International Journal of Clinical Trials
*Sharma S et al. Int J Clin Trials. 2023 Nov;10(4):291-293*
http://www.ijclinicaltrials.com
pISSN 2349-3240 | eISSN 2349-3259
DOI: https://dx.doi.org/10.18203/2349-3259.ijct20233171

**Original Research Article**

# Prevalence of high risk pregnancy and study of maternal and perinatal outcome

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**Received:** 28 March 2023
**Revised:** 16 May 2023
**Accepted:** 18 May 2023

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## ABSTRACT

**Background**: A high-risk pregnancy refers to pregnancy with an increased risk of adverse outcome in the mother or baby. Directing appropriate timely intervention is very important to prevent maternal and perinatal morbidity and mortality. Aim was to study the prevalence of High-risk pregnancy and to study the maternal and perinatal outcome.
**Methods**: A record-based retrospective observational study was done from January 2022 to December 2022 among antenatal women who were admitted in the labour ward of tertiary care institute.
**Results**: Among 3,887pregnant patients, 1126 (28.96%) were high risk pregnancies. The most common high-risk factors were hypothyroidism (15.96%), hypertensive disorder (3.31%), previous one caesarean section (2.8%). 88% high risk pregnant women had caesarean section. 96.5% neonates had APGAR score more than 7 and 1.7% neonates were admitted to NICU. There were 8 macerated and 3 fresh still births.
**Conclusions:** Directing appropriate timely intervention is very important to prevent maternal and perinatal morbidity and mortality. In our tertiary care hospital, the prevalence of high-risk pregnancy was 28.96% and no maternal mortality.

**Keywords**: Postdatism, NICU, APGAR, Stillbirth

## INTRODUCTION

A high-risk pregnancy refers to pregnancy with an increased risk of adverse outcome in the mother or baby.[1] In India, around 30% of pregnancy is high risk which may be responsible for 75% of perinatal mortality if left unidentified.[2] Early identification of the high-risk pregnancies is crucial to ensure proper interventions and to provide a positive outcome. Now with small family norms, higher education status of the women and increasing medical litigations, everyone wants no adverse outcome. There are five main reasons for death of pregnant women such as severe hemorrhage, maternal infections, unsafe abortion, hypertension-related disorders of pregnancy such as preeclampsia and eclampsia and medical complications such as cardiac conditions, HIV/AIDS, or diabetes complicating or complicated by pregnancy.[3] According to WHO, globally about 830 women die from pregnancy or childbirth related complications every day.[4] About 20-30% of all pregnancies belong to high-risk category, which is responsible for 70-80% of perinatal mortality and morbidity.[4] All the pregnancies need to be evaluated for high-risk pregnancy through routine antenatal care which mainly aims at detecting the high risk pregnancy at the earliest.[5] Hence, this study was conducted to determine the prevalence and outcome of high-risk pregnancy in tertiary care hospital of Himachal Pradesh.

### *Aim and objectives*

Aim and objectives were To sudy the prevalence of high risk pregnancies and To study the maternal and perinatal outcome in high risk pregnancies.

## METHODS

A record-based retrospective observational study was done from January 2022 to December 2022 among antenatal women who were admitted in the labor ward of Shri Lal Bahadur Shastri Government Medical college, Nerchowk, Himachal pradesh. High-risk pregnancy was classified based on the guidelines provided by Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) for identification of high-risk pregnancy by health-care workers.[3] Antenatal women with the following conditions were categorized under high-risk pregnancy: Severe anemia with hemoglobin level <7 g/dl, Hypertensive disorder in pregnancy (blood pressure >140/90 mmHg), Pregnant women positive for HIV/syphilis, Hypothyroidism (thyroid-stimulating hormone values, first trimester: 0.1-2.5 mIU/l, second trimester: 0.2–3 mIU/l, and third trimester: 0.3–3 mIU/l), Gestational diabetes mellitus (glucose challenge test ≥140 mg/dl), Twin pregnancy or multiple pregnancy, Previous history of lower segment cesarean section, Younger primi (age <20 years) or elderly gravida (age >35 years), Malpresentation, Bad obstetric history (history of congenital malformation, stillbirth, abortion, premature birth, and obstructed labor), Rh incompatibility, Low-lying placenta or placenta previa and any systemic illness.

