

Research Article

Inadequate antenatal care in women attending tertiary care hospital for delivery: Causes and consequences

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Abstract

Aim: To study the various causes of inadequate antenatal care in pregnant females and to evaluate the effect of inadequate antenatal care on delivery outcome.

Methods: This was a case control study in which 220 women with inadequate antenatal care and 1780 women with adequate care presenting to the Department of obstetrics and gynecology, LNJP hospital, MAMC, New Delhi were evaluated in the immediate postpartum period with the help of a questionnaire to evaluate patient related factors and quality of care issues in inadequate antenatal care. The study was conducted from July 2011 to July 2012.

Results: In the 220 women with inadequate antenatal care, patient related factors were responsible in 92.1% cases and in 7.9% there was deficiency in the quality of antenatal care they received. Fifty five (24.09%) women in the inadequate antenatal care had no knowledge about any component of antenatal care. Rate of maternal complications like eclampsia ($p < 0.0001$), severe anemia ($p < 0.0001$), obstructed labour ($p = 0.012$) and postpartum haemorrhage ($p < 0.006$) were significantly higher in this group. Admission in intensive care unit due to obstetric complications (18 vs 3, $p < 0.0001$), maternal mortality (4 vs 0; $p < 0.0001$) and perinatal complications ($p < 0.001$) were significantly higher in women with inadequate antenatal care.

Conclusion: The inadequate antenatal care was present in 11% of the women in the study group. The commonest patient related factors associated were illiteracy, low socioeconomic status and unawareness. Life threatening maternal complications, ICU admissions and maternal mortality as well as perinatal morbidity and mortality was significantly associated with inadequate antenatal care.

Keywords: : inadequate antenatal care

1. Introduction

Promotion of maternal and child health has been one of the most important components of the Family Welfare Programme of the Government of India and the National Population Policy-2000¹ reiterates the government's commitment to the safe motherhood program within the wider context of reproductive health. Maternal care includes care during pregnancy and should begin from the early stages of pregnancy. Women can access antenatal care services either by visiting a health center where such services are available or from health workers during their domiciliary visits. The former gives an idea about the voluntary utilization of the services by women while the latter is related to the quality aspect of the services. One of the most important component of antenatal care is to offer information and advice to women about pregnancy related complications and possible curative measures for early detection and management of complications. Antenatal care can also play a critical role in preparing a woman and her family for birth by establishing confidence between the woman and her health care provider and by individualizing promotional health messages.²

Further antenatal visits may raise awareness about the need for care during delivery³ or give women and their families a familiarity with health facilities that enables them to seek help more efficiently during a crisis.⁴

However, uptake of these services is far from universal even in settings where they are widely available. While antenatal care is considered essential for the health of both the mother and the child, it is important to analyze the possible factors contributing to its utilization. This study is based upon the observations of the knowledge and attitude towards the utilization of the antenatal care services of the women who came unbooked or referred to a tertiary hospital. The objective of this study is to study the various causes of inadequate antenatal care in pregnant females and its effect on maternal and perinatal morbidity and mortality.

2. Methods

This was a case control study in which 220 women with inadequate antenatal care and 1780 women with adequate care presenting to the Department of obstetrics and gynecology, Lok Nayak Jai Prakash hospital, Maulana Azad Medical College, New Delhi were evaluated in the immediate postpartum period with the help of a questionnaire to evaluate patient related factors and quality of care issues in inadequate antenatal care. Adequate antenatal care was defined as atleast 4 antenatal visits (Cochrane review 2009), while women with less than 4 or no antenatal visits were included in inadequate antenatal care group. Each visit of antenatal care should consist of: measurement of blood pressure, testing of urine for bacteriuria and proteinuria, and blood tests to detect syphilis and severe anemia

The study was conducted from July 2011 to July 2012. Those patients who had no antenatal visit or were referred from a primary or secondary centre and were having inadequate antenatal care were included in the study. The questionnaire included the questions pertaining to women's perceptions, opinions, knowledge, attitudes etc regarding the antenatal care. They were open ended and the probable responses were listed to facilitate recording and minimizing interview time. No leading or suggestive questions were asked in order to avoid courteous responses and over estimations. Women were interviewed in the postnatal or postoperative ward in the department of obstetrics and gynecology, LNH, MAMC in the immediate postpartum period, after taking proper informed consent. The obstetric and perinatal outcome of the studied group was recorded.

2.1 Statistical Analysis

All the data was statistically analyzed using Statistical Package for the Social Sciences (SPSS) statistical software package (SPSS Inc., Chicago, IL, version 17.0 for Windows). Qualitative data was analysed using Chi-square or Fischer exact test.

3. Results

A total of 2000 women were included in this study, with 220 women having inadequate or no antenatal care. These women in inadequate antenatal group (11% of the study group) were either completely unbooked and had presented for the first time in the department at the time of labour, or were referred from a primary or secondary centre on first antenatal visit in late third trimester due to any complication. The demographic data of the two study groups is presented in Table 1. The mean age of women with adequate antenatal care was significantly lower than of those with inadequate care ($25 \pm 2SD$ vs $26 \pm 6SD$; $p < 0.001$). There was a statistically significant reduction in the proportion of women obtaining antenatal care services with increasing age ($P = 0.003$), parity ($P = 0.021$) and number of living children ($P = 0.001$). However, no association was observed with other factors like outcome of previous pregnancy and presence of health facility in their locality.

