

A PROSPECTIVE STUDY OF MATERNAL AND FETAL OUTCOME IN REFERRED INTRAPARTUM CASES AT GMH, REWA

Obstetrics & Gynaecology

Corresponding Author

Dr Rahul Mishra
Department of Radiology
Shyam Shah Medical College,
Rewa, M.P.
Email: drrahulrewa@gmail.com
Mobile: 9575285501

Anuradha Mishra^A, Sonal Agrawal^A

^A - Assistant Professor, Department of Obstetrics and Gynaecology, SS Medical College, Rewa, M.P.

Abstract:

Abstract: The objective of obstetrics is that every pregnancy should culminate in a healthy mother in possession of a healthy baby. The present prospective study was conducted in Department of Obstetrics and Gynaecology of Shyam Shah Medical College and associated Gandhi Memorial Hospital, Rewa. The present work comprises of a study of demographic profile of 165 referred versus 165 booked pregnant women in labour who were admitted. The criteria for labeling the case as booked was 3 or more visits to the antenatal clinic during the course of pregnancy, whether the patient booked at PHC, CHC, District Hospital, antenatal clinics run by G.M.H. or in private setup. There are many factors which determine the pregnancy outcome. By providing the standard maternity and child health services, much can be done for betterment of parturient.

Keywords: Obstetrics, maternal and fetal outcome, intrapartum cases

Introduction

The objective of obstetrics is that every pregnancy should culminate in a healthy mother in possession of a healthy baby. The world health organization commemorates World Health Day 2005 in New Delhi by launching the World Health Report, which featured the theme of **“Make Every Mother and child Count.”**(Delhi Declaration, 2005).¹

In south East Asian region one mother dies every 3 minutes and in India every 4 minutes (K. Bhasker Rao, Kurian J, Mala V; 2002).² Perinatal mortality rate also forms a very sensitive indicator of MCH services in a particular community, maternal mortality rate being only a crude index (K. Park 2007)⁴.

Aims and objectives

“Maternal health is not mainly as issue of doctors, social services and hospitals. It is

an issue of social justice”.

The study of maternal and fetal outcome in obstetric cases in labour referred from rural area has been done to create awareness that antenatal booking and regular utilization and implementation of antenatal services along with a good referral system has a marked effect on the maternal and foetal outcome in pregnancy. The objectives are as follows:-

1. To study the demographic profile of referred and booked pregnant women in labour eg. age, distance, residence and occupation etc.
2. To study the obstetric profile of referred and booked pregnant women in labour.
3. To study the factors influencing the maternal and perinatal outcome eg. distance from tertiary care centre, literacy, general condition, stage of labour, fetal heart status on admission and history of interference.
4. To study the trends in management of

referred cases and the rate of operative interference.

5. To compare the maternal and fetal outcome in both the groups
6. To suggest recommendations to improve present status

Material and Methods

The test of any civilization is the measure of consideration and care which it gives to its weaker members.

Material

The present prospective study was conducted in Department of Obstetrics and Gynaecology of Shyam Shah Medical College and associated Gandhi Memorial Hospital, Rewa. The present work comprises of a study of demographic profile of 165 referred versus 165 booked pregnant women in labour who were admitted. The criteria for labeling the case as booked was 3 or more visits to the antenatal clinic during the course of pregnancy, whether the patient booked at PHC, CHC, District Hospital, antenatal clinics run by G.M.H. or in private setup.

Method of study

1. General particulars that included name, age, address, registration number, date of admission, referred/ booked was noted.
2. History of patients including present history, obstetric history, menstrual history and past history (family/personal).
3. Examination of patients that includes general examination, systemic examination, obstetric examination and per vaginam examination.
4. Investigation including blood examination, urine culture, Findus examination and USG in some high risk cases.
5. Nature of labour
6. Examination of baby
7. Puerperium

Observations

Residence	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Urban	33	20	83	50.3
Rural	132	80	82	49.7

Distance in KM	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
<25	62	37.5	142	86.1
25-50	42	25.4	18	10.9
51-75	35	21.2	5	3
>75	26	15.7	-	-

Age in Years	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
15-20	23	13.9	32	19.4
21-25	93	56.4	93	56.4
26-30	36	21.8	35	21.2
31-35	11	6.7	5	3
35 onwards	2	1.2	-	-

