

STUDY OF PREGNANCY OUTCOME IN VARIOUS HIGH-RISK PREGNANCIES IN TERTIARY CARE HOSPITAL

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Abstract

Introduction: In normal married couple or married women pregnancy is normal physiological condition and not a high-risk condition. Most of the pregnancies have happy outcome with good health of both foetus and mother whereas some pregnancies are complicated by problems with mother's health, the health of the foetus or complications unique to pregnancy. Like these kinds of complicated pregnancies are group as "high risk" for developing problems and having a poor outcome. In comparing to the normal pregnancy High-risk pregnancy is one of greater risk to the mother or her fetus. A High risk (at risk) pregnancy cases there is increased in risk of morbidity or mortality before or after delivery where the mother, fetus, or neonate. At the time of pregnancy, a high-risk pregnancy is grouped in which past reproductive performance or maternal environment presents a significant risk to foetus such as premature birth, small for date infant, full term with low reservoir or still births and early neonatal death. For pregnant women identification of at high risk for these complicated pregnancies with poor outcome is fundamental to antenatal care. The risk factors which include high risk pregnancy are existing medical conditions such as HIV positive, Diabetes mellitus and BP as well as maternal obesity, multiple births and young or old age. A number of biological and social factors such as age, social class, parity and past obstetric history, occupation and psycho social factors and nutritional status that influence the perinatal outcome during pregnancy.

Aim: The main aim of this study is to pregnancy outcome in various high-risk pregnancies.

Material and Methods: This study was prospective study in which total 100 high risk and 100 low risk caesarean cases were done. In all the cases married women were included with the age from 20 to 40 years old having gestational age of more than 28 wks and underwent Caesarian section (Emergency/elective). In this study both IPD and OPD patients were included. In IPD cases in general had minimum of two antenatal check-ups. At the time of admission detail history of patients was taken including age, address and occupation, menstrual history, obstetrical history regarding gravity, parity abortion, number of term & preterm labours, any history of previous CS, indication for CS and intra-operative complication. For all the patients scoring was done as low risk and high risk cases by modified Coopland's Scoring System. In the case of cesarean section Breast feeding was stated after 4 hours. Detailed information and history of neonatal complication and perinatal outcome was also recorded using predesigned and pretested proforma.

Result: In this study to total 100 high risks as a study group and 100 low risks as a control group caesarean case with perinatal outcome was recorded. 42% and 30% of the study and control group respectively had low birth weight baby. In the high risk group, 3% had neonatal death while in control group there was 0% respectively. 38% babies in this study group and 17% babies in the control group had mild to severe depression and Apgar score below 6-4.

Conclusion: This study showed pregnancy complications and related perinatal morbidity as risk factors impacting on neonatal outcome. If mother had access to appropriate and timely healthcare during pregnancy majority of maternal morbidities could be prevented. Hence proper care and timely referral can have a positive impact in lowering the perinatal mortality and morbidity and possibly better maternal outcome.

Keywords: Pregnancy outcome, High risk pregnancy, Perinatal outcome, Coopland scoring, Caesarian section

Introduction

In normal married couple or married women pregnancy is normal physiological condition and not a high-risk condition. Most of the pregnancies have happy outcome with good health of both foetus and

mother whereas some pregnancies are complicated by problems with mother's health, the health of the foetus or complications unique to pregnancy. Like these kinds of complicated pregnancies are group as "high risk" for developing problems and having a

