and increases perinatal mortality. Twin pregnancy is diagnosed in 75 % of patients before delivery<sup>2</sup> and often presents late, which is regrettable because much can be done for the mother and the offspring if treatment is given earlier. In a study conducted by MN Mahreen and published in 2003, total number of Booked patient 32.3% and unbooked patient 67.7% and perinatal mortality was 15.3% in non booked cases versus 3.2% in booked cases (p-value less than 0.01)<sup>15</sup>.

The rationale of the study is that there is notable dearth of reliable data in Pakistan regarding this topic, the findings of MN Mahreen<sup>15</sup> are quite old while the recent studies by Rizwan N and colleagues<sup>16</sup> and Qazi G<sup>5</sup> regarding perinatal outcome of twin gestation do not cover the frequency of perinatal mortality in unbooked twin cases, which creates the need to determine the frequency of perinatal mortality in booked versus un-booked cases. This study will enable us to educate the subjects with twin gestation that perinatal mortality of twins can be reduced by early diagnosis in antenatal period following proper management.

#### OPERATIONAL DEFINITIONS

**Perinatal mortality:** This includes all neonatal deaths after 28 weeks of gestation till 1<sup>st</sup> week after delivery (all intrauterine deaths after 28 weeks, intra-partum still births and early neonatal deaths).

**Booked cases:** Booked cases are those who have their 1<sup>st</sup> antenatal visit in first trimester and had at least two subsequent antenatal visits to the antenatal care center department of Gynae/Obs Fatima Memorial Hospital Lahore.

**Un-booked cases:** Un-booked cases were those who have not attended antenatal care according to the above mentioned criteria.

#### MATERIAL AND METHODS

Descriptive Case Series study of was done from September 2016 to September 2017 at Department of Gynae/Obs of Fatima Memorial Hospital Lahore. Sample size of 150 cases was calculated by non-probability Consecutive sampling with 95% confidence level, 8% margin of error and taking

expected percentage of booked cases of twin pregnancies i.e., 32.3%. This study was performed in women presenting in a tertiary care hospital with twin gestation (confirmed on ultrasonography) in reproductive age group with any parity and gestational age after 28 weeks were enrolled in the study while patients with fetal anomalies, known cases of: diabetes mellitus, hypertension, respiratory, cardiac, liver, gastrointestinal, neoplastic and who deliver first twin outside hospital and then present in hospital with retained second twin were excluded from the study. Approval from the ethical committee of the hospital obtained along-with informed consent of the study population with the assurance to keep their information confidential. These cases were collected from Department of Obstetrics & Gynaecology, Fatima Memorial Hospital Lahore Pakistan. An informed consent of the patients was obtained to include their data in the study. Patients were followed till first week after delivery for the outcome variable i.e., perinatal mortality in both Groups. All this information was recorded on a pre-designed proforma.

Data was entered and analyzed in SPSS 12. Mean and standard deviation for descriptive statistics were calculated for quantitative data. Frequencies and percentages were calculated for qualitative variable i.e. Booked, un-booked and perinatal mortality. Chi – Square was used to determine significance in perinatal mortality between the groups. P value  $\leq 0.05$  considered significant. The data was stratified for age, and parity to control the effect modifiers.

#### RESULTS

In this study total 150 patients with twin pregnancy were included , regarding age distribution of these patients as shown in table 1 , 69(46%) belonged to age group 18-30 years. 48(32%) were in age group 31-40 years and 30(20%) belonged to age group 41-45 years. Out of 150 patients frequency of booked and un booked patients was 40% (60) and 60% (90) respectively (table 2).

In booked patients perinatal mortality (Table 3) was in 3(2%) while in 57(38%) there was no perinatal mortality.

In Un booked patients perinatal mortality (Table 3) was in 20(22.2%) while in 70(77.7%) there was no perinatal mortality .

Main causes of perinatal mortality were meconium aspiration syndrome present in 12(8%) of patients, second leading cause of perinatal mortality was birth asphyxia present in 6(4%) of patients followed by neonatal sepsis in 6(4%) patients (Table 4).

## RESULTS

Table 1: Age distribution of patients (n=150)

Age in years	n	%age
18-30	69	46
31-40	48	32
41-45	30	20

Table 2: Frequency of booked and Un booked cases in twin pregnancies (n=150)

Booked/Un booked cases	n	%age
Booked	60	40
Un Booked	90	60

Table 3 : Frequency of Perinatal Mortality in booked and Un booked cases in twin pregnancies n = 150

Perinatal Mortality	Booked	Un booked
Yes	3 (2%)	20(22.2 %)
No	57 (38%)	70(77.77 %)

Table 4: Causes of perinatal mortality (n=150)

Causes of perinatal mortality	n	%age
Meconium aspiration	12	8
Birth asphyxia	6	4
Neonatal sepsis	6	4

## DISCUSSION

Twin pregnancy and hence perinatal mortality is more common with advance age<sup>17</sup>. In our study, 69(46%) were between 18-30 years, 48(32%) were between 31-40 years and 30(20%) were between 41-45 years. Similar results were found in 2013 by Talat Parveen et al<sup>18</sup> and Rajlaxmi Mundhra<sup>17</sup>

Frequency of booked and unbooked cases in twin pregnancies were recorded as 60(40%) and 90(60%) respectively, significant number of pregnant mothers were un booked this may be attributed to their lower educational status and lower social class that they do not know the importance of antenatal visits<sup>15</sup>. Similar results were found by Mahreen MN<sup>15</sup> and Naushaba R in 2010<sup>3</sup>. To day consensus exists that early diagnosis not only decreases morbidity and mortality rates but is the key to providing optimal antepartum care and the cornerstone of effective management of labour and delivery<sup>18</sup>.

