

## To Study Epidemiology, Clinical Profile, Role Of Antenatal Care, Influence of Chorionicity, Complications & Management In Cases of Twin Pregnancy In RMC, JLN Medical College, Ajmer (Raj)"

Dr. Vandana<sup>1</sup>, Dr. Deepali Jain<sup>2</sup>, Dr. Chandra kanta<sup>3</sup>

Department of obstetrics and Gynaecology, JLN medical college, Ajmer.

<sup>1</sup>Resident doctor, <sup>2</sup> Senior professor, <sup>3</sup> Assistant professor

Corresponding Author: Dr. Chandra kanta

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**Abstract: Objective:** To study the epidemiology, role of regular antenatal care influence of chorionicity maternal and perinatal outcome, maternal and fetal complication and plan of management in cases of twin pregnancy in our institute during study period of Jan. 2017 to Sep. 2018

**Method: The** study was conducted in the Department of Obstetrics and Gynecology of JLN Medical College & Associated group of hospitals, Ajmer (Raj.). 100 cases of twin pregnancy that register in Zanana Hospital during period of Jan 2017 to Sep 2018 were studied and data regarding fetomaternal outcome and the mode of delivery were collected and analyzed.

**Result:** In our study we observed that incidence of twin pregnancy was 1:45.4, with the mean age of the patients ranging between 21-30years. Antenatal diagnosis was made in 92% cases and in 8% of cases diagnosed after delivery of first baby. Out of 100 cases 48% were primigravida and 27% were second gravida, 41% were below the gestation age of 37 weeks while 59% above it. In 51% cases presentation of both twin was vertex-vertex and in remaining 24% vertex-breech being the commonest presentation. The incidence of operative delivery was 46% and vaginal delivery 54%. The incidence of monozygotic twins was 6% and of dizygotic twins 93%. In present study total perinatal mortality morbidity was 26% and higher for second twin (29%) as compared to first twin (23%) and more in monozygotic twin (45%) than in dizygotic twins (24%), more in males (22.12%) than in females (18%). The incidence of anemia was 19%, PIH 15% accidental hemorrhage 6% and cord prolapsed 3% respectively, preterm was 42% PROM 14%. Post partum hemorrhage occurred in 10% of cases and anemia in post partum stage was 12%.

**Conclusion:** As we know twin pregnancy is associated with a high risk in mother as well as foetus, this warrants need of early antenatal diagnosis and vigilant care during antenatal as well as intrapartum and postpartum period to reduce complications.

**Keywords:** Twin pregnancy, perinatal mortality, perinatal morbidity

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### I. Introduction

Twin pregnancies have occupied a very prominent place in human mythology since ancient times. Hindu mythology enshrined the twins Luv & Kush, sons of Lord Rama; ancient Rome was said to have been founded by the twins Ramus & Romulus. Natural higher order multiple conceptions are uncommon. The reported incidence ranges from 0.01% to 0.07% of all pregnancies.<sup>1</sup> Multiple births are much more common today than they were in the past. Throughout the world, the prevalence of twin births varies from approximately 2-20 /1000 births. Multiple pregnancy warrants a special attention because they make a considerable contribution to the maternal / perinatal morbidity/mortality well in excess of that due to multiplication of singleton risk by fetal number.<sup>2</sup> Overall complications occur in approximately 83% of twin pregnancies as compared to 25% in singleton pregnancies. Hence twin pregnancies should be considered as high risk pregnancies. Vigilant obstetric care not only decreases the maternal morbidity and mortality but also improves the fetal outcome. The astounding increase in multiple gestation rates can be explained by the social shift in women's attitude regarding child bearing which has resulted in more and more women choosing to postpone child bearing in favor of work and career commitments. This delayed childbearing has resulted in an increased maternal age at conception, which in turn has led to infertility treatment such as ovulation induction, in vitro fertilization and intra cytoplasmic sperm injection as one of the predisposing factors of twin gestation, since fertility decreases with age<sup>3</sup>. The frequent association of twin pregnancy with abortions, maternal anemia, pregnancy induced hypertension, placental accidents, hyperemesis gravidarum, hydramnions, premature labor

and prolonged labor, fetal malformations, abnormal fetal presentations, cord prolapse, intrapartum deaths and post partum hemorrhage has lead the obstetricians to consider it as a complicated pregnancy (Fernando 2015)<sup>4</sup>.

