Original article

Obstetric & perinatal morbidity & mortality in booked & unbooked antenatal Patients

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Abstract:

Introduction: Our objective was to study the comparison of sociodemographical profile, maternal risk factors, obstetrical & perinatal outcomes in booked and unbooked Antenatal patients.

Study Design: Retrospective observational study.

Materials and Methods: In present study,total 102 patients booked & unbooked were included. A detailed obstetrics history was obtained and maternal high risk factors were noted. Examination, investigation and detail of intrapartum, postpartum period and associated complications were recorded.

Results: Out of total 102 patients 44 (43.14%) were unbooked and 58 cases (56.86%) were booked. Compared to booked patients, majority of unbooked patients belonged to lower social class, came from remote areas and had a significant higher incidence of teenage pregnancy and grandmultiparity. Unbooked mothers had higher incidence of anemia, pregnancy induced hypertension & post dated pregnancy. Two maternal deaths were noted in the unbooked group. (70.45%) babies of unbooked and (25.86%) babies of booked cases needed neonatal intensive care ($p<0.05$). The incidence of meconium stained amniotic fluid, birth asphyxia, perinatal deaths and APGAR score <7 at 1 min and 5 min were significantly higher in babies of unbooked mothers.

Conclusion: There is a positive correlation between unbooked mothers and an increased risk of maternal and fetal adverse outcome. Therefore ,proper utilization of health facilities will help in reducing incidence of maternal & perinatal morbidity & mortality.

Keywords: Booked case ,Obstetric outcome , Perinatal outcome, Unbooked cases

Introduction:

Maternal mortality is not statistics. It is death of women. India is one of those countries having high maternal and infant mortality rates. Maternal death is one of the most terrible ways to die, be it bleeding to death ,convulsions of toxaemia of pregnancy or agony of purperal sepsis. It is an event that should never have been allowed to happen. Severe acute maternal morbidity is nothing but near miss cases. Maternal anemia , low birth weight of children & maternal mortality are some of the burning issues in developing countries [1]. Maternal complications and poor perinatal outcome are highly associated with non-utilisation of antenatal and delivery care services and poor socioeconomic conditions of the patient, with poorer outcomes in unbooked than booked patients.[2] Recently much stress has been put by the

Government of India on hospital delivery rather than home delivery to reduce the complications during labour. Almost each & every case could have been prevented .With this impression, present study was conducted to analyze the differences in Obstetric and perinatal outcomes among booked and unbooked cases in our scenario. Our aim was to study the comparison of sociodemographical profile, maternal risk factors, obstetrical & perinatal outcomes in booked and unbooked patients.

Material & methods:

Present retrospective study was conducted on 102 cases at Department of Obstetrics and Gynecology in Kamineni Institute of Medical Sciences, Narketpally from January 2015 to June 2015. Patients were selected according to following criteria:

Inclusion Criteria:

1. All women in labour gestational age > 28 week .

2. All women admitted for caesarean section.

3.Patients referred for any complication during labour or in puerperium

Exclusion Criteria: 1. Pregnant women admitted for antenatal complications.

A detailed obstetrics history was obtained and maternal high risk factors like PIH, GDM, polyhydramnios etc were noted. The socioeconomic status was computed using the modified Kuppuswamy's scale[3] .Antenatal record was reviewed. Patients were divided into 2 groups i.e., Booked and Unbooked. Booked mothers were those who had attended minimum of three antenatal clinic in our Institute , 1st visit at 20 weeks or as soon as pregnancy is known, 2nd visit at 32 weeks and 3rd visit at 36 weeks. Unbooked mothers were those who had never taken prenatal care and come for the first time during this pregnancy in labour.[1] After physical & obstetrics examination of patients, Fetal wellbeing was assessed with ultrasonography and cardiotocography. As 75-80 % patients were admitted as emergency in labour mode of delivery was decided depending on state of mother and fetus. All complications that occurred during labour and postnatal period were recorded.

