# Perinatal Outcome in High Risk Pregnancies

**Jnaneswari K[*] and Manjubala Dash**
Dept. of OBG, College of Nursing, MTPG and RIHS, Puducherry, India
jnanes85@gmail.com

## Abstract

*Pregnancy, also known as gravidity or gestation places additional physical and emotional stress on a woman's body. Health problems that occur before a woman becomes pregnant or during pregnancy may also increase the likelihood for a high-risk pregnancy. High risk pregnancy may cause severe detrimental effects on mother and fetus leading to increased morbidity and mortality. The objectives is to determine the perinatal outcome of high risk pregnancy and to associate the findings with high risk conditions .This is a cross sectional study conducted at RGGWCH, Puducherry. Convenient sampling technique was used to select 60 samples for the study. The data was collected with structured questionnaire containing demographic, obstetrical and neonatal variables. Mean, SD and Chi square was used. Results shows that among 60 high risk mother majority 26(36.61%) had anemia, 25(35.21%) had PIH and 10(14.08%) had gestational diabetes. Regarding the perinatal outcome, most of the babies, 44(73.3%) had birth weight more than 2.5 kg with the mean birth weight of 2.68±0.63, 45(98.3%) had APGAR greater than 7. The neonatal mortality reported in this study was about only 1.7%. The association of birth weight and APGAR score with high risk pregnancy $\chi^2$ value was 0.878 (p>0.05) which is not statistically significant. The results revealed that there is no association between high risk pregnancy and perinatal outcome. In this study, Most of the mothers had proper antenatal checkup and treatment, so the perinatal outcomes remains good. Public awareness regarding pre-pregnancy hemoglobin status and importance of antenatal checkup relating with maternal and fetal adverse pregnancy outcome should be initiated to reduce the perinatal complications.*

**Keywords:** Anemia in pregnancy, Pregnancy induced hypertension, Perinatal outcome.

## Introduction

High-risk pregnancy is one of greater risk to the mother or her fetus when compared to normal pregnancy. A High-risk (at-risk) pregnancy, where the mother, fetus, or neonate is at increased risk of morbidity or mortality before or after delivery[1]. High risk pregnancy contributes to 80% of maternal mortality due to severe bleeding / hemorrhage (25%), infections (15%), unsafe abortions (13%), eclampsia (12%), obstructed labour (8%) and other direct causes (8%). Indirect causes such as malaria, HIV/AIDS and cardiovascular diseases account for 20%[2]. The risk factors which include high risk pregnancy are existing medical conditions eg. BP, Diabetes mellitus, HIV positive, etc., maternal obesity, multiple births and young or old age[3]. In India, there were 2.6 million stillbirths globally with more than 8200 deaths a day. Among the 133 million babies born alive each year, 2.8 million die in the first week of life[4]. Report from the studies shows decline in MMR from 2000/lakh live births in 1938 to 1000/lakh live births by 1959, and current MMR of India in 2009 is 250/lakh live births[5].High risk pregnancy accounts for 75% of perinatal morbidity such as IUGR, preterm and low birth weight, Respiratory Distress syndrome, neonatal complications, stillbirths and early neonatal mortality. Perinatal mortality rate vary widely and may be below 10/1000 for certain developed countries and more than 10 times higher in developing countries[2].

A number of biological and social factors such as age, parity, social class and past obstetric history, occupation and psycho-social factors and nutritional status influence the perinatal outcome during pregnancy. Hence it should be taken into account while assessing the risk for any pregnant woman. Early identification of the risk factors and initiation of proper management and therapy can frequently modify or prevent a poor perinatal outcome[6].

## Materials and Methods

A quantitative approach with prospective cross section study was conducted at RGGWCH, Puducherry. 60 samples who met the inclusion criteria were selected by convenient sampling technique. All singleton pregnancies from 28 weeks of gestation to till delivery were included in the study. After obtaining informed consent, data was collected through a structured questionnaire comprising of 2 sections: Demographic variable which includes age, locality, educational status, occupation and family income. Obstetric variable which includes past obstetrical history, gestational week at delivery, medical conditions associated with pregnancy and mode of delivery and condition of baby at birth, APGAR score within 1 minute after birth, baby weight and neonatal complications. Data was statistically analyzed by descriptive and inferential statistics.

## Results and Discussion

Among the 60 study population, majority 23(38.4%) belong to the age group of 21-25 yrs and 26-30 yrs. 10(16.6%) belong to 31-35 yrs 4(6.6%) of the mothers belong to the age group of 18-20 years with the mean age of 25.85±3.96. considering the domicile, majority 36(60%) of the mothers belong to urban and 12(20%) of the subjects belong to both rural and semiurban. Education of the mothers reveals that majority 24(40%) of them were graduates. (Table-1).