Regarding perinatal mortality, the perinatal death rate in twins has been reported to be 4-10 times higher than that in singletons and constitutes a significant percentage of perinatal mortality<sup>15</sup>. In our study out of 60 (40%) booked cases, 3(2%) while out of 90(60%) unbooked cases, 20(22.2%) Another study by Bangash N<sup>2</sup> in 2005 and Qazi G<sup>5</sup> in 2011 found similar high rates of perinatal mortality in their studies. Meconium aspiration, birth asphyxia and neonatal sepsis were the major leading causes of perinatal mortality in our study. Similar findings were observed by Rajlaxmi Mundhra<sup>17</sup>.

## CONCLUSION

Twin pregnancy is a high risk pregnancy. Frequency of perinatal mortality is significantly higher among unbooked twin pregnancies than booked twin pregnancies. Diagnosis before delivery is important. The patient should be provided with sufficient information regarding advantages of regular antenatal visits so that perinatal mortality of twins will be reduced by early diagnosis in antenatal period following proper management.

## REFERENCES

1. La Sala GB, Gallinelli A, Nicoli A Pregnancy loss and assisted reproduction : preliminary results after the law 40/2004 in Italy. *Reprod Biomed Online* 2006; 13(1): 65-70.
2. Bangash N. Outcome of twin pregnancy in non-booked cases. *Pak Armed Forces Med J* 2005;55:323-6.
3. Naushaba R, Razia Mustafa Abbasi, Razia Mughal. maternal morbidity and perinatal outcome with twin pregnancy. *J Ayub Med Coll Abbottabad* 2010 ; 22(2) : 105-7.
4. Crowther CA, Dodd JM. Multiple Pregnancy. In: James DK, Steer PJ, Weiner CP, Gonik B(ed) . *High Risk Pregnancy Management options*. 4<sup>rd</sup> ed.london: Elsevier. 2011; 1053-64.
5. Qazi G , Obstetric and perinatal outcome of multiple pregnancy. *JCPSP* 2011; 21 (3) : 142-5.
6. Mazhar SB , Rahim F , Furukh T . Fetomaternal Outcome in Triplet Pregnancy. *J Coll Physicians Surg Pak* 2008;18: 217.
7. AB.MK. Outcome of twin pregnancies conceived after assisted reproductive techniques. *J Hum Reprod Sci* 2008 ; 1 (1) : 25-8.
8. Onyiriuka. Twin delivery: incidence and perinatal outcome in a Nigerian mission hospital. *Bangladesh Journal of Medical Science* 2011 ; 10(1):45 – 51.
9. Nargis D , Aneesa F , Nasreen A . Assessment of pregnancy outcome in primigravida : comparison between booked and non booked patients. *J Ayub Med Coll Abbottabad* 2010; 22 (2) : 23 – 25.
10. Apichart Chittacharoen MD, Duangtip Singhakun MD, Nathpong Israngura Na Ayudhya MD. Pregnancy Outcome of Twin Pregnancy in Ramathi Hospital. *J Med Assoc Thai* 2006; 89 (4):76 – 79.
11. Armson BA, O'Connell C, Persad V Determination of perinatal mortality and serious neonatal morbidity in the second twin. *Obstet Gynecol* 2006; 108(3pt 1) : 556 – 64.
12. Renata Almeida DE Assuncao. Perinatal Outcome of Twin Pregnancies In a Teaching Hospital . *Rev Assoc Med Bras* 2010; 56(4): 447-51.
13. Pons JC, Hoffmann P, Bringer S, Deutsch V, Lisik F, Schall JP. Management of twin pregnancy. *Rev Prat* 2006; 56: 2227
14. Sperling, Kiil C, Larsen LU, Brocks V, Woidemann KR, Qvist I. Detection of chromosomal abnormalities and transfusion syndrome in twins. *Ultrasound Obstet Gynecol* 2007;29: 517.
15. Mahreen MN. Outcome of twin pregnancy in Booked Versus Un-booked cases . *J CPSP* 2003; 13: 498-500.
16. Rizwan N, Abbasi RM, Mughal R. Maternal morbidity and perinatal outcome with twin pregnancy. *J Ayub Med Coll Abbottabad* 2010;22:105-7.
17. Rajlaxmi Mundhra, Ahanthem S. Singh, Manika Agarwal, Rakesh Kumar. Utilization of antenatal care and its influence on fetal-maternal outcome: a tertiary care experience. *Int J Reprod Contracept Obstet Gynecol* 2013 Dec; 2(4): 600-606.
18. Talat Parveen, Nusrat Shaheen, Tasneem Kausar, Frequency of Perinatal Mortality in Women with Twin Gestation. *PJMHS* 2013; 7: 1153-1155.

