

Reason for Hospitalization Among Antenatal Mothers- A Retrospective Cohort Study

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Abstract

Background: Prenatal hospital admission can be offered, in such a way complete assessment can be made or for increased foetal or maternal surveillance to diagnose any decline in the maternal or foetal condition which may necessitate medical interventions or lead to delivery. High-risk pregnancy is the condition that is complicated by the factors that unfavourably affect the pregnancy outcome-maternal or perinatal or both. The objective of the study was to assess the reason for hospitalization among the antenatal mothers. **Methods:** A retrospective cohort study was conducted to identify the reason for the admission of antenatal mothers in the selected maternity hospital, Puducherry. Data were retrieved from the admission register for the past one-month period (January to February 2019). Totally there were 358 admission out of which 303 mother's data were included for this study and 55 mother's data were excluded due to incomplete information **Results:** The major findings of the study showed the majority 207 (68.3%) had any type of risk during antenatal period and 96 (31.7%) of the mothers were healthy. The risk factors included gestational diabetic mellitus accounted for 52 (17.2%), Previous LSCS accounted for 38 (12.5%), Oligohydramnios/ Polyhydramnios accounted for 34 (11.2%), Gestational Hypertension accounted for 17 (5.6%), Hypothyroidism accounted for 17 (5.6%), Rh negative, diabetic mellitus and Intra uterine growth retardation accounted for 10 (3.3%) separately, Anaemia was accounted for 9 (3%), Pre-term accounted for 3 (1%), Fibroid, VDRL positive, Varicose vein, Cervical Incompetence, HIV and Syphilis accounted for 1 (3%) individually. There was a significant association with the bad obstetric history and risk factor for antenatal hospitalization. ($p < 0.01$). **Conclusion:** The study results highlighted and proved statistically that gestational diabetic mellitus was the chief cause for antenatal hospitalization and many others conditions associated and act as risk factors for antenatal mothers' admission. Hence, there is a need for pre-conceptual as well as prenatal counselling for mothers to prevent from the risk factors and identify them earlier and eventually to reduce maternal and foetal morbidity and mortality.

Keywords: Incidence, Presence, Predisposing factor, Determinant condition, Prenatal, Admission.

INTRODUCTION

Each year almost 529000 women die worldwide due to pregnancy related causes. For each death nearly 118 women suffer from life threatening events or severe acute morbidity [1]. Recent studies have revealed that still perinatal death and morbidity is high in India. It shows high risk gestation is one of the leading causes

to increase the perinatal mortality and morbidity.

While assessing the risk of any pregnancy some of the medical history like age, parity, social class and past obstetric history etc should be taken into account [1]. Early detection of high-risk pregnancy followed by special intensive care will show a significant change in the perinatal

outcome. Treating high risk pregnancies with extra attention and proper care will give a significant decrease in the maternal mortality and morbidity [2].

Prenatal hospitalizations may be offered, so that an in-depth assessment can be performed or for increased foetal or maternal surveillance to detect any deterioration in the maternal or foetal condition that may require medical interventions or lead to delivery [3,4]. Perinatal consequence can be changed significantly by early recognition followed by special intensive care of high-risk pregnancies. All prenatal period should therefore be assessed to know whether there are or will be risk factors. Age, parity, social class, mothers who have a history of chronic disease (diabetes, hypertension, heart disease, etc.) or those with a history of previous pregnancy problems (abortion and still birth) and also multiple pregnancies, gestational age under 18 or above 35 years, pregnancy more than 4 times are some of the factors that should be taken into account while assessing the risk for any expecting woman [5,6].

Satisfactory prenatal care recognizes, forecasts and manages pregnancy complications to safeguard acceptable maternal and perinatal results [7]. High-risk pregnancy is defined as one which is complicated by a factor that badly affect the pregnancy outcome-maternal or perinatal or both. Among the mothers seen in antenatal period, only 10-30% of mothers are been classified as high risk, out of those mothers, 70 -80% end up with perinatal mortality or morbidity. One of the most important public health issues in the developing countries is perinatal mortality [8]. The risk factors may be pre-existing factors prior to or at the time of antenatal visit or may develop subsequently in the ongoing pregnancy. Almost 50 percent of all maternal complications & 60 percentage of all primary caesarean section arise from high risk group of cases [9].

Many studies proved that prenatal hospitalization may be a troublesome and worrying experience. Antenatal admission may also be used to restrict the pregnant women's physical activity, which is traditionally considered advantageous regardless of the lack of evidence to sustenance the reference of strict activity restriction in high-risk gestations to prevent approaching preterm labour [10-16]. Moreover, Prenatal hospitalization with strict movement restriction might cause worrying adverse effects for the expecting woman and her family and may worsen health in over-all as well as maternal health during gestation. On the other hand, there is a growing attention on the benefits of physical activity during pregnancy [17-23].

OBJECTIVES

- To assess and to identify the risk factors for hospitalization among antenatal mothers.
- To associate the risk factors with the selected demographic and obstetric variables.