Maternal outcome measures were followed for mortality and morbidity ,which can be due to major obstetric hemorrhage, DIC,ARF, puerperal sepsis, chorioamnionitis, wound infection, pulmonary edema and post operative mechanical ventilation. Fetal outcome studied were perinatal mortality(Intrauterine fetal death and neonatal death). Newborns were examined for APGAR score, weight and abnormality. Those with birth asphyxia were admitted to Neonatal Intensive Care Unit (NICU) and followed up till discharge. All information was gathered. Results were analyzed & statistical analysis was done with Chi-Square test. p value < 0.05 was considered as significant.

Results:

Total one hundred and two patients were included in the study , 44 cases (43.14%) were unbooked and 58 cases (56.86%) were booked.

"Table-1" Distribution according to Demographic profile

S.No	Parameters		Booked (n=58) Number of patients & Percentage	Unbooked (n=44) Number of patients & Percentage
1	Age (years)	<20*	6 (10.34%)	11 (25%)
		21-25	23 (39.66%)	22 (50%)
		26-30	18 (31.04%)	7 (15.91%)
		31-35	7 (12.07%)	3 (6.82%)
		>35	4 (6.89%)	1 (2.27%)
2	Parity *	Primigravida	23 (39.66%)	17 (38.64%)
		Multipara	34 (58.62%)	18 (40.91%)
		Grandmultipara	1 (1.72%)	9 (20.45%)
3	Socioeconomic	Upper	1 (1.72%)	0 (0%)
	Status*	Upper middle	7 (12.07%)	2 (4.55%)
		Lower middle	21 (36.21%)	10 (22.73%)
		Upper Lower	17 (29.31%)	13 (29.55%)
		Lower	12 (20.615)	19 (43.18%)
4	Gestational Age	29-32	2 (3.45%)	11 (25%)
	(weeks)*	32-36	11 (18.97%)	5 (11.36%)
		37 and above	45 (77.58%)	28 (63.64%)

*Significant p value < 0.05

The maximum number of cases were seen between 21-25 years. Teenage pregnancy (25% in unbooked vs. 10.34% in booked, p<0.05) . one case in the unbooked group were more than 35 years compared to 4 cases in the booked group. Compared with booked patients, unbooked patients had a statistically significant higher incidence of grand multiparity (20.45% in unbooked vs. 1.72% in booked, p <0.05). Majority of unbooked cases belonged to lower social class and came from remote areas. Majority of patients were multiparous and had gestational age of >37 weeks. 36.36% unbooked patient presented with preterm labour Compared to 22.44% booked patient. (Table-1)

"Table-2" Distribution of Risk factors in booked & unbooked cases

S.NO	Risk factors		Booked (n=58) Number of patients & Percentage	Unbooked (n=44) Number of patients & Percentage
1	Medical disorder	Anaemia	11(18.97%)	23(52.27%)
		PIH	12(20.69%)	19(43.18%)
		Chronic Hypertension	1(1.72%)	2(4.55%)
		Eclampsia	1(1.72%)	7(15.91%)
		GDM	2(3.45%)	3(6.81%)
		Heart disease	1(1.72%)	2(4.55%)
2	Malpresentation	Breech	5(8.62%)	5(11.36%)
		Face	0(0%)	0(0%)
		Brow	0(0%)	1(2.27%)
		Transverse	2(3.45%)	1(2.27%)
3	Twin		5(8.62%)	2(4.55%)
4	Postdated		1(1.72%)	15(34.09%)
5	Previous LSCS	1	9(15.52%)	5(11.36%)
		2	7(12.07%)	3(6.81%)
		3	2(3.45%)	1(2.27%)
6	Bad obstetric history		1(1.72%)	1(2.27%)
7	APH	Placenta previa	5(8.62%)	2(4.55%)
		Abruptio placenta	1(1.72%)	3(6.81%)
8	Rh-VE		7(12.07%)	5(11.36%)
9	Obstructed Labour		0(0%)	2(4.55%)
10	Polyhydramnios		5(8.62%)	2(4.55%)
11	PROM		1(1.72%)	6(13.665)

[The occurrence of maternal risk factors among booked and unbooked mothers is shown in(Table-2). Most of the patient presented with more then 1 risk factor. Anaemia(52.27% in unbooked vs.18.97% in booked, $p<0.05$), pregnancy induced hypertension (43.18% in unbooked vs.20.69% in booked, $p<0.05$) and post dated pregnancy (34.09% in unbooked vs. 1.72% in booked ; $p <0.05$).]