1. **Aims and objectives** :-To study the epidemiology, role of regular antenatal care influence of chorionicity maternal and perinatal outcome, maternal and fetal complication and plan of management in cases of twin pregnancy in our institute during study period of Jan. 2017 to Sep. 2018.
2. **Methods** :-We conducted study of 100 cases of twin pregnancies admitted at our institute from July, 2017 to sep 2018 including all emergency as well as registered cases. This study was conducted as a part of post-graduate dissertation at JLN Medical College, Ajmer, India. Patients included in this study were from various socio-economic classes and they were having a different level of education. In all cases a detailed history was taken, all routine and specific investigations were done. Hospitalization was done whenever it was required to prevent and to treat complications. All these patients were delivered in our institute under close observation. All stages of labour were carefully managed in the presence of team of obstetrician. All babies were examined by the neonatologist and NICU care was given as and when it was required.

## II. Result

In this prospective study we observed 100 cases of twin pregnancies. We had an incidence of twin pregnancy to the extent of 2.2 %. Out of the 100 twin pregnancies 47 patients were booked in our hospital, 53 patients were unbooked and had got admitted with some complications or for safe confinement. We noticed that the incidence of twin pregnancy was highest in the age group of 21-25 years followed by 26-30 years which were 40% and 35% respectively with least incidence above 35 years around 1%. With regards to the parity, we came across the highest incidence in primi gravida, the least was being in multi para with parity more than 3. In the present study we noticed that maximum twin pregnancies were a result of spontaneous conception which was 89% followed by conceptions from ovulation induction. In our study most of the patients (59%) delivered after 37 weeks of gestation, 3 women delivered at or before 28 weeks of gestation. 38 % delivered between 28-37 wks. We came across vertex-vertex as the most common presentation (51%) followed by vertex- breech presentation (24%), least was either vertex – transverse or breech – transverse. Majority of the patients delivered vaginally (54%), followed by LSCS (Lower Segment Caesarean Section) (46%). However we had one case in which the first twin was delivered vaginally and second twin had to be delivered by LSCS (Lower Segment Caesarean Section), due to failure of internal podalic version for second twin which was in transverse lie. In majority of the cases indication for the LSCS was unfavourable presentation in 14% followed by NPOL (10%). As for the maternal complications in twin pregnancies, we encountered preterm labour either spontaneous or induced/threatened preterm labour in 42 women, pre eclampsia among 15 women, eclampsia 3 patient. Severe anaemia was noticed in 19 women, which was treated by blood transfusion, 10% had hyperemesis, 1 patient had hypothyroidism, APH in 6 cases, cord prolapse in 3 cases and pressure symptoms due to overdistended abdomen 2 cases. The study revealed that the twins born were mostly low birth weight babies (124 babies) to the extent of 64% with perinatal mortality and morbidity 23% and 27% for first and second twin respectively. We had 8% (16) extremely low birth weight babies with 100 % mortality. NICU admission was mostly due to low birth weight, respiratory distress.

## III. Discussion

There were 10215 deliveries in our hospital during study period from Jan 2017 to Sep 2018 out of which 225 were cases of twin pregnancy, giving incidence of 2.2 % similar to other studies 3.4% in Renata et al (2010)<sup>5</sup>, 2.3% in Indra et al (2013)<sup>6</sup>, 2% in Deepthi et al (2015)<sup>7</sup>. In our study maximum no of cases were urban 62% (Divya Gupta et al<sup>8</sup> 58.67% (2017) and between 21-30 yr (similar to Amiben et al<sup>9</sup>) age i.e child bearing age which is probably due to isolated rise in serum FSH and fall of incidence after 35 yr, this is due to the fact that urban population were seeking medical aid in the form of ovulation induction drug, IUI and IVF more than the rural population. In our study 89% [Pyrbot 75% and 25% ART (2017)<sup>10</sup> et al] conceived spontaneously and 5 % with IVF and 6% cases had history of ovulation induction drugs. In this study 48% cases were primigravida and 27% were second gravida and only 2% cases were reported in fifth gravida correlating with Amiben<sup>11</sup> observed same incidence among both primigravida and multigravida.