METHODOLOGY

In order to achieve the objectives, a quantitative research approach was found to be appropriate. A Retrospective Cohort study was used. The research variable was risk factors for hospitalization among mothers in antenatal period. The setting was selected hospital, Puducherry. Population was all the mothers admitted during that period. Convenient sampling technique was used. Samples were selected those who had complete data in the record. Data was collected for the period of past one month as mentioned above were retrieved from the admission record. Prior permission was obtained from the concerned authority and it was assured that confidentiality will be maintained. There was total 358 admission during the above period but 303 data were retrieved and used for this study and 55 were excluded due to incomplete information. The data were calculated according to 2 sections of the tool. Section

A consisted of demographic and obstetric variables (Age Income, Obstetric score-Number of living children, Gravida, Parity, Abortion and Death) and Section B consisted of causes and risk factors for admission (Gestational diabetic mellitus, Gestational hypertension, Pre-term pregnancy, Rh- negative mothers, Hypothyroidism, Previous LSCS, Congenital anomalies of foetus, Anaemia, Oligo/ Poly hydramnios, Diabetic mellitus, Intrauterine foetal retardation, Fibroid uterus, VDRL positive, Varicose vein, Cervical incompetence, HIV, Syphilis). Among records of prenatal mothers, data for 358 subjects were retrieved from record of the hospital for one-month period between January and February 2019. From 358 data, 303 data were used for the study and analysed since remaining 55 data were incomplete in information. Descriptive and inferential statistics were used for analysis of research results.

RESULTS

In analyzing Age, majority 125 (41.3%) mothers were between 20-25 years of age, 120 (39.6%) mothers were between 26 and

30 years, 53 (17.5%) mothers were above 30 years of age and 5(1.7%) mothers were below 20 years of age. Regarding income, 124 (40.9%) mothers had income below Rs. 5000, 121 (39.9%) mothers had income between Rs. 5001-10,000, 39 (12.9%) mothers had income between Rs. 10,001-20,000, 19 (6.3) mothers had income below Rs. 5000. In analyzing Gravida, 146(48.2%) mothers were primigravid, 108 (35.6%) mothers were second gravida, 40 (13.2) mothers were third gravida, 6 (0.2%) mothers were fourth gravida, 2 (0.7%) mothers were sixth gravida and 1 (0.3%) mothers was fifth gravida. Regarding Live birth, 167 (55.1%) mothers were having no live children whereas 130 (42.9%) mothers were having one living child, 6 (2.0%) mothers were having two live children. With Abortion, 244 (80.9%) mothers had no history of abortion, 5 (14.9%) mothers had single abortion, 11(3.6%) mothers had two abortion, 2 (0.7%) mothers were had three abortion, 1(0.3%) mothers had 4 times of abortion. Whereas in respect to death of the baby, 5 (1.7%) mothers had one death of newborn in history. (table 1)

Table 1: Distribution of Research Variables

DEMOGRAPHIC VARIABLES		F	%
Age	<20 years	5	1.7
	20-25 years	125	41.3
	26-30 years	120	39.6
	>30 years	53	17.5
Income (in INR)	<5000	124	40.9
	5001-10,000	121	39.9
	10,001- 20,000	39	12.9
	>20,000	19	6.3
OBSTETRICAL VARIABLES			
Gravida	1	146	48.2
	2	108	35.6
	3	40	13.2
	4	6	2.0
	5	1	.3
	6	2	.7
Living children	0	167	55.1
	1	130	42.9
	2	6	2.0
Abortion	0	244	80.5
	1	45	14.9
	2	11	3.6
	3	2	.7
	4	1	.3
Death	0	298	98.3
	1	5	1.7

In relation to the reason for the admission in the hospital which highlighted that 207 (68.3%) mothers had admission due to some risk factor associated with pregnancy and 96

(31.7%) of the mothers were healthy and they were admitted for safe confinement figure 1. Various risk factors included for antenatal admission were showed in figure 2.

