

The Influence of Antenatal Care on Pregnancy Outcome in Primigravidae

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ABSTRACT

Aim: To determine the mode of delivery in booked and un-booked primigravidae and determine the fetomaternal outcome in both groups.

Methods: This descriptive case series study was carried out at Department of Obstetrics and Gynaecology, Unit-I, Services Hospital, Lahore from 27-9-2007 to 26-3-2008. All booked primigravidas presenting in Labour Room through OPD or Emergency and un-booked primigravidas presenting in Labour Room through OPD or Emergency were included. All pregnant women with previous pregnancies resulting in either a live-birth or a miscarriage were excluded.

Results: Mean age was 25.3 ± 1.9 years and 24.1 ± 2.1 years in group A and B respectively. 36 (72%) in group A, delivered by spontaneous vaginal delivery and 15(30%) in group B. Caesarean section was carried out in 12(24%), patients from group A and 28(56%), in group B. Assisted vaginal delivery was performed in 2(4%) patients from group A and 7(14%) patients in group B. Regarding maternal morbidity, 1(2%), in group A, and 7(14%) patients in group B had postpartum haemorrhage. In group B, 3(6%) women suffered from pyrexia, 5(10%), had wound infection and gaped episiotomy/hematoma occurred in 2(4%) patients.

Conclusion: Pregnancy complications were more prevalent in unbooked patients. These included anaemia, pregnancy induced hypertension and gestational diabetes. Intrapartum and postpartum complications were also higher in the un-booked group. Booked patients had a better perinatal outcome.

Keywords: Antenatal care, maternal outcome, fetal outcome

INTRODUCTION

Antenatal care (defined as the medical attention received from the time of conception upto, but not including labour and delivery), could positively influence birth outcomes through three main channels; 1) behavioral [elimination of harmful habits such as smoking], 2) nutritional improvement of mothers' nutritional intake and 3) medical (reduction of morbidity risks).^{1,2} Evidence-based medicine indicates that most pregnancy related maternal deaths could be averted with access to professional care during pregnancy, childbirth and the puerperium, as well as access to emergency obstetric care in the event of complications.³ The number of antenatal visits varies between different countries. In our setup, the routine antenatal visits' programme is monthly for 28 weeks, fortnightly from 28-36 weeks and then weekly upto 40 weeks. In case of high risk pregnancies i.e. pregnancies complicated by anemia, cardiac disease, lung diseases, hypertension, renal disease, and diabetes, more frequent visits are required in a tertiary care hospital. Women should book as soon as pregnancy is detected which could

be as early as six weeks of gestation in order to be screened for any pregnancy related problems, to review the risk of the pregnancy and to make provision for medications that may improve the pregnancy outcome.⁴ The goal of antenatal care however, is that the care provided needs to be appropriate and not excessive, based on each pregnant woman's specific needs and wishes. By educating the community at the grass-roots level about the benefits of receiving antenatal care and supervised delivery by skilled birth attendants, will have a significant impact on improving pregnancy outcomes.⁵ In order for health institutions in Pakistan to contribute towards the achievement of the Millenium Development Goals (MDG) with regards to maternal health, there is a need for research on the local causes of and factors influencing adverse maternal outcomes. This would enable policy makers to know where to focus as they distribute resources. In this study, a comparison was made between booked and unbooked primigravidae for maternal and fetal morbidity and mortality. The aim was to prove that through regular antenatal care and supervised delivery, the risks of maternal and perinatal complications can be reduced and the health of mother and baby enhanced.

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PATIENTS AND METHODS

This descriptive case series study was carried out at Department of Obstetrics and Gynaecology, Unit-I, Services Hospital, Lahore from 27-9-2007 to 26-3-2008. A total of one hundred primigravidae were selected and divided into two groups; 50 patients were in the booked group (Group A) and 50 un-booked patients (Group B). All booked primigravidae presenting in Labour Room through OPD or Emergency and un-booked primigravidae presenting in Labour Room through OPD or Emergency were included. All pregnant women with previous pregnancies resulting in either a live-birth or a miscarriage were excluded. Booked mothers were defined as those who had at least two antenatal care visits at our hospital, while the un-booked mothers referred to those who received no antenatal care at all prior to delivery, and patients referred as emergencies from other facilities or "dais". Information was obtained from a combination of admission and discharge registers, history files, labor and delivery records and obstetric theatre records. Data were collected on age, parity, educational status, booking status, gestational age at delivery, mode of delivery, maternal presenting complaints, intrapartum complications, and Apgar score of the infants. Data analysis was done using SPSS-15. Frequencies of the outcome indicators were determined. Student's t test was used to test for associations between variables of interest. P value <0.05 considered as significant.

RESULTS

Majority of the women in both groups were between 20-25 years of age. The mean age was 25.3±1.9 years and 24.1±2.1 years in group A and B respectively. Most primigravidae in both groups presented between 37 and 40 weeks of gestation. The mean gestational was observed 39.5±2.1 weeks and 38.1±1.9 weeks in both groups respectively. Labour pains were the major presenting complaints in Group A (82%) and B (40%). Fetal movements were decreased in 2 patients (4%) in group A and 8 patients (16%) in group B. Seven patients (14%) in group A and 19 (38%) in group B presented with rupture of membranes.

