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Feto-maternal Outcome in Multiple Pregnancy : A Hospital based Study

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Abstract

Introduction: Multiple pregnancy is a challenging problem to the obstetricians as it carries a high feto-maternal mortality and morbidity.

Aims : To analyze how various factors adversely affect feto-maternal outcome in multifetal gestations and to outline the correct measure to minimize the hazards.

Methods : In this prospective case control study 141 multiple pregnancies either admitted through antenatal clinic or as emergency, for a period of one year were included and feto-maternal outcome was compared with similar number of singleton pregnancy (control).

Results: Out of 141mothers, 66.91% were in the age group of 20-29years and 60.29% of them were para one or more and belonged to low socioeconomic status. 55.09% delivered between34-36 week and 21% at term. Three triplets were delivered within 34 to 36 week. Anemia (56.12%) was the leading complication in both groups followed by Preterm labour(52.48%). 131 babies delivered spontaneously as vertex position. The perinatal mortality was higher in breech babies (22cases).Total 141 mothers delivered 285 babies including 5 stillborn babies. Neonatal jaundice, H.M.D and birth asphyxia were the leading complications observed. Hence neonatal mortality rate was 18.94%. H.M.D constituted the major share.

Conclusions: A careful medical and social assistance, preventive hospitalization, early recognition of the risk, constant monitoring for the optimal timing of birth, and lastly, qualified medical assistance during labor with other medical personnel represent winning strategies to solve the problems arising during multiple pregnancies.

Key words: multiple pregnancy, fetomaternal outcome, maternal complications,

Introduction:

Literatures and vital statistics from the different parts of the world revealed that multiple pregnancy is a challenging problem to the obstetricians as it carries a high fetomaternal mortality and morbidity in comparison to singleton pregnancy .With the advancement of assisted reproductive technique and wide spread use of ovulation inducing drug the incidence of multiple pregnancy is on the rise. In order to attain the best fetomaternal outcome early diagnosis and frequent antenatal checkup are critically important. So the aim of the present study was to analyze how the various factors are adversely affecting maternal and fetal outcome and to formulate the correct step to minimize the hazards in a rural set up.

Methods:

In this prospective case control study, 141 mothers with multiple pregnancy either admitted through antenatal clinic or as emergency basis were included between the period of March 2008 and April 2009. A similar number of singleton pregnancies with matched demographic proficiencies were included as control. Detailed history of the mothers including age, parity, socioeconomic status, family was documented. Also the data regarding physical examination, Obstetrical examination, antenatal complications, and mode of delivery, post partum complications and neonatal outcome in early neonatal periods were recorded. The relevant investigations include complete haemogram, blood group Rh tying, blood sugar, serology for syphilis viral hepatitis, HIV, urine routine test, and USG .After obtaining all the data we analyzed and studied accordingly.

Results:

We observed, in the study group 66.91% of mothers were in the age group of 20-29years with mean +_ SD of 23.7+5.3 years .The youngest one was 17 years of old (Table-1). Out of 141mothers majority 60.29%) of the women were para one or more and belonged to low socioeconomic status (Table-2). Table -3 depicted the period of gestation at which these women admitted. Majority (55.09%) of delivery occurred between 34-36 weeks with mean +_ SD of 32.5 +_4.5 weeks. Only 21% of mothers gave birth at term. Three triplets were delivered within 34 to 36 weeks. None of the pregnancy was continued beyond 40 weeks. Majority of the cases had one or more antenatal complications of which anemia was the leading problem in both the groups followed by preterm labor observed in 52.48 % of cases. Unfortunately there was one maternal death in our series due to severe anemia with ante partum eclampsia. We also observed that 132 babies were delivered spontaneously in vertex position (Table-5). Moreover perinatal mortality was high in those babies who were delivered as breech (22/77). Total 141 mothers delivered 285 babies including five stillborn. Hence total 280 live babies were born. Neonatal jaundice, birth asphyxia were the leading complications observed. Moreover 38 babies were delivered before 30 weeks and unfortunately 30 babies expired. Hence neonatal mortality rate was 18.94%. Hyaline membrane disease and birth asphyxia constituted the major share.

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Table 1 : Distribution of cases in relation to age of the mothers

Age in years	study group (n=141)		control group (n=141)	
	no of cases	%	no of cases	%
<19	7	4.96	8	5.67
20-24	48	30.04	50	35.46
25-29	52	36.87	48	34.09
30-34	22	15.50	24	17.21
>35	12	8.51	11	7.80

Table 2 : Distribution of cases in relation to parity

No of parity	study group (n=141)		control group (n=141)	
	no of cases	%	no of cases	%
0	56	39.71	60	41.55
1	28	19.85	25	17.73
2	21	14.89	23	16.62
3	25	17.73	21	14.89
4 or above	11	7.80	12	8.52

Table 3 : Distribution of cases in relation to gestational age at which delivery occurs

Period of gestation (In weeks)	study group (n=141)		control group (n=141)	
	no of cases	%	no of cases	%
>12	0	0	0	0
12-24	2	1.41	0	0
25-27	2	1.41	1	0.70
28-30	17	12.05	4	2.83
31-33	15	10.63	7	4.97
34-36	76	54.00	21	15. 00
37and above	29	20.50	108	76.50