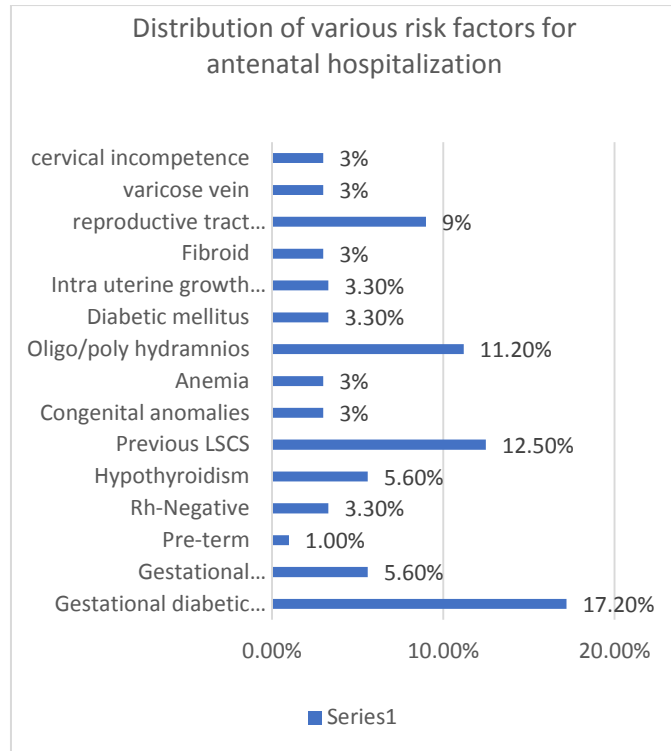


Figure 1: Prevalence of risk factors during antenatal admission

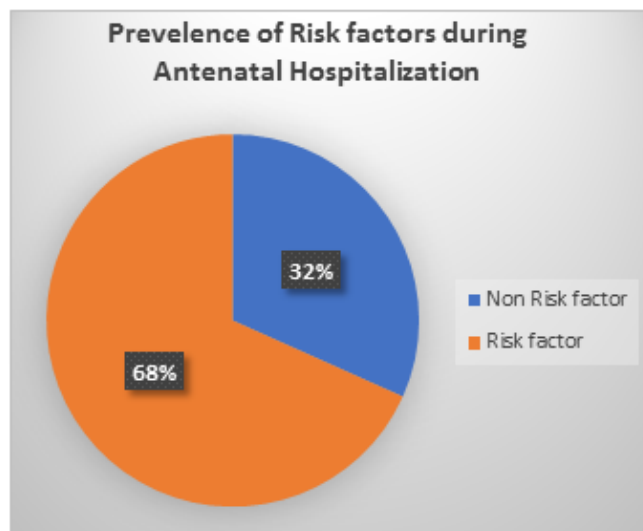


Figure 2: Distribution of Various Risk Factors for Antenatal Hospitalization

The variables like Gravida, para, number of abortions, and death of the baby had significant association for hospitalization of the mothers during

antenatal period ($p < 0.01$). Hence it has been found that Bad Obstetric History plays an important role in antenatal admission. (table:2)

Table 2: Association of Demographic and Obstetric Variables with the Risk Factors for Antenatal Hospitalization

Variables		F	%	Chi-Square
Age	<20 years	5	1.7	X²= 42.529 d.f= 45 p= 0.577
	20-25 years	125	41.3	
	26-30 years	120	39.6	
	>30 years	53	17.5	
Income	<5000	124	40.9	X²= 35.951 d.f= 45 p= 0.830
	5001-10,000	121	39.9	
	10,001- 20,000	39	12.9	
Gravida	1	146	48.2	X²= 391.74 d.f= 75 p= 0.000
	2	108	35.6	
	3	40	13.2	
	4	6	2.0	
	5	1	.3	
	6	2	.7	
Living children	0	167	55.1	X²= 77.91 d.f= 30 p= 0.000
	1	130	42.9	
	2	6	2.0	
	0	244	80.5	X²= 1.916 d.f= 1 p= 0.166
	1	45	14.9	
	2	11	3.6	
	4	1	.3	
Death	0	298	98.3	X²= 95.330 d.f= 15 p= 0.000

DISCUSSION

A study was conducted by **Jaideep** et al. (2017) showed that prevalence of high-risk pregnancy was 30.7% and 59.8 were having bad obstetric history, 4% were having pregnancy induced hypertension, 5.5% were elderly gravida, 3.2% were Rh negative and 22.3% were having other risk factors. Factors such as education status of pregnant women, age at pregnancy and parity of pregnant women were found to be significantly associated with the prevalence of high risk among pregnant women attending antenatal clinic in rural field practice area of Jawaharlal Nehru Medical College, Belgavi, Karnataka, India

Comparing to that study, our study findings showed that 17.2% had gestational diabetic mellitus and 12.5% had previous cesarean section, oligo/ poly hydramnios accounted for 11.2% and

gestational hypertension was 5.6% so, it has been showed varying in interpretation between both studies.

CONCLUSION

The study results highlighted and proved statistically that high risk pregnancies are increasing and therefore antenatal hospitalization increasing. Gestational diabetic mellitus was the chief cause for antenatal hospitalization and many others conditions associated and act as risk factors for antenatal mothers' admission. Hence, there is a need for pre-conceptual as well as prenatal counselling for mothers to prevent from the risk factors and identify them earlier and eventually to reduce maternal and foetal morbidity and mortality.

RECOMMENDATIONS

The study can be conducted with the large sample in different hospitals for

comparison to generalize the study findings. The study can be done with the comparative between districts and states. This study can be done with the use of simple random technique (probability sampling) to generalize the result findings more effectively. The study can be done by experimental study with intervention of health knowledge to change the behaviour pattern of the mothers to reduce risk factors. Other data like educational status, occupation, income and source of knowledge can be added with the demographic variables. The study can be conducted by collecting data in prospective aspect than retrospective method.

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