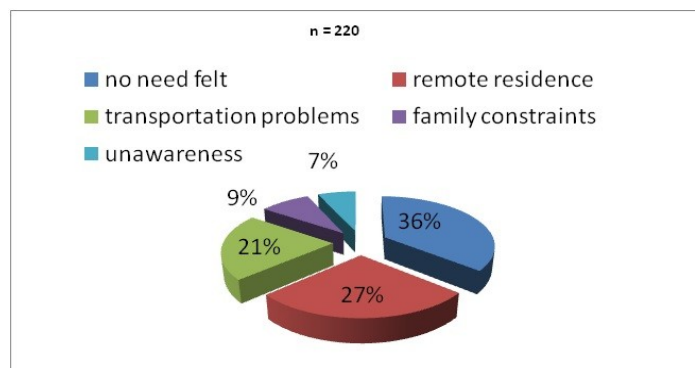
The level of literacy plays a big role in the knowledge and utilization of the antenatal care services, as is evident by the figure of 62% women in inadequate care group, who were illiterate, and rest had education below senior secondary school. The level of literacy was significantly higher ($p < 0.01$) in women having adequate antenatal care. Eighty seven percent of women with inadequate care belonged to low socioeconomic status according to modified Kuppuswamy scale. Women from the rural areas in and around Delhi constitute a total of 75.9% in this group in contrast to 49% in adequate care group, reflecting the fact that women in rural areas in India are still lagging a lot behind in terms of social awareness.

Table 1: Demographic characteristics of the two study groups

Demographic characteristics	Inadequate antenatal care (n=220; %)	Adequate antenatal care (n=1780; %)
Parity		
-Primi	24	56
-2	32	37
-3	39	6
->=4	5	1
Literacy		
-Illiterate	62	24
-primary	34	54
-secondary	6	19
-higher	0	3
Residence		
-Rural	76	31
-Urban	24	69
Socio-economic status		
-Low	87	49
-Medium	13	47
-High	0	4

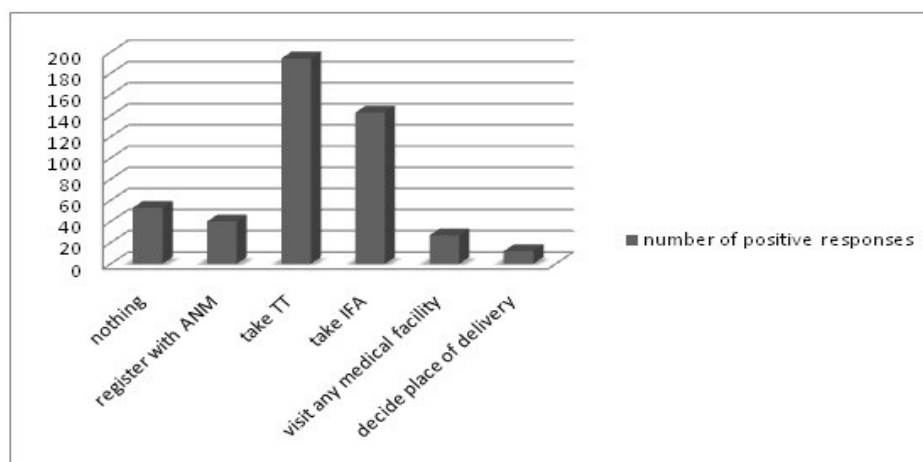
The causes of inadequate antenatal care were grouped into 2 categories: patient related factors and deficiency in the quality of care they received. In 92.1% cases, patient related factors were responsible and in 7.9% there was deficiency in the quality of antenatal care they received.

Patient related factors included the various reasons which they gave for not seeking antenatal care are given in figure 1.

Figure 1: Reasons for not seeking antenatal care

The second group included the women who sought antenatal care, but that was incomplete due to deficiency in the quality of antenatal care they received, and it formed 7.9% of the total study population. The care by unqualified person(69.4%), inadequate services by qualified persons(27.7%) and others(2.7%) formed the major reasons for deficient quality of antenatal services.

Information on women's knowledge and perception about what needs to be done during pregnancy was obtained by asking women in the inadequate antenatal care group the question what do you think should be done when pregnant. About one third of the women in this study expressed that nothing is to be done when they are pregnant. Majority of women expressed the need for taking 2 doses of tetanus toxoid (TT) injection and iron folic acid (IFA) tablets during pregnancy (Figure 2). The need to register with ANM or to visit any health facility, primary or higher level, was mentioned by only 7% women, comprising majority of those who had inadequate antenatal care. Only a small percentage of women (9%) had decided about the place of delivery. Out of 220 women in inadequate ANC group, 99 (45%) had no awareness about the pregnancy complications.

Figure 2: Awareness about the content of ANC in women with inadequate antenatal care

The rate of obstetric complications, both maternal and perinatal, were significantly higher in women with inadequate ANC, as depicted in Table 2.