Table 4 : Antenatal complications

Antenatal complication	study group (n=141)		control group (n=141)	
	no of cases	%	no of cases	%
Hyper emesis	6	4.2	-	-
Anemia	80	56.12	62	43.39
Preterm labor	74	52.48	12	9.01
PIH	36	25.53	13	9.21
Hydramnios	15	10.63	2	1.8
Eclampsia	7	5.67	13	9.2
APH	9	6.38	3	2.12
Placenta praevia	5	10.63	-	-
Abruptio	4	2.83	-	-
PROM	18	12.76	14	9.92
PPH	12	8.3	6	4.2
Retained placenta	3	2.1	-	-
Puerperal infection	2	1.7	-	-

Table 5 : Perinatal mortality in relation to mode of delivery (Study group, n= 285)

Mode of delivery	1st baby		2nd baby		3rd baby		Total birth	
	no of cases	%	no of cases	%	no of cases	%	No of cases	PNM
Sponta-neous Vx	77	54.60	54	38.29	1	33.33	132	16
Low forceps	18	12.80	26	18.43	1	33.33	45	12
Assisted Breech	32	22.70	44	31.20	1	33.33	77	22
LSCS	14	9.90	16	11.34	0	-	30	4
IPV & breech Extraction	0	-	1	.70	0	-	1	0

Table 6 : Neonatal complications

Complications	study group No of cases	control group
Neonatal Jaundice	163	33
HMD	23	8
Birth asphyxia	17	7
Infection	5	2
Birth trauma	2	1
Congenital Malformations	4	-
Twin to twin transfusion	4	1
Still born	5	1
Neonatal death	49	6

Discussion:

Multifetal gestations have been associated with increase incidence of adverse pregnancy out come. Maternal complications in multiple pregnancy are notably increased in last two decades[1]. We observed majority of the women in our study were multigravida or primipara. Azubuike[2] reported how the incidence increased in high parity. Miltiparity associated with 20% increase in the risk of multiple gestation compared with nulliparous women[3]. Moreover different literatures showed its higher incidence in primigravida because it has been fueled largely by infertility therapy[1,4,5] and also the maternal complications are more in nulliparous than multiiparous women[1]. One study[4] documented that older mother have higher rates of pleural births, 2 year increase median maternal age accounted for approximately 20-30% of the observed increase multiple pregnancy. Multiple gestations were associated with two fold increase in risk of maternal death compared to singleton gestation[3,5]. However, overall rates of adverse maternal outcome in this data set were similar to those reported in other studies, which would support to the accuracy of diagnosis. More than 93% of women in our study had one or more obstetric complications. Anemia was the leading complication seen in both groups. This is the reflection of general status of rural India[6]. The anemia was more of microcytic hypochromic type due to iron deficiency and more so as demand increase in pregnancy[3]. Preterm delivery constituted 52.4% of followed by PIH and PROM.

Other complications included polyhydramnios, eclampsia, placenta praevia, aburptio placentae and postpartum hemorrhage. Many studies have also reported a higher incidence of preterm delivery ,PIH and premature rupture of membranes[1,7]. Several reasons have been offered to explain those associations. The most probable etiology of premature labour is uterine distension although insufficiency of uterine blood flow has also been implicated[5]. Moreover Coonard et al[8] observed that the over all four fold increased risk of preeclampsia in higher order of pregnancy. With the traditional model the increase incidence of preeclampsia has been attributed to hyperplacentosis which exposes the mother to more paternal antigen[8]. Also hyper dynamic hemodynamic in twins lends support of increase risk of preeclampsia[8]. We found 85% of the women had vaginal delivery. Hogle et al[9] performed an extensive literature review and concluded that planned cesarean delivery does not improve neonatal outcome. It may decrease the risk of low 5 minute Apgar score, particularly if twin A is breech[9]. The ACOG currently recommends caesarean section when twin A is breech .Average gestation at delivery was 32.5 +_4.5weeks in the study group. Results of one univariate analysis for adverse maternal outcome[3] showed the mean gestational age at delivery was significantly lower for multiples than singleton. However few studies have explored the association between multiple gestation and maternal mortality but one database meta-analysis showed only parous women carrying multiples were at greater risk of death than singletons[3]. Twin gestations comprise approximately 1% of all pregnancy but account for nearly 10% of perinatal mortality. This high perinatal mortality of twins has been repeatedly stressed over the years. The neonatal outcome for preterm twin who are markedly discordant may not be compatible that of singleton because whatever caused the discordance may have long lasting effect. It has been seen that more than one complication appeared simultaneously in one baby. Neonatal complications especially Hyaline membrane disease and birth asphyxia were the sole distressing complications as well as the common cause of early neonatal death seen in our series. Similar results observed by Yuel et al[5]. All the complications had seen in premature babies. Although the increasing incidence of twin pregnancy is due to induction of ovulation but in rural area the reason is naturally occurring conception. We feel that more careful medical and social assistance, preventive hospitalization, early recognition of the risks, constant monitoring for the optimal timing of birth, and lastly, qualified medical assistance during labor (expert gynaecologist, trained obstetric staff) with other medical personnel (anesthetist, neonatal specialist) represent winning strategies to solve the problems arising during multiple pregnancies.

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