### *Inclusion and exclusion criteria*

All pregnant women in our antenatal ward who fulfill the above parameters of high-risk pregnancy defined as per the guidelines provided by PMSMA and All high risk primigravida and multigravida irrespective of gestational age were included. Normal antenatal cases without any risk factor were excluded.

### *Statistical analysis*

Data was entered in excel and analysed by using software SPSS 17.

## RESULTS

Among 3,887 patients admitted in the labor ward, 1126 (28.96%) were high risk pregnancies. 72% were primigravida and 28%) were multigravida pregnancies. 6% of high risk mothers were less than 20 years of age, 8% were in the age group of 20-25 years, 60% were between 26-30 years and only 26% were above 30 years. The most common high risk factors were hypothyroidism (15.96%), hypertensive disorder (3.31%), previous one caesarean section (2.8%) followed by (2.16%) prevalence of each intrahepatic cholestasis of pregnancy and intrauterine growth restriction. Out of 1126 high risk patients admitted in labor ward, 1001 (88%) high risk pregnant women had caesarean section, 112 (9.9%) vaginal delivery ,6 (0.53%) had preterm delivery and 7 (0.62%) had instrumental deliveries.

There were 1087 (96.5%) neonates with APGAR score more than 7and 20 (1.7%) neonates were admitted to NICU. There were 8 macerated and 3 fresh still births.

**Table 1: Distribution as per risk factors.**

| Parameters | N | % |
|---|---|---|
| **Hypothyroidism** | 530 | 15.96 |
| **Hypertensive disorder in pregnancy** | 110 | 3.31 |
| **Eclampsia** | 5 | 0.15 |
| **Teenage pregnancy** | 5 | 0.15 |
| **elderly primigravida** | 20 | 0.6 |
| **Previous 1 LSCS** | 96 | 2.8 |
| **Previous 2 LSCS** | 36 | 1.08 |
| **Bad obstetric history Recurrent miscarriages (first trimester)** | 42 | 1.26 |
| **Recurrent miscarriages (second trimester)** | 5 | 0.15 |
| **Previous antepartum IUD** | 12 | 0.36 |
| **Placenta praevia** | 24 | 0.72 |
| **Abruptio placenta** | 5 | 0.15 |
| **Gestational diabetes** | 42 | 1.26 |
| **ICP** | 72 | 2.16 |
| **IUGR** | 72 | 2.16 |
| **Twin pregnancy** | 20 | 0.60 |
| **Severe anemia** | 10 | 3.01 |
| **HIV positive** | 5 | 0.15 |
| **Hbsag positive** | 8 | 0.24 |
| **Rh isoimmunisation** | 5 | 0.15 |
| **Cardiac disease** | 2 | 0.06 |

**Table 2: Obstetric outcome.**

| Mode of delivery | High risk pregnancy, N (%) |
|---|---|
| **Caesarean sectio** | 1001 (88) |
| **Full term vaginal delivery** | 112 (9.9 |
| **Preterm delivery** | 6 (0.53) |
| **Instrumental delivery** | 7 (0.62) |
| **Forceps** | 3 |
| **Ventouse** | 4 |

**Table 3: Neonatal outcome.**

| Outcome | N (%) |
|---|---|
| **Normal APGAR** | 1087 (96.5) |
| **Macerated stillbirth** | 8 (0.71) |
| **Fresh still birth** | 3 (0.26) |
| **Admission to NICU** | 20 (1.7) |
| **Birth asphyxia** | 8 (0.71) |

## DISCUSSION

In order to reduce the MMR to an acceptable level it is mandatory to identify the high risk mothers at the earliest and provide them with appropriate care to reduce the complications during pregnancy and child birth.[6-8] In our study we found that 1126 (28.96%) were high risk pregnancies as compared to 26.9% in study by Seema P et