We observed that 41% cases were below 37 weeks of period of gestation while 59 % above it [Amiben et al<sup>9</sup> 46%]. In our study careful antenatal examination and confirmation by USG made possible high rate of antenatal diagnosis (92%). The family history (maternal) of twins was positive in 7% cases of dizygotic twin and no cases of monozygotic twins, shows heredity is playing more important role in genesis of dizygotic twins [Jacob et al 23% (1973)<sup>11</sup> and Mitra et al 68%<sup>12</sup>]. In our study out of 100 cases 38% cases who were allowed to go in spontaneous labor delivered vaginally and 26 cases were induced for various reasons like PROM, IUD, out of which 16% delivered vaginally and 10% cases underwent Caesarean section due to NPOL. 36% cases were delivered by Caesarean section due to other causes like malpresentation 14% [Pyrbot and Jupirika

etal(2017)<sup>10</sup>14.58%]APH,APE,previousCs with twin pregnancy[Kurzel and colleagues 35%, Martin and park et al (1999 ) 60% , indicates increasing trend towards Cs section as safer route of delivery for twins which correlates with our study with total Cs incidence of 46%.In 51% cases both fetus were in cephalic- cephalic presentation which is most common, out of these in 35% cases both twins delivered by vaginally and 16% by Cs. Only one case of Breech- Transverse presentation was observed, and one case of both baby in transverse presentation was observed and in both of these cases Cs was done for both twin [Divon and colleagues (1993)<sup>13</sup>most common presentation at admission for delivery as Cephalic-cephalic 42%].Preterm labor pain [Deepthi et al60%(2015)<sup>7</sup>],Anemia [Deepthi et al(2015) <sup>7</sup>16.6%]and PIH being most common in twin pregnancy, in this study we observed them in 45%, 19% and 15% cases respectively. Other noted complication were Hyperemesis in 10% cases, and pressure symptoms (like difficulty in breathing, urinary frequency, pedal edema) in 2% cases because of overdistended abdomen and malpresentation in 14% cases, 6% cases APH[Mitra et al2.6%]<sup>12</sup> and 3%[Jacob (1973) 5% ]<sup>11</sup>cases with cord prolapse. We had one case in which one fetus was diagnosed IUD at 28 weeks and other one was alive , that patient was managed conservatively with regular weekly antenatal visit along with evaluation of coagulation profile. Patient was asymptomatic till 34 weeks than delivered by spontaneous vaginally due to premature labor pain.In our study anemia was observed as postpartum maternal complication in 12% cases and PPH in 10 % [Mitra (1980)<sup>12</sup>10%, Amiben (2015)<sup>9</sup> 3%]cases. No cases of other complications and maternal mortality [Jacob (1973)<sup>11</sup>9.6%]were observed in postpartum period indicating good postpartum care.

In this study we observed that 3% cases delivered before 28 weeks as they were IUD and induced. 9% cases were between 28- 32 weeks POG out of which 3% were IUD and 6% were admitted to NICU because of low APGAR. Out of total 29% fetuses who delivered between 32-36 weeks POG 20.5% (41) fetuses had good condition at birth, 7.5% fetuses admitted to NICU , and 1% expired just after birth. The fetuses who delivered after 36weeks POG had good perinatal outcome 53.5 % , with 4% admitted to NICU because of low APGAR and IUGR and 1% were IUD. Amiben (2015)<sup>9</sup> observed perinatal mortality of 11% and perinatal morbidity which required admission in neonatal unit was 26.5 % . Thus it shows that as gestational age advances perinatal outcome improves.

In our study we found 93 cases of DADC/DZ twins[Mitra (1980)<sup>12</sup>64% DZ and MZ 36%],70% had good fetal outcome and 5% were IUD, in 1% case fetus expired just after birth and 16% required NICU admission . Chorionicity was diagnosed sonographically in 92% cases antenatally and chorionicity with zygosity confirmed on the bases of blood group , sex of both twins and examination of placenta after delivery. While we reported only 7% cases of monozygotic twins with 3cases of DADC, 2 cases DAMC, 2case of MAMC twin. DADC had better outcome as compared to other monozygotic twin. Thus dichorionic twins had perinatal morbidity and mortality 24% and in monochorionic 45%. Roshni Radhakrishnan reported perinatal mortality rate for monochorionic pregnancy 18% compared to 6% for dichorionic pregnancy.The overall perinatal mortality and morbidity was higher (23%) for first twin than the second twin (27%) in our study. Potter also observed higher mortality rate for second twin (11.8%) than first born (9.3%). We observed that 63% first twin weigh between 1.5-2.5kg (LBW), 15% were very low birth weight and only 14% were above 2.5kg wt. Perinatal mortality and morbidity is 100% in ELBW, 80% in VLBW, 4.2%in LBW and no morality in weight >2.5 kg. So the overall perinatal mortality and morbidity in first twin babies wt< 2.5kg was 23%. In respect to second twin we observed that 63% babies weigh between 1.5-2.5kg (LBW), 16% were very low birth weight and only 13% were above 2.5kg wt. Perinatal mortality and morbidity was 87.5% in ELBW, 50% in VLBW, 11%in LBW and 8% morality in weight >2.5 kg. So we found overall perinatal mortality and morbidity 23% in second twin . Jupirika et al (2017)<sup>10</sup> observed mean birth weight of the first twin 1.96±0.54 kg. The mean birth weight of the second twin was 1.89±0.56 kg. Of the total babies 3 (3.13%) were extremely low birth weight, 24 (25%) were very low birth weight, 49 (51.04%) were low birth weight and 20 (20.83%) had normal weight. Perinatal mortality and morbidity in booked cases was 11% as compared to booked cases which was 33% ,indicating importance of antenatal care in favor of perinatal outcome. According to Jacob et al (1973)<sup>11</sup> and Joshep (1964) in unbooked cases PNM was 38% and 39.9% in contrast to 31.4 % and 18.7% respectively in booked cases.

