



COMPARATIVE STUDY OF MATERNAL COMPLICATIONS AND PERINATAL OUTCOME IN BOOKED AND UN-BOOKED WOMEN.

Obstetrics and Gynaecology

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ABSTRACT

Introduction-Need for special care during pregnancy is a well understood since few centuries and is mentioned in Sushruta samhita. Ideally antenatal care should begin soon after conception and continue throughout pregnancy. Unfortunately, significant proportion of women still remain deprived of good antenatal care in India.

Methodology: A prospective facility based observational study was conducted over a period of one years from October 2020 to September 2021 to find out the maternal complications and perinatal outcome in 1200 pregnant women (600 each from booked and un-booked group) coming for delivery to Pravara Rural Hospital, Loni.

Results: A statistically significant higher incidence of antepartum haemorrhage, anaemia and preeclampsia/eclampsia) was observed in un-booked cases as compared to booked cases. Babies of un-booked mothers were two times more likely to have asphyxia, stillbirths and early neonatal deaths.

Conclusion- Antenatal care is the single most effective and proven strategy that ensures optimum pregnancy outcome.

KEYWORDS

Maternal complications, perinatal outcome, booked pregnancies, un-booked pregnancies, rural India.

INTRODUCTION

Antenatal care in its widest sense is not a modern concept. Description of special care in pregnancy is mentioned in Sushruta Samhita. The primary aim is to achieve at the end of pregnancy, a healthy mother and healthy child.¹ Ideally this should begin soon after conception and continue throughout pregnancy. It is unfortunate that, in India over 95% of maternal deaths occur among women who have never had antenatal care.² The leading cause of this grim outcome continues to be, haemorrhage, anemia, pre-eclampsia and infections which can be prevented, if the woman had good antenatal care.³ Antenatal care has significant influence on behaviour of pregnancy and its outcome.⁴ Lack or inadequate antenatal care results into higher maternal morbidity, mortality and perinatal mortality. Hence, the present study was conducted to compare the, maternal complications and perinatal outcome in booked women and un-booked women, who subsequently delivered at a tertiary care hospital of rural India.

MATERIAL & METHODS:

A prospective facility based observational study was conducted in the Department of Obstetrics and Gynaecology of Rural Medical College and Pravara Rural Hospital- a rural tertiary level health care referral centre in Loni, Maharashtra, India over a period of two years from October 2020 to September 2021. A consecutive 800 women, who were booked and equal numbers of un-booked women coming for delivery after 28 weeks of pregnancy to Pravara Rural Hospital, Loni during above mentioned period, were included in the study. Total of 1200 women (600 each from booked and un-booked group) were analysed with the special emphasis on maternal complications and perinatal outcomes. Outcomes of pregnancies of women booked for

antenatal care were compared with that of un-booked women, who delivered at Pravara Rural Hospital, Loni. Booked cases included those women who had attended antenatal clinic for minimum four times. Un-booked cases included those women who had never attended an antenatal clinic and those who had only less than four antenatal visits. Results were analysed by using percentage and proportion. The strength of associations was determined through odds-ratio (OR) with 95% confidence interval (CI). Associations were considered statistically significant at the $p \leq 0.05$ level.

RESULTS

A statistically significant higher incidence of antepartum haemorrhage (odds-ratio [OR] 0.1494, 95% confidence interval [CI] 0.062–0.356, $p < 0.0001$); anaemia (OR 0.098, 95% CI 0.073–0.131, $p < 0.0001$) and preeclampsia/eclampsia (OR 0.1588, 95% CI 0.108–0.232, $p < 0.0001$) was observed in un-booked cases as compared to booked cases. As regards to mode of delivery, it was observed that, un-booked women were half more likely to have spontaneous vaginal delivery than booked women (OR 3.544, 95% CI 2.681–4.685, $p < 0.0001$).

It was observed that un-booked women were nearly twice as likely as booked women to deliver preterm babies (OR 0.6332, 95% CI 0.465–0.860, $p < 0.0043$). Babies of un-booked mothers were two times more likely to have asphyxia as indicated by an Apgar score of < 7 at one minute (OR 1.143, 95% CI 0.760–1.717, $p = 0.5889$). significant difference between the occurrence of intrauterine death (OR 0.1709, 95% CI 0.091–0.320, $p < 0.0001$) and early neonatal death (OR 0.3257, 95% CI 0.175–0.604, $p = 0.0003$) among booked and un-booked women. (Table 1)

Table 1: Maternal Complications And Perinatal Outcome In Booked And Un-booked Women