Regarding the gestational age, majority 26(43.3%) and 17(28.3%) of the mother belongs to 39 and 40 weeks respectively with the mean score of 37.72±2.65 and in this study majority of the mothers 33(55 %) were primi and 27(45 %) were multigravida. The results computes that, with regard to the high risk conditions, majority 26(36.61%) of the mother is anemic, 25(35.21%) of the mothers had pregnancy induced hypertension and 10(14.08%) of the mothers had gestational diabetes. The primi mothers accounts for 33(55 %) and 27(45 %) were multigravida. With regard to the type of delivery, majority 43(71.7%) undergone normal vaginal delivery and only about 17(28.3% of the mothers undergone LSCS delivery. The mean birth weight score was 2.68±0.63 with majority 44(73.3%) of babies with birth weight more than 2.5 kg, 16(26.7%) of the babies with weight less than 2.5 kg. (Table-2).

APGAR score shows 45(75%) of the babies had the APGAR score more than 7 and 15(25%) of the babies had APGAR score less than 7 and still born accounts for 1(1.7%) in the study group. (Table-2)

The association between high risk pregnancies and birth weight revealed that $\chi 2$ value was 0.878 (P >0.05) which was not statistically significant and signifies that there was association between high risk condition and birth weight.

**Discussion:** The main findings of the study denotes that the high risk 38.4% is prevalent in the age group of 21-25 yrs. The educational level of mothers is another important factor which creates awareness of the health and health care system, accounts 40% graduate mothers. This was support by Ibrahim SA and et al[7], that Maternal illiteracy was associated with significantly higher risk of NND, and this rate decreased with increasing years of education.

The babies born before 37 weeks are considered of high risk which has increased potentiality for increased morbidity rates. In this study, majority 43.3% and 28.3% of the mother belongs to 39 and 40 weeks respectively. Regarding gravida majority of the mothers belongs to primi ie. 55 % of the mothers were primi and 45 % were multigravida.

Incidence of high risk conditions, 36.61% of the mother is anemic. 14.08% of the mothers had gestational diabetes, 35.21% of the mothers had pregnancy induced hypertension. 4.22% of

the mother had ecclampsia and about 9.85% of the mother had oligohydraminos respectively. This indicates most of the mothers are anemic and there is high incidence of pregnancy induced hypertension when compared to other high risk conditions. Similar studies shows that Hypertensive disorder of pregnancy is associated with increased risk of maternal-perinatal adverse outcome causing Intrauterine growth restriction, oligohydramnios, placental ablation were noticed by Gulseren Yucesoy etal[8] and GDM was noted as a complication in 0.38% of all sampled pregnancies; overt (type I and type II) diabetes was noted in 0.78%. Prepregnancy weights were higher in the GDM group Stephen J Sepe etal[9].

Majority of the mothers, 71.7% undergone normal vaginal delivery and only about 28.3% of the mothers undergone LSCS delivery whereas Libo Sun and et al[10] in his prospective cross sectional study shows that High Cesarean section delivery was associated with higher pregnancy complications, and more neonatal critical illnesses.

**Table-1**
**Distribution of demographic variables**

| Demographic variable | Frequency (n=60) | Percentage% | Mean, SD |
|---|---|---|---|
| **Age** | | | |
| 18-20 | 4 | 6.6 % | |
| 21-25 | 23 | 38.4 % | 25.85, 3.96 |
| 26-30 | 23 | 38.4% | |
| 31-35 | 10 | 16.6% | |
| **Domicile** | | | |
| Rural | 12 | 20% | |
| Semi – Urban | 12 | 20% | |
| Urban | 36 | 60% | |
| **Educational Status** | | | |
| High school | 8 | 13.4 % | |
| Higher secondary | 18 | 30% | |
| Diploma | 10 | 16.6 % | |
| Graduate | 24 | 40 % | |

**Table-2**
**Distribution of the Obstetric variable**

| Obstetric variable | Frequency (N=60) | Percentage% | Mean, SD |
|---|---|---|---|
| Gestational age 36 weeks | 5 | 8.3   % | |
| 37 weeks | 3 | 5% | 37.72, 2.65 |
| 38 weeks | 9 | 15% | |
| 39 weeks | 26 | 43.3% | |
| 40 weeks | 17 | 28.3% | |
| Gravida Primi | 33 | 55% | |
| Multi | 27 | 45% | |
| High Risk conditions | | | |
| Anemia | 26 | 36.61% | |
| Gestational Diabetes | 10 | 14.08% | |
| Pregnancy Induced Hypertension | 25 | 35.21% | |
| Ecclampsia | 3 | 4.22% | |
| Oligohydraminos | 7 | 9.85% | |
| Type of delivery | | | |
| Normal | 43 | 71.7% | |
| LSCS | 17 | 28.3% | |
| Birth weight | | | |
| >2.5 kg | 44 | 73.3% | 2.68, 0.63 |
| <2.5 kg | 16 | 26.7% | |
| APGAR score | | | |
| >7 | 45 | 75% | |
| <7 | 15 | 25% | |
| Condition at birth | | | |
| Alive | 59 | 98.3% | |
| Still born | 1 | 1.7% | |

