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Original Research Article

Study of maternal outcome in multiple gestation

Garima Girish Arora^{1*}, Gourav Rajendrasingh Bagga², Girish C. Arora³

¹Department of Obstetrics and Gynecology, ²Department of Radiology, Shri Vasant Naik Government Medical College and Hospital, Yavatmal, Maharashtra, India

³Paediatrics Consultant, ESI hospital, India

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***Correspondence:**

Dr. Garima Girish Arora,

E-mail: dreamgarima24@gmail.com

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ABSTRACT

Background: Development of more than one fetus inside the uterus is called multifetal gestation or multiple pregnancy. It's a great challenge to the concerned obstetricians, due to late diagnosis and related complications. Ignorance on the part of patients themselves puts this group in great peril. The increase in multiple births increases the rate of maternal morbidity and mortality. Aims and objectives of the study were to study maternal outcome in patients with multiple gestation.

Methods: A prospective observational study carried out during the period of 1 year. A total of 200 patients with antenatal clinical and ultrasound confirmed diagnosis of multiple gestation were enrolled for the study. After taking proper consent for the study, proper history, clinical and obstetrical examinations were conducted and findings noted. Mothers were followed till discharge from the hospital.

Results: Most of the patients (49.5%) were in 21-25 years age group. 65% of patients were multigravida. Undue enlargement of abdomen was the most common physical finding (62%). 79% patients had normal vaginal delivery. Fetal Malpresentation was the most common indication for caesarian section. A hypertensive disorder was the most common complication during pregnancy (23.5%) and pre-term labour was the most common intra-partum complication (38%). Incidence of maternal mortality was 1.5%.

Conclusions: Multiple gestation is a mixed blessing and if successful, allows a couple to rapidly expand their family with a minimum number of pregnancies but it's a great challenge to the concerned obstetricians. Complications due to multiple gestation are associated with adverse maternal outcome.

Keywords: Multifetal gestation, Multiple pregnancy, Maternal outcome

INTRODUCTION

Procreation, the endless quality of reproduction and its regulation bestowed to all living cells by nature, irrespective of species or kind is miraculous. Multiple gestation is a mixed blessing and if successful, allows a couple to rapidly expand their family with a minimum number of pregnancies but it's a great challenge to the concerned obstetricians. The incidence of twins was found to occur is 1 in 80 pregnancies, triplets 1 in 6400

(1:80).¹ Nowadays it is becoming a problem of increasing dimensions with the dramatic increase in numbers due to trend towards delayed child bearing and widespread use of assisted reproduction.

Development of more than one fetus inside the uterus is called multifetal gestation or multiple pregnancy, simultaneous development of two fetus (twin) is the commonest, although with newer infertility treatment protocols, development of 3-8 fetus have been reported.

Factors influencing the frequency of dizygotic twinning are maternal age, parity, race and ethnicity, conception soon after cessation of oral contraceptives, genetic predisposition and use of fertility enhancing therapies.

The body will change in first the same way as any expectant mother, but the discomforts of pregnancy are more marked due to greater needs of two developing babies, more emphasis is laid on certain nutrients like Iron, Calcium, folic acid and protein. During pregnancy there should be booking at good centre, monitoring of health and watch for signs of preterm labour. It is recommended every other week visits during the 2nd trimester and once a week visit during the third trimester.

The increase in multiple births increases the rate of maternal morbidity and mortality. The main causes of maternal morbidity are preeclampsia, anemia, sepsis and postpartum bleeding. Several efforts are made to unify all types of contributions on twins into a new branch known as Gamellology.²

The conception, gestation and labour of plural pregnancy are certainly a challenge the outcome of which is determined by masterly intervention in antepartum, intrapartum and post-partum period. Thus it is important to conduct the study at this particular place to have awareness of risks and early detection which will guide the interventions. This might make allocation of scarce resources improper and prevent death of mothers of multiple pregnancy and their babies due to complications.

METHODS

A prospective observational study carried out during the period of 1 year from 1st April 2014 to 31st March 2015. A total of 200 patients with antenatal clinical and ultrasound confirmed diagnosis of multiple gestation were enrolled for the study. After taking proper consent for the study, patients were examined and findings noted with special reference to maternal age, parity, race and ethnicity, genetic predisposition and use of fertility enhancing therapies. Data is collected using a predesigned Proforma. Patients were followed within seven days. Those patients who were discharged early were asked to leave their mobile phone numbers or attend Obstetrics and Gynecology clinic at day seven.