Table 2: Maternal complications in the two groups

Maternal complication	Inadequate antenatal care (%)	Adequate antenatal care (%)	p value
Eclampsia	2.7	0	<0.0001 *
Abruptio placenta	5	1.1	0.005 *
Placenta previa	5.4	1.06	<0.001 *
Severe anemia	8.2	0.1	<0.0001 *
CHF	2.3	0	<0.0001 *
Complications of severe PIH	5.4	0.1	<0.001 *
DIC	0.4	0.05	0.012 *
PPH	7.2	0.4	<0.0001 *
Rupture uterus	0.9	0	0.012 *
Scar dehiscence	3.6	0.2	<0.0001 *
Obstructed labour	0.9	0	0.012 *

The rate of intensive care unit admissions due to obstetric complications was significantly higher (18 vs 3, $p < 0.0001$) in women in inadequate care group. A large proportion of ICU admission was due to obstetric haemorrhage (3.6%); other causes were congestive heart failure (2.2%), complications of severe pre-eclampsia (1.4%), dengue shock syndrome (0.4%) and hepatic encephalopathy (0.4%). In adequate ANC group, the causes of ICU admissions were obstetric haemorrhage (0.1%) and complications of severe pre-eclampsia (0.05%).

Maternal mortality occurred in inadequate ANC group (1.8%) only with 2 deaths due to congestive heart failure in severe anemia, and one each due to dengue shock syndrome and hepatic encephalopathy.

The perinatal outcome was significantly adverse in the women with inadequate antenatal care, as shown in the Table 3.

Table 3: Comparison of adverse perinatal outcome in the two groups

Perinatal outcome	Inadequate antenatal care(n=220; %)	Adequate antenatal care (n=1780; %)	P value
Undiagnosed gross congenital anomalies	2.7	0.1	<0.0001*
Low birth weight	15.4	0.4	<0.0001*
Stillbirth	1.8	0.2	0.007*
Meconium stained liquor	17.1	3.9	<0.0001*
Undiagnosed breech	1.8	0	0.0001*
NICU admission	12.7	0.8	<0.0001*
Preterm	8.1	5.2	0.12

4. Discussion

Antenatal care allows for the management of pregnancy, detection and treatment of complications, and promotion of good health. However, women rarely perceive childbearing as problematic and therefore do not seek care. This affects the utilization of maternal health services in regions of the country where poverty and illiteracy are widespread. But the possibility of complications occurring is there and routine checks are highly desirable.⁵

In this study, most of the women with inadequate antenatal care had parity>1, belonged to rural areas, had low socioeconomic class, had low educational level. Results were similar to the study done by Das et al in 2001.⁶

Majority of women having inadequate or no antenatal care felt no need for antenatal care services during pregnancy. This is to be emphasized that repeated information, education, and communication (IEC) activities are required to motivate pregnant women to register early for antenatal care.

Das et al concluded that utilization of maternal services in rural areas is mainly driven by socioeconomic factors such as media exposure, standard of living and education, and much less by physical access and availability of health care and family welfare services.⁶ In this study, most of the women belonged to rural areas, had low socioeconomic class and low educational level, thus following the above trend.

Our study indicated that knowledge and awareness about what needs to be done when pregnant is low in women with no/inadequate antenatal care.. It is encouraging to note that pregnant women are aware of inj. TT and IFA supplementation. This is mainly because government health functionaries provide these but carry out very few other recommended procedures.⁷

98% of women having no antenatal care expressed a total lack of knowledge of getting registered to an ANM or Any health centre during pregnancy, making it a matter of great concern. Lack of concern about safe delivery was seen in large percentage of women who also did not feel the need to decide about the place of delivery beforehand.

Life threatening maternal complications, ICU admissions and maternal mortality was significantly associated with inadequate antenatal care. Significant association was also found between inadequate antenatal care and incidence of adverse perinatal outcome like low birth weight(esp extremely LBW), meconium stained liquor, neonatal NICU admissions.

Perception about problems that could occur during pregnancy was significantly higher in women who had any antenatal care services than in those who did not have it. Even though a strong association was observed between increased knowledge and awareness with antenatal care services, it is difficult to comment whether it led them to access antenatal care services or vice versa. Low level of knowledge of antenatal well being and desire for hospital or assisted delivery was also observed in other studies.⁸ It has been suggested that one of the best things that antenatal care could accomplish is to influence women to have an institutional delivery with a trained attendant at birth, a factor known to promote child survival

and decrease maternal mortality. It may, therefore, be possible to promote institutional delivery by promoting antenatal check-ups and associated counseling.

5. Conclusion

There is a need for enhancing community awareness about the importance of registering with an ANM or health service early for antenatal care, educating women about early detection of complications during pregnancy and promptly seeking care, and about the importance of giving birth in a health facility. Hence, repeated information, education, and communication (IEC) activities are required to motivate pregnant women to register early for antenatal care, to influence women to have an institutional delivery with a trained attendant at birth and to promote institutional delivery by promoting antenatal check-ups and associated counseling.

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