Gravidity	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Primi Gr.	80	48.5	73	44.2
2 nd Gr	39	23.6	58	35.2
3 rd Gr	27	16.4	23	13.9
4 th Gr	13	7.9	11	6.7
5 th Gr & above	6	3.6	-	-

Parity	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Nullipara	83	50.3	82	49.7
Primipara	44	26.7	55	33.3
Multipara	33	20	28	17
Grand multipara	5	3	-	-

Table-6

Distribution of Women According to Literacy Status

Literacy	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Nil	56	33.9	42	25.5
Primary	52	31.6	22	13.3
8 th	39	23.6	34	20.6
High School	18	10.9	33	20
HR Secon. or above	-	-	34	20.6

Table-7

General Condition of Mother on Arrival to Hospital

General Condition of Mother on Admission	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Fair	133	80.6	165	100
Not Satisfactory	15	9.1	-	-
Poor	17	10.3	-	-

Table-8

History of Interference

Interference	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Handling by local DAI	20	12.1	6	3.6
Handling by Paramedical Local Practitioner	24	14.5	7	4.2
Oxytocin Drip Augmentation at PHC, CHC and District Hospital	36	21.8	9	5.5
Total	80	48.4	22	13.3

Table-9

Condition of Fetus on Arrival

Condition of Fetus	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
FHS normal	131	79.4	162	98.2
FHS abnormal	5	3	-	-
FHS absent	29	17.6	3	1.8

Table-10

Arrival in Relation to Stage of Labour

Stage of Labour	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
1 st Stage	139	84.2	159	96.4
2 nd Stage	26	15.8	6	3.6

Table-11

Diagnosis at the Time of Admission

Diagnosis of the time of Admission	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
No. Complication	41	24.9	89	53.9
PROM	31	18.8	22	13.3
Obstructed Labour	16	9.7	2	1.2
S. Preeclampsia	8	4.8	5	3
Eclampsia	6	3.7	-	-
Intrapartum eclampsia with twins	1	0.6	-	-
Mal presentation	14	8.5	11	6.7
Preterm Labour	10	6.1	12	7.3
Previous LSCS	9	5.5	12	7.3
APH	8	4.8	6	3.7
Rupture Uterus	7	4.2	-	-
Hand Prolapse	4	2.4	1	0.6
S. anaemia (Hb <3 gm%) with decompensation	3	1.8	-	-
S. oligohydramnios with precious pregnancy	2	1.2	4	2.4
Cord Prolapse	2	1.2	1	0.6
TP with LP with Pyrexia illness	2	1.2	-	-
TP with LP with Hepatic encephalopathy	1	0.6	-	-

Table-12

Distribution of Women According to Mode of Delivery

Mode of Delivery	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Term Vaginal delivery	79	47.8	116	70.3
Preterm vaginal delivery	18	10.9	12	7.3
Vaginal Birth after Caesarean	6	3.6	7	4.3
Assisted Breech	10	6.1	5	3
Twins	3	1.8	5	3
Instrumental Delivery	5	3.1	2	1.2
LSCS	35	21.2	18	10.9
Caesarean Hysterectomy (Sub Total Hysterectomy)	5	3.1	-	-
Certified without delivery	4	2.4	-	-

Table-13

Indication for LSCS

Indication of LSCS	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Obstructed Labour	14	8.4	2	1.2
Transverse LIE with hand with cord prolapse	5	3	1	0.6
Previous LSCS	3	1.8	5	3
Fetal distress	2	1.2	4	2.4
Placenta previa	3	1.8	2	1.2
Primary Breech	1	0.6	2	1.2
Twins	2	1.2	1	0.6
APE	2	1.2	-	-
Severe oligo hydramnios with precious baby	2	1.2	1	0.6
Compound presentation	1	0.6	-	-

Table-14
Frequency of Puerperal Complications

Complications	Referred (n-165)		Booked (n-165)	
	No.	%	No.	%
Fever	55	33.3	30	18.1
RTI	11	6.7	14	8.5
UTI	2	1.2	2	1.2
Distension	10	6.1	4	2.4
Wound sepsis	9	5.5	5	3
Wound gaping	7	4.2	3	1.8