RESULTS

The present study was carried out in Department of Obstetrics and Gynaecology, during 1st April 2014 to 31st March 2015. A total of 200 patients with multifetal gestation admitted in this period were included in this study.

Incidence of patients with multifetal Gestation during study period was 2.18%. Incidence of twins was 2.14% and triplets 0.032%. Highest incidence was found in the age group 21-25 years (49.5%) and least in the age group

>35 years (2.5%). The 21-25 years is the most common child bearing group in our hospital. 22 patients of less than 20 years had twins; this is because of marriage and conception at an early age in our country. In our study maximum twins were found in 65.5% and next to it were primigravida (60 cases). Grand multigravida constituted 4.5%.

Table 1: Gestational age at the time of presentation.

Gestational age	No. of cases	Percentage
<28 weeks	17	8.5%
29-31 weeks	23	11.5%
33-34 weeks	17	8.5%
35-36 weeks	56	28.0%
37-40 weeks	87	43.5%

56.5% cases presented before they reached the term, 43.5% patients reached 37 weeks or more.

Table 2: Physical findings at the time of admission.

Sr. No.	Findings	No. of Cases	Percentage
1	Undue enlargement of abdomen	124	62%
2.	Multiple fetal parts palpable	80	40%
3.	Pallor	40	20%
4.	Edema on feet	46	23%
5.	Hypertension	57	28.5%
6.	Excessive liquor	08	4%
7.	Bleeding P/V	09	4.5%
8.	Retained second twin	04	2%

At the time of admission most common findings were undue enlargement of the abdomen 62%, multiple fetal parts palpable 40%, hypertension 28.5%, Pallor 20%, edema on feet 23%, 9 patients presents with bleeding P/V out of which 3 patients came with retained second twin as second baby was in turned out to be placenta previa and 6 patients as abruptio placenta Transverse presentation for which LSCS was done.

Table 3: Distribution of cases A/c to mode of delivery.

Sr. no.	Type of delivery	No. of case	Percentage
1.	Vaginal delivery	148	79.14%
2.	LSCS	38	20.32%
	(a) For both babies	34	18.18%
	(b) For second baby only	04	2.13%
3.	Obstetric hysterectomy	01	0.05%

*12 abortions are excluded in this table 1 patient certify undelivered.

Most of the patients had normal vaginal delivery 79.14% because of prematurity, multipara with good obstetric history. Incidence of LSCS was 20.32%. 1 case had obstetric hysterectomy for rupture uterus.

Table 4: Indications of caesarean section (n=38).

Sr. no.	Indications	No. of case	Percentage
1.	Mal presentations	22	57.89%
2.	Fetal distress	04	10.52%
3.	Non progress of labour	03	7.89%
4.	Previous 2 LSCS with scar dehiscence	03	7.89%
5.	Previous caesarean with decreased scar thickness	02	5.263%
6.	Obstructed labour	02	5.263%
7.	Major Placenta Previa	01	2.63%
8.	Previous caesarean with PROM	01	2.63%

Commonest indication for caesarean in our study was Malpresentation. 57.89%, out of which Breech in 1st baby accounts for 2.63% and transverse lie in 1st baby accounts for 13.15%. In the remaining cases, breech vaginal delivery was preferred most commonly because of marked prematurity congenital malformation, multipara with good obstetric history and in those who came with cervix nearly fully dilated.

Table 5: Maternal complications during pregnancy and labour.

Sr. no.	Complication	No. of case	Percentage
During pregnancy			
1	Hypertensive disorder	57	23.5%
2.	Anaemia	40	20%
3.	PROM	17	8.5%
4.	APH	09	4.5%
5.	Poly-hydramnios	08	4.0%
6.	Oligo-hydramnios	02	1.0%
7.	Viral hepatitis	03	1.5%
During labour			
1.	Preterm labour	76	38.0%
2.	Atonic PPH	16	8.0%
3.	Rupture uterus	01	0.5%
Maternal deaths		03	1.5%

The most common complications during pregnancy were hypertensive disorders 28.5% and anaemia 20%.

Table 6: The incidence of maternal mortality.

Sr. no.	No. of case	Percentage
1	Total no. of cases	200
2.	No. of mortalities	03

Out of 57 cases 25 cases were of gestational hypertension, 30 cases were of preeclampsia, 1 eclampsia and 1 chronic hypertension.

There were total 3 mortalities in study period. The incidence of maternal death in our study was 1.5%.

Table 7: Analysis of maternal mortality.