al. The most prevalent risk factor was hypothyroidism (15.96%) followed by hypertensive disorder of pregnancy. High prevalence of hypothyroidism may be due to thyroid screening of all booked antenatal patients. Seema et al analysed that the most common medical condition was anaemia.[9] In our study the prevalence of anaemia was slightly less (3.01%). The prevalence of anaemia may be less because of improved literacy, socioeconomic status, free availability of oral iron supplements and active participation of ASHA workers. In our study 88% of high risk women had caesarean sections. In study by Majella 73.9% had vaginal delivery.[10] But in study by Kolluru et al the risk of operative intervention increased with increasing risk score, 82.5% of the high risk pregnant women had operative intervention either cesarean section or instrumental vaginal delivery.[1] Jain et al concluded that out of 415 women, 96 (59%) were High Risk, 191 (46%) were Low risk and 128 (31%) were no risk. In High risk group there were 59 perinatal deaths and perinatal mortality rate was very high (614 per 1000 live births).[11] But in our study we did not further categorise the pregnancies into high, low and no risk. In our study there were 0.71% macerated stillbirth, 0.26% fresh stillbirth, admission to NICU 1.7% and birth asphyxia 0.71%. In similar study by Kumar et al 5.04% were intra-uterine dead fetuses, 0.7% intrapartum still-birth, 22.4% required neonatal intensive care unit admission, 5.6% intubated.[12]

### *Strengths and limitations*

Strengths were the study period was one year and among 3,887 antenatal admissions, 1126 were high risk pregnancies. The large study group increase representativeness of the study subjects. The maternal perinatal outcome was also studied along with prevalence of high-risk pregnancy. Limitations were although the antenatal women with postdatism have risk of fetal distress, meconium aspiration, cord compression due to oligohydroamnios, labor dysfunction and shoulder dystocia but they were not included in our study.

## CONCLUSION

Directing appropriate timely intervention is very important to prevent maternal and perinatal morbidity and mortality. In our tertiary care hospital, the prevalence of high risk pregnancy was 28.96%. With vigilant and careful detection of high risk pregnancies there was no maternal mortality. Perinatal outcome (0.71% macerated IUD and 0.26% fresh stillbirth) can further improve if high risk pregnancy antenatal wards are made separate, more number of residents and senior obstetricians are available to provide better and timely care to these high risk patients.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Kolluru V, Reddy A. Study of high risk scoring in pregnancy and perinatal outcome. Indian J Obstet Gynecol Res. 2016;3(4):407-9
2. Pradeep MK, Gnanadeep NV, Umesh RD, Pushpa SP. Prevalence of high risk [2]pregnancy in rural Dharwad. J Dent Med Sci. 2015;10:29-32.
3. World Health Organization 10 Facts on Maternal Health. Available at: http://www.who.int/features/factfiles/maternal_health/en/. Accessed on 20 February 2023.
4. Arjariya R, Tiwari P. Prevalence of high risk pregnancy:in a tertiary care centre of Sagar division of MP. IJOP. 2021;9(1).32-8.
5. Maternal Health. Available at: https://www.who.int/health-topics/maternal-health. Accessed on 20 February 2023.
6. Eunice KS. National Institute of Child Health and Human Development. Available at: https://www.nichd.nih.gov/health/topics/high-risk. Accessed on 20 February 2023.
7. Pradhan Mantri Surakshit Matritva Abhiyan. Available at: https://pmsma.nhp.gov.in/about-scheme. Accessed on 20 February 2023.
8. Surakshit Matritva Aashwasan. Available at: https://suman.nhp.gov.in. Accessed on 20 February 2023.
9. Seema P. A retrospective study on high risk pregnancy and their outcome in a teaching hospital in South India. Med Innovat. 2014;3(1):23-8.
10. Majella G1, Sarveswaran G. A longitudinal study on high risk pregnancy and its outcome among antenatal women attending rural primary health centre in Puducherry, South India. J Educ Health Promot. 2019;8:12.
11. Jain SB. Antipartum surveillance by scoring system for pregnancy outcome of cesarean section in a tertiary referral centre of Madhya Pradesh. Int J Reprod Contracept Obstet Gynecol. 2018;7(9):3558-62.
12. Naina K. High risk pregnancy andperinatal outcome: an observational study. Med Innovat. 2020;16(4):318-26.
13. Henrique T, Lima B. Maternal near miss determinants at a maternity hospital for high-risk pregnancy in northeastern Brazil: a prospective study: IJOP. 2019;3:271.

**Cite this article as:** Sharma S, Sharma R, Gautam A. Prevalence of high risk pregnancy and study of maternal and perinatal outcome. Int J Clin Trials 2023;10(4):291-3.