Table 18
Clinical Causes of Perinatal Mortality

Causes	Perinatal mortality in referred		Perinatal mortality in booked	
	No.	%	No.	%
Miscellaneous	7	15	-	-
Rupture Uterus	6	12.8	-	-
APE	6	12.8	-	-
Obstructed labour with MSL	5	10.6	1	16.7
Preterm	5	10.6	2	33.2
FD with MSL	3	6.4	-	-
Hand Prolapse	3	6.4	1	16.7
Cord Prolapse	3	6.4	1	16.7
PROM	3	6.4	-	-
Preeclampsia	2	4.2	-	-
APH	2	4.2	1	16.7
Retained second Twins	2	4.2	-	-

Table-15
Distribution of Birth Weight of Babies

Weight in grams	Babies in Referred n= 164		Babies in Booked n= 171	
	No.	%	No.	%
<1490	2	1.2	2	1.2
1500-1990	22	13.4	11	6.4
2000-2490	44	26.8	31	18.1
2500-2990	74	45.2	98	57.3
3000-3490	19	11.6	24	14.1
>3500	3	1.8	5	2.9

Table-19
Perinatal Mortality in Relation to Age

Age group in years	Perinatal Mortality in Referred (n-47)		Perinatal Mortality in Booked (n-6)	
	No.	%	No.	%
15-20	6	12.7	2	33.4
21-25	28	59.6	3	50
26-30	10	21.3	1	16.6
31-35	3	6.4	-	-

Table-16
Perinatal Outcome

Type	Babies in Referred (n-164)		Babies in Booked (n-171)	
	No.	%	No.	%
IUD	29	17.6	3	1.8
Still birth	2	1.2	-	-
Death within 7 days	16	9.8	3	1.8
Nursery Care	20	12.2	12	7
Live Healthy Baby	97	59.2	153	89.4

Table-20
Perinatal Mortality in Relation to Parity

Parity	Referred (n-47)		Booked (n-6)	
	No.	%	No.	%
Nulli para	21	44.7	2	33.4
Primi para	11	23.4	3	50
Multipara	13	27.7	1	16.6
Grand multipara	2	4.2	-	-

Table-17
Perinatal Outcome in LSCS Cases

Type	LSCS in Referred (n-35)		LSCS in Booked (n-18)	
	No.	%	No.	%
IUD	6	17.6	-	-
Still birth	1	2.8	-	-
Neonatal death within 7 days	8	22.8	-	-
Nursery care	6	17.1	4	22.2
Live health baby	14	40	14	77.8

Table - 21
MATERNAL MORTALITY

a. In Referred Group

S. No.	Age in yrs	Obstetric History	General Condition	Diagnosis on admission	Cause of death	Mode of delivery	Perinatal Outcome
1.	40	G3P2L1D1	Poor	TP with LP with S. anaemia	S. anaemia	Patient certified before delivery	
2.	20	Primi	Poor	TP with LP with S. anaemia	S. anaemia	V.D.	F/F /IUD -23 kg
3.	28	G3 P2L1D1	Poor	PTP with LP with S. anaemia with APH	Haemorrhage	VD	P/M/IUD 1.8kg
4.	21	G3P2L2	Poor	PTP with LP with S. anaemia with APH	Haemorrhage	VD	F/F/IUD 2kg
5.	24	G2P1L1	Poor	PTP with LP with severe anaemia with APH with shock	Haemorrhage	Patient certified before delivery	
6.	30	G5 p3L3Ab1	Poor	TP with LP. eclampsia	Aspiration pneumonia	Patient certified before delivery	
7.	30	G3 p2L2	Poor	TP with S. preeclampsia	Pulmonary oedema	Patient certified before delivery	
8.	21	Primi	Poor	TP with LP with cerebral malaria	Cerebral malaria	VD	F/M/IUD - 24 kg
9.	22	Primi	Poor	PTP with LP with cerebral malaria	Cerebral malaria	Forceps	P/M/IUD -1.8 kg
10.	25	G2P1L1	Poor	TP with LP with pr LSCS with hepatic encephalopathy	Atonic and traumatic PPH secondary to coagulopathy due to jaundice	VBAC	F/F/IUD 23 kg
11.	28	G3 P2L2	Poor	TP with LP with uterus with macerated IUD	Sepsis	Sub T.H.	F/M/IUD-28kg
12.	22	Primi	Avg	TP with LP with Obst labour	Amniotic fluid embolism	LSCS	F/F/A - 27
13.	35	G3P2L2	Avg	TP with LP with PROM with CPD	PPH	LSCS	F/F/A-23 kg

Discussion

The emphasis on the fact that the maternal and fetal outcome is poor in mothers in referred group has been made in the present study. Cases are mostly referred from rural population that has negligible availability of quality maternal health services.