#### **IV. Conclusion**

As we know twin pregnancy is associated with a high risk in mother as well as foetus,this warrants need of early antenatal diagnosis and vigilant care during antenatal as well as intrapartum and postpartum period , so that pregnancy become uneventful and if any complications develop they could be managed with effective intervention in favour of good maternal and fetal outcome. Therefore it is also important to counsel the patient to attend routine antenatal check-ups and regarding mode of delivery , short term and long-term effectsfor early diagnosis and management of complications.

**Table – 1:Incidence of Twin Pregnancy**

Total No. of Deliveries	No. of Twins
10215	225
Ratio	1 : 45.4

**Table – 2:Distribution of cases according to Age Group, gravidity and period of gestation on admission**

Age Group	No. of Cases
15 – 20	9
21 – 25	40
26 – 30	35
31 – 35	15
35 – 40	1
<b>Gravidity</b> G1	48
G2	27
G3	15
G4	8
G5	2
<b>POG</b> < 28 weeks	3
28 - < 32 weeks	9
32 - < 37 weeks	29
≥ 37 weeks	59
Grand Total	100

**Table no.3:Outcome of Twin Pregnancy**

Course of labor	Outcome	Total no of cases
Spontaneous	ND	38
Induced (26)	CS	10
	ND	16
CS/due to other indication		36

**Table no. 4:Pregnancy outcome in terms of mode of delivery with relation of presentation of both fetus**

Presentation of both twins	Total	A		B	
		Vaginal	Cs	Vaginal	Cs
Twin A - Twin B					
Vertex-vertex	51	35	16	35	16
Vertex-Breech	24	13	11	13	11
Vertex- Transverse	6	1	5		6
Breech- Vertex	6	1	5	1	5
Breech-Breech	11	4	7	4	7
Breech- Transverse	1		1		1
Transverse -Vertex	0				
Transverse- Breech	0				
Transverse- Transverse	1		1		1

**Table – 5:Frequently associated Antepartum, intrapartum and postpartumComplications**

Prematurity Need of Corticosteroid	42
Anemia	19
PIH	15
Hyperemesis	10
APE	3
Pressure symptoms	2
Need of CxEncerclage	1
APH	4
IUD with one fetus	1
Hypothyroidism	1
Preterm Lab Pain	42
PROM	17
Malpresentation	14
APH	6
Cord Prolapse	3
Prolonged Labor	0
Anemia	12
Mild PPH	10

**Table no.6:** Indication of LSCs

Malpresentation	14
NPOL	10
Previous CS	5
Imminent eclampsia with poor Bishop score	4
Cord Prolapse	3
APH	3
Eclampsia	2
Fetal Distress	2
Mono amniotic Twins	2
IUGR with diastolic cut off	1
Meconium stained liquor	0
Major Placentae previa	0

**Table no.7:** Outcome of Fetus

Outcome of fetus	Count of outcome of fetus (A)	Count of outcome of fetus (B)
Good	77	72
Poor (NICU)	15	20
IUD	7	7
Expired	1	1
Grand Total	100	100

**Table no. 8:** Perinatal Outcome in relation with Chorionicity and Zygosity

Zygosity	expired	Good	IUD	poor	Grand Total
DADC/DZ	2	140	10	34	186
DADC/MZ		5		1	6
DAMC/ MZ		3	2	1	6
MAMC/MZ			2		2
Grand Total	2	148	14	36	200

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