When compared with Baha M. Sibai etal[11] study it was found that the overall perinatal mortality was 367 per 1000 and neonatal morbidity was significant. There were two maternal deaths and two patients with ruptured liver hematoma, and nine had acute renal failure. In this study the babies born are almost alive during birth and there is no complications till 7 days after delivery, 98.3% were born alive and 1.7% were still born.

Mostly, 73.3% of the babies were born with birth weight more than 2.5 kg and only 26.7% of the babies were born with weight less than 2.5 kg. This indicates majority of the high risk pregnancy has the perinatal outcome of normal birth weight.

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 was observed in high risk neonates Zareen N etal[12].

Finally association between high risk pregnancies and perinatal outcome shows that there is no significant relationship among the mothers.

## Conclusion

This study revealed that prevalence of anemia and pregnancy induced hypertension was more predominant among the high risk conditions. Though the study population has increased awareness and accessibility to the health care system, early diagnosis and prompt treatment with regular follow up was observed among the mothers which paved the way for good perinatal outcome with reduced complications. Hence Public awareness regarding pre-pregnancy hemoglobin status and importance of routine antenatal checkup relating with maternal and fetal adverse pregnancy outcome should be initiated to bring about the good perinatal outcome.

## References

1. Raul Artal (2015). Overview of High-Risk Pregnancy, MSD Manual Professional Edition, http://www.msdmanuals.com/professional/gynecology-and-obstetrics/high-risk-pregnancy/overview-of-high-risk-pregnancy. August 2015.

2. Park K (2011). Textbook of Preventive and Social Medicine, 21st ed., Jabalpur: M/s Banarsidas Bhanot Publisher; 513-24.

3. Eunice Kennedy Shriver (2010). National Institute of Child Health and Human Development. https://www.nichd.nih.gov/health. 11/04/2010

4. Sedgh G. Singh and S. Hussain R. (2014). Intended and unintended pregnancies worldwide in 2012 and recent trends. Studies in family planning, 45(3), 301–314. http://doi:10.1111/j.1728-4465.2014.00393.x.

5. Dutta DC (2004). Textbook of obstetrics, 6th ed., New

central book agency(p) Ltd. Kolkata, 631.

**6.** Arifa Bari and Syeda Batool Mazhar (2012). Maternal and perinatal outcomes of high risk versus low risk pregnancies in tertiary care settings. *Rawal Medical Journal,* 37(3), 304-308.

**7.** Ibrahim SA, Abdel G. Babiker and Amin I.K. (1994). Factors associated with high risk of perinatal and neonatal mortality. *Paediatric Perinatal Epidemiology*, 8(2), 193-204.

**8.** Gulseren Yucesoy and et al. (2005). Maternal and perinatal outcome in pregnancies complicated with hypertensive disorder of pregnancy. *Archives of Gynecology and Obstetrics,* 273(1), 43-49, http://doi:10.1007/s00404-005-0741-3.

**9.** Stephen J Sepe et. al. (1985). Gestational Diabetes: Incidence, Maternal Characteristics, and Perinatal Outcome. *The American Society for Clinical Nutrition,* 34(2), 13-16. http://doi: 10.2337/diab.34.2.S13

**10.** Libo sun and et. al. (2014). Estimation of high risk pregnancy contributing to perinatal morbidity and mortality. *BMC Pregnancy and Childbirth,* 14, 338. http://doi:10.1186/1471-2393-14-338.

**11.** Baha M. Sibai, Taslimi M.D., Abdella M., Brooks T.N. and Spinnato T.F. (2013). Maternal-perinatal outcome associated with the syndrome of hemolysis, elevated liver enzymes, and low platelets in severe preeclampsia-eclampsia. *American Journal of Obstetric and Gynecology*, 155(3), 501–507. http:/doi:10.1016/0002-9378 (86) 90266-8.

**12.** Zareen N, Sonia Naqvi, Nasreen Majid and Hassan Fatima (2009). Perinatal outcome in high risk pregnancies. *Journal of College of Physicians and surgeons,* 19(7), 432-435 http:// doi: 07.2009/JCPSP. 432435.