Variables Booked	Booked women (n=600)	Un-booked women (n=600)	Odds ratio	95%CI	p value
1.Pregnancy complications					
Ante-partum Haemorrhage	06 (1.00)	38 (6.33)	0.1494	0.062 – 0.356	$< 0.0001^{\wedge}$
Pregnancy induced HTN	02 (0.33)	10 (1.66)	0.1973	0.043 – 0.904	0.0376 $^{\wedge}$
Post-partum Haemorrhage	06 (1.00)	15 (2.50)	0.3939	0.151 – 1.023	0.0758 $^{\wedge}$
Anaemia	251 (41.83)	528 (88.0)	0.0980	0.073 – 0.131	$< 0.0001^{\#}$
Preeclampsia/Eclampsia	36 (6.00)	172 (28.7)	0.1588	0.108 – 0.232	$< 0.0001^{\#}$
2. Mode of delivery					
Spontaneous vaginal delivery	511 (85.17)	371 (61.83)	3.544	2.681 – 4.685	< 0.0001
3-Pregnancy outcomes					
Preterm delivery	82 (13.66)	120 (20.0)	0.6332	0.465 – 0.860	0.0043 $^{\#}$
Maternal mortality	01 (0.16)	09 (2.50)	0.0651	0.085 – 0.494	0.0005 $^{\wedge}$

4. Apgar score (< 7) 1 minute	100 (16.66)	210 (35.0)	1.143	0.760 – 1.717	0.5889
5. Perinatal mortality					
Intrauterine foetal death	12 (2.00)	64 (10.66)	0.1709	0.091 – 0.320	<0.0001 [^]
Still birth	03 (0.50)	11 (1.83)	0.2691	0.074 – 0.969	0.0559 [^]
Early neonatal death	14 (2.33)	41 (6.83)	0.3257	0.175 – 0.604	0.0003 [^]

[^] - Fisher's Exact Test # - Chi-square test with continuity correction. (Figures in parenthesis indicates percentage)

DISCUSSION

The main objective of antenatal care is to ensure good health for every expectant mother and to enable her to have a normal delivery; so that she can take home a healthy baby. The aim is to preserve the physiological aspects of pregnancy and labor and to prevent all that is pathological. Therefore, regular antenatal visits are necessary to detect the pathological changes at the earliest.

In the present study, it was observed that, more number of teenage pregnancies remained un-booked. In the present study, the prevalence of anaemia was two times more (41.83% vs 88.0%) in unbooked cases as compared to booked cases. Poor health seeking behaviour, long distance from health facility, loss of daily wages and non-availability of trained persons at primary health care facility, were some of the factors responsible for un-booked status during pregnancy in rural area. Roskowaski,⁵ Donald Ian⁶ and Awasthi A.⁷ reported similar observations in their studies. These authors also reported a positive co-relationship between maternal anaemia and low birth weight baby, prematurity, postpartum haemorrhage and puerperal sepsis.

In the present study, the incidence and severity of pre-eclampsia was three to four times more in un-booked cases as compared to booked cases. These findings are supported by others.^{6,8-10} Maternal and perinatal outcome in pre-eclampsia was better in booked cases as compared to un-booked. The incidence of complications due to antepartum haemorrhage was higher in un-booked cases as compared to booked cases. Similar observations were noted by Mukherjee et al¹¹, Khosla et al¹² and Bhide et al.¹³ In the present study, it was observed that, the women who came for regular antenatal checkups had normal vaginal delivery as compared to their un-booked counterpart. The need for operative intervention was significantly more in un-booked women. The findings in this study were corroborated by earlier studies.¹⁴⁻¹⁶

In the present study, there were ten maternal deaths, of which only one was from booked women and remaining nine were from un-booked women. Postpartum haemorrhage and infective hepatitis were the commonest direct and indirect causes of maternal mortality respectively. Maternal anaemia was indirectly responsible for death in majority of cases. Maternal mortality remains an issue of high research and programmatic interest in India and many parts of the developing world. Similarly, studies by Olatunji et al¹⁷, Agarwal et al,¹⁸ Shrotri et al,¹⁹ Baul et al,²⁰ Ekwempu C²¹ and Briggs N²² had reported high prevalence of maternal mortality among un-booked women.

In the present study, the incidence of low birth babies (LBW) and prematurity was two and three times more in un-booked women respectively. Thomas et al¹⁶ and Murthy et al²³ reported similar findings in their studies. In the present study, prevalence of stillbirths and neonatal deaths was two to three times more in un-booked women as compared to booked women. Prematurity, IUGR, cord accidents, birth asphyxia and neonatal sepsis were common causes for perinatal mortality among un-booked women. Studies by Indra et al,²⁴ Rangnekar et al,²⁵ Lopez et al,²⁶ and Shah et al²⁷ had reported similar findings.

CONCLUSION:

Antenatal care is the single most effective and proven strategy that ensures optimum pregnancy outcome. For variety of reasons, large numbers of women especially in rural area, remain deprived of their reproductive health rights. Ultimately, these women suffer from various pregnancy and delivery related complications, leading to increase in morbidity and mortality. In the present study, we observed that the maternal and perinatal outcome was unsatisfactory in women, who did not attend antenatal clinic. If we wish to achieve the Sustainable development goals (SDG 2030), in the given time frame, it would be essential to find out the solutions for the various bottlenecks in the service delivery system.

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