"Table-3" Mode of Delivery

S.No	Mode of delivery	Booked (n=58) Number of patients & Percentage	Unbooked (n=44) Number of patients & Percentage
1	Normal Vaginal delivery	24(41.38%)	21(48.17%)
2	Assisted Breech delivery	3(5.17%)	4(9.09%)
3	Forcep	2(3.45%)	2(4,55%)
4	Vaccume Extraction	1(1.72%)	1(2.72%)
5	Caesarean section	28(48.27%)	17(38.645)

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Spontaneous vaginal delivery was the major mode of delivery. It was higher in unbooked cases than booked cases. (48.17% vs. 41.38%), though the difference was not statistically significant. (Table-3)

"Table-4" Distribution of Maternal Outcome

S.NO	Maternal Outcome	Maternal Complication	Booked (n=58) Number & Percentage	Unbooked (n=44) Number & Percentage
1	Morbidity	Massive Haemorrhage	1(1.72%)	11(25%)
2		Chorioamnionitis	0(0%)	3(6.81%)
3		Puerperal sepsis	0(0%)	1(2.72%)
4		Wound infection	1(1.72%)	5(11.36%)
5		Congestive Heart Failure	0(0%)	2(4,55%)
6		ARF (Renal failure)	0(0%)	2(4,55%)
7		DIC	1(1.72%)	1(2.72%)
8		Pulmonary Edema	0(0%)	1(2.72%)
9		Post partum cardiomyopathy	0(0%)	1(2.72%)
10	Mortality		0(0%)	2(4,55%)

Overall maternal morbidity was (29.41%). Out of total booked cases (5.17%) patients suffered from one or more morbid condition as compared to (61.36%) of unbooked cases. Most frequent morbidity was massive haemorrhage due to atonic post partum hemorrhage (PPH) occurring in (1.72%) of booked and (25%) of unbooked cases.Two patients died during study period. Both were unbooked cases. One case was G2P1L1 with 36weeks of gestation with Abruptio placenta with IUD.LSCS followed by caeserean hysterectomy was done.There was huge retro placental clot around 3liter. Patients went in to Cardiac Arrest. Second case was also refered case Outside caeserean section was done and refered in view of atonic PPH. Massive blood transfusion given , patient died of DIC (Table 4).

"Table-5" Distribution of Perinatal Morbidity

S.NO	Perinatal morbidity		Booked (n=58) Number & Percentage	Unbooked (n=44) Number & Percentage
1	Intrapartum	FHR abnormality	5(8.62%)	8(18.18%)
		Meconium stained liquor	6(10.34%)	8(18.18%)
2	After birth	Birth asphyxia	4(6.89%)	7(15.91%)
		Congenital abnormality	0(0%)	2(4.55%)
		Apgar score(<7) At 1 min	2(3.45%)	3(6.81%)
		Apgar score(<7) At 5 min	2(3.45%)	2(4.55%)
3	Neonatal sepsis		1(1.72%)	5(11.36%)
4	NICU admission		15(25.86%)	31(70.45%)

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During Intrapartum period, meconium stained amniotic fluid (MSAF) was noted in (18.18%) unbooked compared to (10.34%) booked cases (p< 0.05). Babies born to unbooked mothers had more birth asphyxia (15.91% unbooked vs. 6.89% booked; p<0.05). The relationship between Apgar score and booking status was also statistically significant (p<0.05).The difference in terms of NICU admissions among booked and unbooked cases was statistically significant (70.45% unbooked vs. 25.86% booked; p<0.05) (Table 5).

