

# The Study of Fetomaternal Outcomes in Twin Pregnancy with Single Fetal Demise

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**Abstract:** ***Aim and objective:** To study maternal and fetal outcome in twin pregnancy with single fetal intrauterine demise (SFIUD) **Introduction:** Twin gestation is associated with more complications, amongst which monochorionic twin poses greater threats. Demise of one fetus in utero endangers the life of surviving fetus as well as the mother. Surviving fetus poses risk of neurological deficits and even death, while mother is at risk of coagulopathies, abruption, preterm delivery and DIC. **Materials and method:** The study is prospective observational type conducted between May 2022 to May 2023 at MDM Janana Hopsital, Dr. S. N. Medical College, Jodhpur. The data was collected from admission records, birth entry registers in labor room and operation theatres and patients were followed up till delivery. **Results:** There were 6586 deliveries between may 2022 and may 2023. Out of these, 126 were number of twin deliveries. Four percent of twin deliveries were the ones with SFIUD. Incidence of SFIUD was found more in monochorionic twins. Common complications found were preterm birth, abruption and preeclampsia. **Conclusion:** SFIUD is not rare event found these days. Each case should be individualized. Thorough fetal monitoring with good neonatal facilities should be ensured.*

**Keywords:** Single Fetal Intrauterine Demise (SFIUD), Twin pregnancy, Fetomaternal outcomes

## 1. Introduction

The twin pregnancies are associated with more perinatal complications as compared to singleton pregnancy. Among these, monochorionic twins are exposed to higher degree of complications than that of dichorionic twins. Demise of single fetus in twin gestation is not a rare phenomenon. It accounts for 5% of twin deliveries. It is more commonly found in early pregnancy and is usually not associated with grave danger to mother and surviving twin.<sup>2</sup> This phenomenon occurring in mid and later trimester may cause serious effects on mother and other fetus.<sup>3</sup> The surviving fetus may suffer from FGR, preterm birth, neurological deficits and rarely intrauterine demise. Mother in such cases is at increased risk of coagulopathies, abruption placentae, preeclampsia, gestational diabetes, sepsis and DIC.<sup>4</sup> Maternal complications may occur after 4 - 5 weeks of the demise of fetus, but are uncommon.

Monochorionic placenta predisposes to the higher risk as there are more chances of occurrence of arterio - venous malformations.<sup>5</sup> Unbalanced unidirectional flow AV shunt results in net transfer of blood flow from one twin to another. This leads to hypovolemia in donor fetus while hypervolemia in recipient twin. Donor twin suffers from hypoxia and acidosis while recipient twin has significant risk of cardiovascular dysfunction due to hypervolemia.

Surviving fetus has increased risks of neurological sequelae due to hypoxic ischemic lesions leading to microencephaly, hydranencephaly, porencephaly and multicysticencephalomalacia. The study conducted by Luu and Vohr shows that chances of cerebral palsy in twin is 9.8 % with one twin demise while it is 1.8% with both twin surviving. Other organs that may be affected include renal

system manifesting as renal cortical necrosis or unilateral damage, gastrointestinal system (small bowel atresia, gastroschisis) and limb defects.<sup>6</sup>

### Aim and objectives

To study fetal and maternal outcomes in twin pregnancies with single fetal IUD.

## 2. Materials and Methods

It is a retrospective observational study conducted between may 2021 to april 2023. Total number of deliveries occurred between this period was out of which were twin deliveries. There were 5 deliveries in which single twin IUD was diagnosed. Study was conducted at MDM janana hospital, Dr. S. N. Medical College, Jodhpur. Patients' details were obtained through their admission tickets, USG reports. Coagulation profile was done weekly alongwith Fibrinogen Degradation Products (FDP) and d - dimer. Patient was followed till delivery and neonatal outcomes were studied.