poor outcomeⁱ. However as a whole only 10-30% of the mothers seen in antenatal period are classified as high risk they account for 70-80% of perinatal mortality and morbidity. Hence like these kinds of cases special care is necessary for assure the best possible outcome for mother and childⁱⁱ. In comparing to the normal pregnancy High-risk pregnancy is one of greater risk to the mother or her fetus. A High risk (at risk) pregnancy cases there is increased in risk of morbidity or mortality before or after delivery where the mother, fetus, or neonateⁱⁱⁱ. At the time of pregnancy, a high-risk pregnancy is grouped in which past reproductive performance or maternal environment presents a significant risk to foetus such as premature birth, small for date infant, full term with low reservoir or still births and early neonatal death. For pregnant women identification of at high risk for these complicated pregnancies with poor outcome is fundamental to antenatal care^{iv}. By using a scoring system a high risk pregnancy may be identified such as the system developed by Coopland AT^v. At High risk pregnancy maternal mortality contributes to 80% due to severe bleeding / hemorrhage (25%), infections (15%), unsafe abortions (13%), eclampsia (12%), obstructed labour (8%) and other direct causes (8%). There are also many indirect causes such as HIV/AIDS, cardiovascular diseases and malaria account for 20%^{vi}. The risk factors which include high risk pregnancy are existing medical conditions such as HIV positive, Diabetes mellitus and BP as well as maternal obesity, multiple births and young or old age^{vii}. Globally there were about 2.6 million stillbirths with more than 8200 deaths a day. Out of 133 million babies born alive each year, 2.8 million die in the first week of life^{viii}. In many developing countries, because of complication in pregnancy and labor are main causes of maternal mortality. To the report of WHO every day, about 800 women die due to preventable pregnancy associated causes and 99% of these mortalities occurs in developing countries^{ix}. A report from a study showed decline in MMR from 2000/lakh live births in 1938 to 1000/lakh live births by 1959 and in India current MMR in 2009 is 250/lakh live birth^x. A number of biological and social factors such as age, social class, parity and past obstetric history, occupation and psycho social factors and nutritional status that influence the perinatal outcome during pregnancy. Hence early identification of the risk factors and initiation of proper management and therapy can frequently modify or prevent a poor

perinatal outcome^{xi}. The main aim of this study is to pregnancy outcome in various high-risk pregnancies.

Materials and Methods:

This study was prospective descriptive study was conducted at Department of Obstetrics and Gynecology at Govt. medical college and hospital Surat Gujarat; during the period of 1 year. In this study total 100 high risk and 100 low risk caesarean cases were done. In all the cases married women were included with the age from 20 to 40 years old having gestational age of more than 28 wks and underwent Caesarian section (Emergency/elective). In this study both IPD and OPD patients were included. In IPD cases in general had minimum of two antenatal check-ups. At the time of admission detail history of patients was taken including age, address and occupation, menstrual history, obstetrical history regarding gravity, parity abortion, number of term & preterm labours, any history of previous CS, indication (Medical, Surgical, Obstetrical and Gynecological) for CS and intra-operative complication. For all the patients scoring was done as low risk and high-risk cases by modified Coopland's Scoring System^{xii}. After the scoring values were recorded of all the high-risk factors were summed up and a total score determined whether the pregnancy was "Low risk" or "High risk", accordingly and were categorized as: Low risk with the score of 0-2 whereas High risk with the score of 3-5. The intrapartum scale focused on problems of abnormal progress of labour, meconium stained liquor, fetal heart rate deceleration, presentation, induced labour and mode of delivery. About neonatal factors were also recorded in detail which included as birth weight, gestational age, Apgar score, congenital anomalies, hypothermia and some of the important problems like birth asphyxia and respiratory distress. In the case of cesarean section Breast feeding was stated after 4 hours. Detailed information and history of neonatal complication and perinatal outcome was also recorded using predesigned and pretested proforma. The observations in both groups were compared using p values calculated P value of <0.5 was taken as statistically significant.

Result:

In this study to total 100 high risks as a study group and 100 low risks as a control group caesarean case with perinatal outcome was recorded. 42% and 30% of the study and control group respectively had low birth weight baby. In the high risk group, 3% had

neonatal death while in control group there was 0% respectively. 38% babies in this study group and 17% babies in the control group had mild to severe depression and Apgar score below 6-4 as shown in table no 1 below.

Table 1: showing the comparative study of perinatal outcome

Perinatal Outcome	High Risk		Low Risk		p value
	No.	%	No.	%	
Total birth	100	100	100	100	
Live birth	95	95	100	100	
Still birth					
FSB	-	-	-	-	
MSB	-	-	-	-	
Neonatal death	3	3	-	-	P>0.05
Perinatal mortality	2	2	-	-	
Apgar score 7-10 no	59	59	83	83	P>0.05
depression 4-6 mild	25	25	5	5	
depression < 4 severe	13	13	12	12	

40% and 10% babies in the high risk and low risk group respectively had perinatal morbidity which was in the form of prematurity, IUGR, respiratory distress syndrome and birth asphyxia as shown in table no 2 below.