"Table-6" Distribution of Perinatal Mortility

S.NO	Perinatal mortility	Booked (n=58) Number & Percentage	Unbooked (n=44) Number & Percentage
1	Intrauterine fetal death	0(0%)	5(11.36%)
2	Early neonatal death	2(3.45%)	7(15.91%)
3	Total mortality	2(3.45%)	12(27.26%)

Perinatal mortality was (27.26%) in unbooked and (3.44%) of booked, the result being statistically significant (p<0.05) . There was also a statistically significant difference between booked and unbooked mothers in terms of intrauterine death (Table 6).

Discussion:

Maternal mortality has become a public health problem.In developing country like India, increased incidence of teenage pregnancy in rural area is because of illiteracy & low educational status.They have lack of knowledge regarding risk of early and unplanned pregnancies. In our study more number of patients were multipara both in booked & unbooked because they were not aware of the need for birth spacing and the importance of contraceptive measures and as such, kept on becoming pregnant. There is higher percentage of the grand multiparous patients were unbooked, most likely because these mothers had previous successful vaginal deliveries without antenatal care and therefore they felt assured and did not feel the need to seek antenatal care in the pregnancy [4,5] Present study showed that a higher percentage of unbooked mothers belonged to lower socio-economic status. Poor economic and education status may make it difficult for women to make informed decisions about using preventive and promotive health services, such as antenatal care.[6] The higher incidence of antenatal complications such as anaemia in both booked & unbooked cases because of too many & too frequent birth mainly in rural area, due to repeated pregnancies do not have time to replenish their iron stores before their next pregnancywhich is similar to study by[1,5]. PIH & post dated pregnancy among the unbooked patients are factors that lead to poor outcomes in the infant and the mother consistent with others study[1,5] Pregnancy outcomes in the unbooked mothers were significantly poorer than in the booked mothers. higher proportion of spontaneous vaginal delivery among the unbooked cases compared to booked (45.45% vs.41.38%).Because Admission of unbooked patients in late 2nd stage of labour similar to study by [1] .In present study the incidence of emergency caesarean section was significantly lower in the unbooked mothers compared to booked mothers (38.64% vs. 48.28%). The reason could be: 1. Many of the booked patients with complications like pregnancy induced hypertension, post caesarean status, primigravida with breech presentation attends labour room earlier and at the slightest and earlier detection of deviation from normal labour pattern undergo

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caesarean section. 2. Many of the booked patients had associated risk factors in the form of once or twice previous caesarean section, bad obstetric history, elderly primigravida not willing for vaginal birth, cephalo pelvic disproportion and contracted pelvis. Such cases were being planned for elective caesarean section but had to be taken as emergency cases as they came in early labour thereby increasing the caesarean section rate in booked mothers.

Maternal mortality was about three times more common in unbooked patients than in booked patients, while perinatal mortality was 5.3 times more commoner in unbooked patients than in booked patients.[5] Overall maternal morbidity was 29.41% and the difference was statistically significant between the two groups. The commonest maternal morbidity observed in this study was major haemorrhage due to atonic PPH.This is consistent with other studies[7-11] The reason may be women developed complications during labour and puerperium. Because of poor utilization of prenatal care (less than 30%) as one of the contributing factors also late referral from primary health centre, or, failure to approach a health facility for emergency obstetrical care leads to the high obstetric mortality and morbidity. Lack of prenatal care was found associated with increased perinatal morbidity and mortality Frequency of birth asphyxia, LBW, MSAF, NICU admissions were significantly higher in unbooked mothers, as was the perinatal mortality rate. No case of intrauterine fetal demise was noted in the booked group, which again highlights the importance of antenatal care. Lack of antenatal care was associated with higher incidence of birth asphyxia which is similar to the study done by [12-15]

Conclusion:

There is a positive correlation between unbooked mothers with adverse feto-maternal outcome. Proper antenatal care and institutional deliveries enable obstetricians to diagnose complications at an early stage and early management results in better outcome.Prenatal care aims to identify high risk pregnancies and to prevent and manage problems and factors that adversely affect the health of the mother and infant. Therefore, Proper utilisation of the recently introduced health facilities by government of India & private sectors results in good outcome.

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Conflict of Interest - Nil

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