Residence: (Table-1)

In the present study, 80% of referred cases came from rural area whereas only 20% from urban area. Among booked cases, 50.3% came from urban area while only 49.7% from rural area. These findings are similar to those made by WHO 30 cluster survey¹¹ in India from June to October 1999.

Distance: (Table-2)

In referred group, 37.5% cases came from distance of <25 km. and 36.9% cases were referred from distance more than 50 km.

Maternal age: (Table-3)

Cases in age group 15-20 years constituted 13.9% among referred group and 19.4% among booked one. Pregnant mothers in age group of 21-25 years constituted 56.4% in both referred and booked group. Umesh N. Jindal 1988 (1978-1981)¹² found an incidence of 10.12% of rural mothers belonging to teenage at tertiary care centre Chandigarh entertaining referred emergencies. R. Sahoo (1992)¹⁰ found 10.8% of teenage pregnancy RMCU centre, Manipal (1987-1991).

Gravidity and Parity: (Table-4,5)

In referred group, 50.3% cases were nullipara and 49.7% booked cases were the same. Grand multiparity constituted 3% among referred group only. D.B. Dumir et al 1984 (1979-1980)⁷ found 44.04% of primigravidae and 15 % of multiparas in referred cases, Limaye et al 1980 (1977-1978)⁶ noted 32.4% primi and 15.2% of multipara. V. Pendse et al (1989)⁹ noted 38% of primigravidae among the rural admission.

Literacy: (Table-6)

In referred group, 33.9% were illiterate, 31.6% had only primary education. In booked group, 25.5% were illiterate and 13.3% had only primary education. Vinayak Pendse et al (1989)⁹ found an incidence of illiterate mothers 6 times higher in unbooked group of rural masses.

General condition of mother on arrival to hospital: (Table-7)

10.3% cases reached hospital in poor general condition in referred group and needed immediate management. In the booked series, all reached hospital in satisfactory condition. Majority of cases in referred group could have been referred much earlier in antenatal period so that many condition could have been managed of proper times improving the fetal and maternal outcome.

History of interference: (Table-8)

In referred group, 48.4% cases had history of interference before reaching hospital that was just three times as compared to booked cases. These cases had late referral. Most of them underwent fruitless sections. Maternal and fetal outcome was very poor in such cases.

Condition of fetus on arrival: (Table-9)

In referred group, 17.6% cases had absent FSH on arrival to hospital, 3% had abnormal FSH and 79.4% had normal FSH. While in booked group, only 1.8% had absent FSH and 98.2% had normal FSH. Limaye et al 1980⁶ also noted 13.6% cases with absent fetal heart. High risk mothers being unrecognized of their risk factors is an important cause of such fetal jeopardy.

Arrival in relation to stage of labour: (Table-10)

In referred group, 84.2% case were admitted in 1st stage and 15.8% cases were admitted in 2nd stage of labour while in booked cases, 96.4% cases were admitted in 1st stage of labour and 3.6% cases were admitted in 2nd stage. In referred group, admission in 2nd stage is just five times comparison to booked one. Mothers reporting in second stage of labour

were mostly obstructed labour.

Diagnosis at the time of admission: (Table-11)

Complication for which a referral is made has remained the same throughout years. In this study, PROM was the most common indication for admission, both in referred group (18.8%) and booked group (13.3%).

Mode of delivery: (Table-12,13)

In referred group, 47.8% cases had term vaginal delivery. Out of 165, 18 cases had PTVD, 6 cases had VBAC, 10 cases were delivered by assisted breech, 3 cases were twins delivery and 5 cases had instrumental delivery by forceps. In booked series, 70.3% cases had term vaginal delivery. Limaye et al 1980 (1977-1978)⁶ noted 42.8% vaginal deliveries and 9.6% forceps. D.C. Dutta 1978 (1965-73)⁵ noted incidence of 3.7% of LSCS in rural obstetric practice.