Sr. no.	Diagnosis	Obstetric history	Mode of delivery	Cause of death
1.	Full term pregnancy with labour pains with twins with pre-eclampsia	G3P2L2	Vaginal	Pulmonary embolism
2.	ANC 34 weeks pregnancy with twins with pre-eclampsia with IUFD with severe	G2P1A0L1	-	Cardiac failure
3.	Full term pregnancy with labour pains with triplets with pre-eclampsia with severe anaemia with CCF with pulmonary edema	G2P0A1L0	Vaginal	Pulmonary edema

All the 3 patients were multigravida 2 delivered vaginally and 1 was undelivered.

DISCUSSION

Development of more than one fetus inside the uterus is called multifetal gestation or multiple pregnancies. It's a great challenge to the concerned obstetricians, due to late diagnosis and related complications. Ignorance on the part of patients themselves puts this group in great peril. The increase in multiple births increases the rate of maternal morbidity and mortality.

56.5% cases presented before they reached the term, 43.5% patients reached 37 weeks or more. In Katke and Thakre report 48.44% patients delivered between 33-36 weeks.³ Percentage of patients delivering between 33-36 weeks by dates was higher 25.5% as compared to Bhoraskar's study (13.1%). As compared to various authors, the average weeks of gestation are very similar and comparable with our study i.e. 35 weeks, as the average weeks of gestation among twins being 36 weeks by Kauppila et al and 33 weeks by Erdemoglu et al and 34 weeks by Yuel et al.^{4,6}

Undue enlargement of the abdomen was the most common presenting complaint followed by maternal hypertension and palpation of multiple fetal parts.

Most of the patients had normal vaginal delivery 79.14% because of prematurity, multipara with good obstetric history. Incidence of LSCS was 20.32%. 1 case had

obstetric hysterectomy for rupture uterus while Thompson reported incidence of LSCS as high as 45% and Katke and Thakre study had maximum number of vaginal deliveries, Twin 1 (53.125%), Twin 2 (50%), and LSCS was required for 46.875% of twin1 and 50% of Twin 2.³ Yuel et al had 55 % vaginal deliveries and 45% caesarean sections.⁶ In study by Erdemoglu et al 50.5% had vaginal deliveries and 45 % required caesarean section.⁵

Commonest indication for caesarean in our study was Malpresentation. 57.89%, out of which Breech in 1st baby accounts for 2.63% and transverse lie in 1st baby accounts for 13.15%. Katke and Thakre study, Malpresentation in twins (43.75%) was the major indication for LSCS.³ The presence of breech or transverse lie of any of the fetuses increased the chances of LSCS.

The most common complications during pregnancy were hypertensive disorders 28.5% and anaemia 20%. The incidence of preeclampsia, as reported by various authors is Joseph 27%, Jacob Bhargava 31.9%, Tempe and Batra 36.25%, Bhoraskar 22.8%. In our study incidence of preeclampsia was 15%.⁷⁻⁹

Out of 40 cases of anaemia, 32 were moderate anemia and 8 of severe degree. Various authors have reported an incidence of anemia in twins as Guttamacher, Spellacy 40%, Tempe and Batra 34.5%, Bhoraskar as 31.9%.⁹⁻¹¹

The incidence of hydramnios in our study was 47% while Newton ER 12%, Bhoraskar - 9.6%, Bhatia-10.5%, Patel 10%, Jacob and Bhargava 9.5%.⁸ APH was found in 9 cases (4.5%).¹²⁻¹⁴ In 3 cases it was placenta previa and 6 cases were abruptio placenta, Newton- 2.6%, Joseph 2.8%, Jacob and Bhargava 3.3%, Bhoraskar- 2%, Tempe and Batra 7.0%.^{7-9,12}

During labour, the most important complication in our study was preterm labour found in 38% cases. Morale WJ also reported incidence as high as 60%.¹⁵ Incidence of PPH was 8% in our study. Blood transfusion was required in 10 cases, Bhoraskar- 3.59%, Jacob and Bhargava-2.7%, Tempe and Batra- 4%.^{8,9} The incidence of maternal death in our study was 1.5%.

All the 3 patients were multigravida 2 delivered vaginally and 1 was undelivered. All the 3 patients were unbooked and referred patients. Pulmonary embolism was the unavoidable cause, but the pulmonary edema and cardiac failure due to severe anemia were avoidable, but due to late referral, they can't be avoided.

CONCLUSION

Multiple gestation is a mixed blessing and if successful, allows a couple to rapidly expand their family with a

minimum number of pregnancies but it's a great challenge to the concerned obstetricians. Complications due to multiple gestation are associated with adverse maternal outcome.

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