Table 2: Showing the Comparative study of perinatal morbidity

Perinatal Morbidity	High Risk		Low Risk		p value
	No.	%	No.	%	
Respiratory distress syndrome	9	9	3	3	P>0.05
Birth asphyxia	4	4	1	1	P>0.05
Neonatal hyperbilirubinemi	8	8			
Anemia (moderate)	2	2	1	1	
Prematurity	11	11	3	3	P<0.01
IUGR	1	1			
Septicemia					
Meconium aspiration syndrome	3	3	2	2	P>0.05
Intracranial hemorrhage					
Neonatal hypoglycemia	2	2			
	40	40	10	10	P<0.01

10% and 4% cases in both study and control group respectively had poor perinatal outcome as shown in table no 3 below.

Table 3: Showing the comparative study of neonatal outcome

Neonatal Outcome	High Risk		Low Risk	
	No.	%	No.	%
Term	95	95	97	97
Prognosis				
Good	25	25	35	35
Average	9	9	3	3
Poor	2	2		
Stay in nursery				
< 1 day	27	27		
1-7 days	5	5	34	34
> 7 days	5	5		
Antibiotics (broad spectrum)				
< 5 days	12	12	6	6
> 5 days	13	13	3	3

Discussion:

Now a day's Caesarean section (CS) is safer and even better than it has ever been, in terms of advances in techniques, blood transfusion, surgery and the availability of "powerful" antibiotics. In the developing countries mortality and morbidity may be much higher where there is lack of health facilities, proper equipment, trained personnel, blood bank and clean operation theatres. In developing countries concomitant decrease in perinatal mortality has not been substantiated by an increase in the rate of CS whereas in developed countries steady drop in perinatal mortality has been shown^{xiii}. By using Coopland risk factor scoring, high risk cases and low risk cases were divided.

In this study the maximum numbers of babies were more than 2.5 kg in both the high risk and low risk groups. In this study incidence of LBW was more in the study group as compared to the low risk group which showed almost similar to the study of Samiya M et al^{xiv} and Dutta and Das et al^{xv} respectively. According to the WHO Low birth weight, which simply signifies that the baby is born malnourished which is a forbidding challenge for India, tops the world with an incidence of 30%^{xvi}.

A study of Jain S et al^{xvii} showed most common perinatal morbidity followed by respiratory distress whereas in low risk group most common cause were

prematurity and RDS followed by birth asphyxia respectively which is similar to this study.

In this study showed that the perinatal death rate of women at low risk intended to deliver in primary care was higher than that of women at high risk delivering in secondary care which is also similar to the study done by Evers ACC et al^{xviii}. In another study of Samiya M et al^{xix} women with one or more risk factors were 17.1 times more likely to lose their baby during the perinatal period than those with no risk which showed equivalent to this study. Another study in china showed that Clear trend was observed between higher pregnancy complications and fetal deaths (including stillbirth) and early neonatal death^{xx}. Another study of Vijayasree M et al^{xxi} Apgar score had better scores in low risk group which is similar to this study. According to the study of Jnaneswari K et al^{xxii} three fourth of the baby has APGAR score more than 7, 75% had APGAR greater than 7 and 25% has APGAR score less than 7 within 1 minute after birth and it correlates with the study Poor Apgar score of < or = 7 at 1 minute which is similar to this study and also the study of Zareen N et al^{xxiii}.

Conclusion:

This study showed pregnancy complications and related perinatal morbidity as risk factors impacting on neonatal outcome. It also indicated that improvement of delivery rate and reduction in low birth weight rate but high caesarean section rate observed in this study emphasize the need to give special attention to high risk mothers. This study also suggests that Coopland risk scoring for every case which is admitted for a caesarean section which will be helpful in predicting and evaluating the eventual perinatal outcome. If mother had access to appropriate and timely healthcare during pregnancy majority of maternal morbidities could be prevented. Hence proper care and timely referral can have a positive impact in lowering the perinatal mortality and morbidity and possibly better maternal outcome.

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