Table 1: Age distribution of patients (n=100)

Age (years)	Booked cases		Un-booked cases	
	No.	%	No.	%
<20	2	4.0	5	10.0
21-25	38	76.0	31	62.0
26-30	9	18.0	10	20.0
>30	1	2.0	4	8.0

p>0.0635

Table 2: Distribution of gestational age (weeks)

Gestational age (weeks)	Booked cases		Un-booked cases	
	No.	%	No.	%
<37	2	4.0	15	30.0
38-40	44	88.0	21	42.0
>41	4	8.0	14	28.0

p>0.0725

Table 3: Distribution of cases by associated complaints

Associated complaints	Booked cases		Un-booked cases	
	No.	%	No.	%
Pain	41	82.0	20	40
Decreased fetal movements	2	4.0	8	16
Leaking per vaginum	7	14.0	19	38
Bleeding per vaginum	-	-	3	6.0

Table 4: Distribution of cases by mode of delivery

Mode of delivery	Booked cases		Un-booked cases	
	No.	%	No.	%
Normal vaginal delivery	36	72.0	15	30.0
Caesarean section	12	24.0	28	56.0
Instrumental/assisted delivery	2	4.0	7	14.0

Table 5: Distribution of cases by Apgar score

Apgar score	Booked cases		Un-booked cases	
	No.	%	No.	%
< 5	2	4.0	15	30.0
> 5	48	96.0	35	70.0

Antepartum haemorrhage occurred in 3 patients in Group B and none in Group A. Out of 50 booked primigravidae, 36 (72%) women delivered spontaneous vaginal delivery and 15 (30%) were delivered by normally in group B. Caesarean section was carried out in 12 (24%) patients from group A and 28(56%) patients in group B. Instrumental/assisted vaginal delivery was performed in 2 (4%) patients from group A and 7 (14%) patients from group B. On comparison of Apgar scores, two (4%) patients in group A and 15 (30%) in group B had Apgar score ≤5. Intrapartum complications occurred more in the unbooked group; cephalopelvic disproportion was found in 10 (20%) unbooked patients who subsequently underwent emergency caesarean sections, prolonged labour in 7 (14%) retained placenta in 5 (10%), pre-eclampsia/eclampsia developed in 6 (12%) and uterine rupture in 1 (2%) women.

Table 6: Distribution of cases by complication of labour

Complication of labour	Booked cases		Un-booked cases	
	No.	%	No.	%
CPD	-	-	10	20
Prolonged labour	1	2.0	7	14
Retained placenta	-	-	5	10
Pre-eclampsia/eclampsia	-	-	6	12
Uterine rupture	-	-	1	2.0

DISCUSSION

Women's attitude to antenatal care seems to be influenced by their schooling, since more years of education of a pregnant woman is associated with a choice for antenatal care attendance. In our study also, there was a high (40%) percentage of illiterate women in the unbooked group compared to only 8% in the booked group. This positive effect of education suggests that through informative campaigns, pregnant women can be made more aware of the importance of attending antenatal clinics for their own health and that of their newborn children.⁶ In the present study, unbooked patients had more antenatal complications which included hypertension (34%) anemia (24%), diabetes mellitus (6%), premature rupture of membranes (14%) and antepartum hemorrhage (6%). These figures are comparable with a study carried out by Ekwempu⁷. Similarly, Bibi et al⁸ also carried out a study in which diabetes mellitus was found in 8% women who were unbooked. The research findings in other studies such as that conducted in Nigeria as reported by Owolabi et al⁹ also indicated that compared with booked mothers, unbooked mothers had a higher incidence of antepartum haemorrhage, anaemia and pre-eclampsia/eclampsia.

Owolabi has also pointed out in his study that unbooked mothers were half as likely as booked mothers to deliver by spontaneous vaginal delivery.⁹ Ekwempu⁷ demonstrated that in unbooked patients, the operative delivery rate was 64%, which is consistent with our study. The latter study concurs with studies which suggest that improved antenatal care may reduce intrapartum complications such as previously undiagnosed cephalopelvic disproportion, prolonged labour, and uterine rupture. Mothers who do not receive ANC are three times more likely to give birth to a low birth weight baby and their baby is five times more likely to die.¹⁰ Similarly in a study by Tucker et al, unbooked mothers were five times more likely to have preterm delivery, three times more likely to have low birth weight babies and twice as likely to have postpartum haemorrhage.¹¹ In our study also, the incidence of low birth weight babies in unbooked patients was 17% vs 2% in the booked patients. The percentage of babies born with low Apgar scores in Group B was 30% vs 4% in the

booked group. The study by Owolabi et al⁹ also reported that unbooked mothers were three times more likely to have babies with birth asphyxia. This highlights the fact that deficient birth outcomes entail greater morbidity and mortality risks and higher probabilities of poor future health. For these reasons, it is imperative for women to have appropriate and adequate antenatal care to enable early identification and management of risk factors associated with adverse pregnancy outcomes.

CONCLUSION

Unbooked patients are relatively high risk patients and more at risk of adverse fetal and maternal outcomes than booked patients. Pregnancy complications were most prevalent in unbooked patients. These included anaemia, pregnancy induced hypertension, and fetal malpresentations. Labour complications were also higher in the unbooked group. Booked patients had better perinatal outcomes.

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