## 3. Observation and Results

### 1) Age wise distribution of the females

Age (in years)	Number of females	Percentage
20 - 25	2	40%
25 - 30	2	40%
30 - 35	1	20%

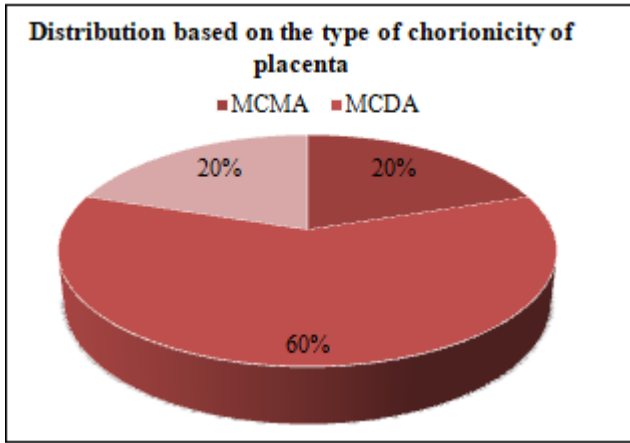
### 2) Distribution based on type of chorionicity of placenta

Type of placenta	Number of patients	Percentage
MCMA	1	20%
MCDA	3	60%
DCDA	1	20%

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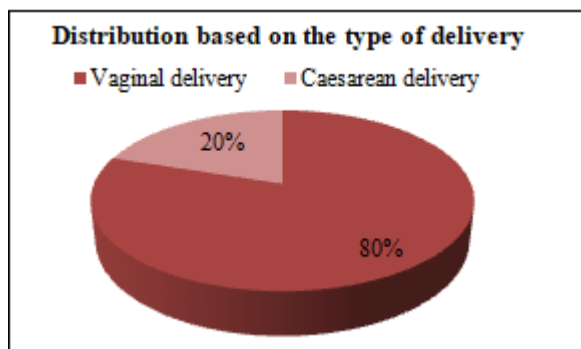


3) Distribution based on gestational age at the time of diagnosis of single fetal demise

Trimester	Gestational age (in weeks)	Number of patients	Percentage
First trimester	-	0	0%
Second trimester	13 to 28	4	80%
Third trimester	29 to 41	1	20%

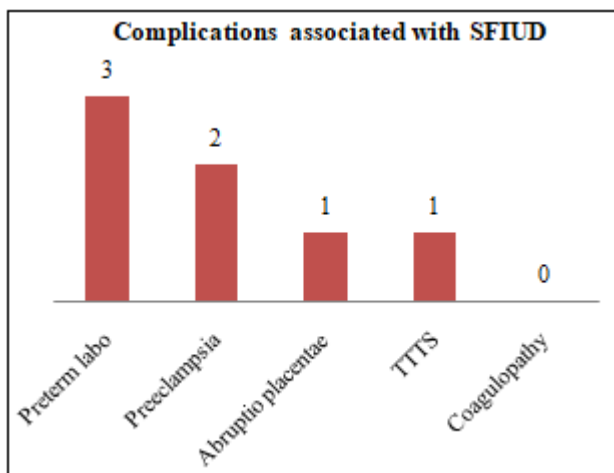
4) Distribution based on the type of delivery

Type of delivery	Number of patients	Percentage
Vaginal	4	80%
Caesarean	1	20%



5) Complications associated with delivery

Complications	Number of patients	Percentage
Preterm labor	3	60%
Preeclampsia	2	40%
Abruption placenta	1	20%
TTTS	1	20%
Coagulopathy	0	0%



6) Distribution on the basis of neonatal outcome

Neonatal outcome (baby weight)	NICU admission	Number of patients	Percentage
1 - 1.5 kg	-	-	-
1.5 - 2 kg	2	2	40%
2 - 2.5 kg	0	2	40%

4. Discussion

Single intrauterine demise in twin pregnancy is usually found in monochorionic twins and the incidence of SIUFD lies between 4 - 5 %. Total number of deliveries in my study institute from may 2021 to may 2023 were 6586 and 126 deliveries of which were twin deliveries (1.9%). In my study, the incidence of SIUFD was found to be 4%. While, in study conducted by Kilby MD et al, incidence was found to be in 5 %. The study conducted by Senem Yaman Tunc et al, with 29 cases, showed the incidence of SIUFD 5.5%.