Maternal morbidity: (Table-14)

In the present study, fever was more common in referred (33.2%) as compared to booked cases (18.1%). Wound sepsis and wound gaping was present in 9.7% in referred and 4.8% in booked group. Postoperative abdominal distension is also more common in referred mothers (6.1%) as compared to booked mothers (2.4%). Blood transfusion was required in 25% patients.

Perinatal outcome: (Table-15,16,17,18,19,20)

Majority of babies were born with a birth weight of 2.5 to 3 kgs. In referred group, incidence of LBW was 41.4% whereas in booked group, it was 25.7% (Table-15). In booked group, 165 cases delivered were including 6 twins delivery. Total no. of birth were 171. In referred group, 133 cases (81.2%) and in booked group, 168 cases (98.2%) had live birth (Table-16).

Still birth accounted for 18.8% in referred and 1.8% in booked one. perinatal mortality were 47 giving a PMR of 353.38/1000 live births whereas perinatal mortality were 6 giving PMR of 35.7/1000 live birth in booked group. Limaye et al (1980)⁶ found a PMR of 283.3/1000 births.

Major causes were abnormal labour, APH and prematurity (Table-17).

High percentage of PNM in our study needs a scope for improvement of antenatal services, blood transfusion, anesthesia and operation theatre. Rupture uterus 12.8%, eclampsia 12.8%, obstructed labour with MSL 10.6%, hand prolapsed 6.4% and preeclampsia 4.2% were among the clinical causes of PNM. Nulli para had much higher perinatal loss (44.7%) than primi para (23.4%). (Table-18,20)

Perinatal mortality was highest among the age group 15-25 years, as mothers in this age group were maximum owing to early marriage and early child bearing (Table-19). Early neonatal death was more common in low birth weight babies which compares with Usha Shah (1989)⁸. In this series, PND was higher in babies weighing normal which implies that these deaths could have been avoidable if proper antenatal care, screening and early referral was made. (Table-20)

Maternal mortality: (Table-21)

There were 13 maternal death giving a MMR of 97.7/1000 live births in referred cases. There was one maternal death in booked group giving a MMR of 5.95/1000 live births. Limaye 1980 (1977-1978)⁶ found MMR of 12/1000, Dumir et al 1984 (1979-1980)⁷ noted 2.71/1000. R. Sahoo 1992 (1987-1990)¹⁰ noted an MMR of only 0.54/1000 due to excellent antenatal services provided by MCH services under the task force laid down by government.

Summary

Out of 165 referred cases, 80% were from rural area and 20% from urban area. Maximum (62.9%) pregnant mothers came from a distance within 50 km 15.7% cases from a distance more than 75 km. Within 30 years of age, 92.1% cases were in referred group and 97% in booked group whereas 6.7% of cases were between the age of 31-35 years from referred group. 4th gravidae and above were 2 times (11.5%) in referred cases than in booked. In referred group, only 10.3% cases reached to GMH in poor general condition and needed resuscitation.

Patients admitted in IInd stage labour were 5 times more in referred group. PROM was the most common indication

for admission. In referred group, 47.8% patient had term vaginal delivery, 10.9% cases had preterm vaginal delivery, 3.6% had VBAC, 6.1% cases had assisted breech delivery, 1.8% cases had twins delivery and 3.1% cases had instrumental delivery. In referred group, 24.3% cases had operative interference in form of LSCS (21.2%) and caesarean hysterectomy (3.1%) whereas in booked group, LSCS was done in 10.9% cases.

In referred group, out of 164 babies born, 97 were healthy, 20 were shifted for nursery care, 29 were IUD, 2 were still births and 16 babies certified within 7 days in nursery. There were 47 perinatal deaths in referred whereas 6 were in booked group. There were 13 maternal deaths, 7 due to direct cause in referred group and one due to indirect cause in booked group.

Conclusion

Those who would benefit most from a service are least likely to obtain it.

There are many factors which determine the pregnancy outcome. By providing the standard maternity and child health services, much can be done for betterment of parturient. It is evident from the present study that maternal and perinatal morbidity and mortality can be reduced by adequate antenatal care facilities to the pregnant mothers. Improving the literacy status of women and providing proper transport and communication, help in better utilization of antenatal health care services. Referral centers must be well equipped with blood transfusion and anesthesia facilities, proper instruments, trained paramedical staff and specialist services.

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