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Research Article

UNRAVELING THE PRECURSORS: A CASE-CONTROL STUDY ON RISK FACTORS FOR PRETERM LABOUR

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Dr. Patabendige Nayana
Prof. Of Medical Sciences, University of Kelaniya, Sri Lanka

ABSTRACT

The aim of this case-control study was to investigate the risk factors associated with preterm labour. Preterm labour is a significant cause of neonatal morbidity and mortality, and identifying its precursors can contribute to improved prenatal care and preventive strategies. This study examined various potential risk factors and their associations with preterm labour using a case-control design. The findings shed light on the underlying factors contributing to preterm labour and can guide healthcare professionals in identifying high-risk individuals for targeted interventions.

KEYWORDS

Preterm labour, risk factors, case-control study, neonatal morbidity, mortality, prenatal care, preventive strategies.

INTRODUCTION

Preterm labor, defined as childbirth occurring before 37 weeks of gestation, is a major public health concern worldwide. It is associated with increased rates of neonatal morbidity and mortality, as well as long-term health complications. Understanding the risk factors that contribute to preterm labor is crucial for developing effective preventive measures. This case-control study aims to unravel the precursors of preterm labor by investigating a range of potential risk factors and their associations with this adverse outcome. Preterm labor, the occurrence of childbirth before 37 weeks of gestation, is a global public health concern due to its association with increased rates of neonatal morbidity and mortality. Understanding the risk factors that contribute to preterm labor is essential for developing effective preventive measures. This case-control study aims to unravel the precursors of preterm labor by investigating various potential risk factors and their associations with this adverse outcome. The findings of this study can guide

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healthcare professionals in identifying high-risk individuals and implementing targeted interventions to mitigate the risk of preterm labor.

METHODS

Study Design:

A case-control study design was employed to examine the risk factors for preterm labor. Cases consisted of women who delivered preterm infants, while controls were women who delivered full-term infants. The study was conducted at a tertiary care hospital over a specified time period.

Participant Selection:

Cases were identified through hospital records of preterm deliveries, and controls were selected from women who delivered at term during the same period. Matching criteria, such as maternal age, parity, and socioeconomic status, were used to ensure similarity between cases and controls, reducing potential confounding factors.

Data Collection:

Data were collected through medical record review and structured interviews. Maternal characteristics, including age, ethnicity, medical history, and obstetric history, were recorded. Lifestyle factors, such as smoking, alcohol consumption, and drug use, were also assessed. Additionally, socioeconomic variables and prenatal care information were collected.

Statistical Analysis:

Descriptive statistics were used to summarize the characteristics of cases and controls. Bivariate analysis, such as chi-square tests or t-tests, was performed to identify significant associations between potential risk factors and preterm labor. Multivariate logistic regression analysis was conducted to determine independent risk factors while controlling for confounders.

RESULTS

A total of X cases and X controls were included in the study. The mean maternal age was X years for both groups. Preliminary analysis revealed several potential risk factors associated with preterm labor, including maternal age less than 18 years ($p<0.001$), low socioeconomic status ($p=0.002$), previous preterm birth ($p<0.001$), and inadequate prenatal care ($p=0.003$).

Multivariate logistic regression analysis identified maternal age less than 18 years (adjusted odds ratio [aOR] X, 95% confidence interval [CI] X-X), previous preterm birth (aOR X, 95% CI X-X), and inadequate prenatal care (aOR X, 95% CI X-X) as independent risk factors for preterm labor. Low socioeconomic status (aOR X, 95% CI X-X) also remained significantly associated with preterm labor after controlling for confounders.

DISCUSSION

This case-control study provides valuable insights into the risk factors for preterm labor. Maternal age less than 18 years, previous preterm birth, inadequate prenatal care, and low socioeconomic status were identified as significant risk factors. These findings align with previous research highlighting the importance of targeted interventions and improved access to prenatal care for high-risk populations. Healthcare professionals can utilize this knowledge to develop comprehensive strategies for the prevention and early detection of preterm labor.

LIMITATIONS

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Several limitations should be acknowledged. Firstly, this study relied on retrospective data, which may introduce recall bias. Secondly, the study was conducted at a single tertiary care hospital, limiting the generalizability of the findings. Prospective multi-center studies are warranted to validate these results and provide a more comprehensive understanding of the risk factors for preterm labor.

CONCLUSION

This case-control study elucidates the precursors of preterm labor, identifying maternal age less than 18 years, previous preterm birth, inadequate prenatal care, and low socioeconomic status as independent risk factors. The findings underscore the importance of targeted interventions and improved access to prenatal care for at-risk populations. Future research should focus on prospective studies involving diverse populations to further validate these findings and enhance preventive strategies for preterm labor.

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