Monochorionic placenta is associated with abnormal transplacental vascular anastomosis, hence such phenomenon are commonly associated with MC twins. Incidence of TTTS, SIUFD, TRAP, Twin anemia - polycythemia sequence is more common in MC twins. In my study, 80% of the patients were females with monochorionic twins, out of which 60% were monochorionic diamniotic and 20% were monochorionic monoamniotic.

SIUFD occurring in first trimester is usually common and is not dangerous while in mid trimester, it poses significant threat to surviving twin and mother. In my study, most of the patients (80%) were diagnosed in mid trimester, while one patient was diagnosed in third trimester around 32 weeks POG.

Preferred mode of delivery in my study was vaginal unless any obstetric indication was present alongside. Caesarean delivery occurred in one patient due to abruption and fetal distress.

Complications encountered in my study were preterm birth, abruption, preeclampsia and TTTS. Known threat of coagulopathy was not found in my study. Weekly investigations of INR, PT, APTT, FDPs and D - dimer, were found normal. Three out of five patients, underwent preterm delivery with surviving fetus weighing between 1.5 kg to 2 kg. Two out of five babies were admitted to NICU on account of low birth weight and prematurity. Babies were discharged within 1 month with appropriate weight gain.

Management plans should be individualized and outcome of the surviving fetus depends on gestational period at the time of delivery as preterm delivery is quite common in these cases. Antenatal corticosteroids should be administered and ensure delivery of such cases at tertiary care centres with better neonatal facilities. It is recommended that dichorionic twins with SFIUD should not be delivered before 38<sup>th</sup> week if non - stress test, fetal doppler and USG findings are normal. Careful fetal surveillance should be done in twin gestation, starting in first trimester to find out chorionicity. Successive fetal monitoring should be ensured using non -

stress test, biophysical profile, USG growth scans, liquor and Doppler parameters.

## 5. Conclusion

SIUFD is not an unusual phenomenon encountered in twin pregnancy, especially with increased incidence in monochorionic twins than in dichorionic twins. Such cases are dealt with weekly investigations of coagulation profile with fetal Doppler for monitoring and rule out grave dangers like fetal acidosis, death of surviving twin and coagulopathy in mother.<sup>7</sup>

Common complications found in affected mother are preeclampsia, preterm labor, abruption, gestational diabetes, increased NICU stay and rarely intrauterine death of surviving fetus.<sup>8</sup>

## References

- [1] Jain D, Purohit RC. Review of twin pregnancies with single fetal death: management, maternal and fetal outcome. *J ObstetGynaecol India*.2014 Jun; 64 (3): 180 - 3. doi: 10.1007/s13224 - 013 - 0500 - 5. Epub 2014 Feb 27. PMID: 24966501; PMCID: PMC4061330.
- [2] Woo HH, Sin SY, Tang LC. Single fetal death in twin pregnancies: review of the maternal and neonatal outcomes and management. *Hong Kong Med J* 2000; 6 (3): 293–300. PMID: 11025849
- [3] Landy HJ, Weingord AB. Management of multiple gestation complicated by an antepartum fetal demise. *ObstetGynecolSurv*.1989; 44: 171–176. doi: 10.1097/00006254 - 198903000 - 00003.
- [4] Stefanescu BI, Adam AM, Constantin GB, Trus C. Single Fetal Demise in Twin Pregnancy - A Great Concern but Still a Favorable Outcome. *Diseases*.2021 Apr 29; 9 (2): 33. doi: 10.3390/diseases9020033. PMID: 33946946; PMCID: PMC8161807.
- [5] Hillman SC, Morris RK, Kilby MD. Co twin prognosis after single fetal death: a systematic review and meta analysis. *ObstetGynecol* 2011; 118 (4): 928–940. DOI: 10.1097/AOG.0b013e31822f129d
- [6] Luu TM, Vohr B. Twinning on the brain: the effect on neurodevelopmental outcomes. *Am J Med Genet* 2009; 151C (2): 142–147. DOI: 10.1002/ajmg. c.30208
- [7] Chauhan SP, Scardo JA, Hayes E, et al. Twins: prevalence, problems, and preterm births. *Am J ObstetGynecol* 2010; 203 (4): 305–315. DOI: 10.1016/j.ajog.2010.04.031

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