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PERINATAL OUTCOMES IN TWIN PREGNANCIES: A PROSPECTIVE OBSERVATIONAL STUDY AT A TERTIARY CARE CENTRE

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ABSTRACT

Background: Twin pregnancies are associated with a significantly higher risk of adverse perinatal outcomes compared to singleton gestations. Prematurity, low birth weight, and early neonatal complications contribute substantially to perinatal morbidity and mortality in twins, particularly in low- and middle-income countries.
Objectives: To evaluate perinatal outcomes in twin pregnancies with special reference to fetal outcomes, neonatal mortality, and causes of early neonatal deaths.
Materials and Methods: This prospective observational study was conducted at a tertiary care centre. Pregnant women with twin gestations beyond the age of viability were enrolled. Perinatal outcomes of all neonates were assessed. Fetal outcomes, neonatal mortality, and causes of early neonatal deaths were analysed. Data were expressed as frequencies and percentages.
Results: A total of 200 neonates born from twin pregnancies were studied. Low birth weight was observed in 132 neonates (66%), of whom 44 (22%) were very low birth weight. Only 24 neonates (12%) had a birth weight greater than 2500 g. Stillbirths accounted for 16 cases (8%). Early neonatal deaths were recorded in 22 neonates, resulting in an early neonatal mortality rate of 11%. Respiratory distress syndrome was the leading cause of early neonatal deaths (59.09%), followed by birth asphyxia (22.7%) and neonatal sepsis (18.18%).
Conclusion: Twin pregnancies are associated with high rates of low birth weight, stillbirths, and early neonatal mortality. Prematurity-related complications remain the leading contributors to adverse perinatal outcomes. Strengthening antenatal surveillance and improving neonatal care services are essential to reduce perinatal morbidity and mortality in twin gestations.

Keywords*: Twin pregnancy; Perinatal outcome; Low birth weight; Neonatal mortality; Prematurity.*

INTRODUCTION

Twin pregnancies represent a distinct high-risk obstetric group owing to their strong association with adverse perinatal outcomes. Although twins constitute a small proportion of total births, they contribute disproportionately to perinatal morbidity and mortality [1]. The increased risk is largely attributed to prematurity, low birth weight, placental insufficiency, and intrapartum complications [2].

Globally, the incidence of twin pregnancies has increased over recent decades, mainly due to delayed childbearing and the widespread use of assisted reproductive technologies [3]. Despite advances in antenatal care and neonatal intensive care, perinatal outcomes in twin gestations continue to be inferior compared to singleton pregnancies, particularly in resource-limited settings [4].

Low birth weight is one of the most consistent adverse outcomes associated with twin pregnancies. Studies have shown that more than half of twins are born weighing less than 2500 g, significantly increasing their risk of respiratory distress,

sepsis, and early neonatal death [5,6]. Prematurity further compounds these risks, making the early neonatal period especially critical for survival [7].

Perinatal mortality in twin pregnancies is reported to be three to five times higher than in singleton gestations [8]. Stillbirths and early neonatal deaths contribute substantially to this burden. In developing countries, delayed referrals, limited antenatal surveillance, and inadequate neonatal intensive care facilities further worsen outcomes [9].

Institution-based studies provide valuable insight into local patterns of perinatal morbidity and mortality and help identify priority areas for intervention. The present study was undertaken to evaluate perinatal outcomes in twin pregnancies at a tertiary care centre, with a focus on fetal outcomes, neonatal mortality, and causes of early neonatal deaths.

OBJECTIVE

To assess perinatal outcomes in twin pregnancies at a tertiary care centre, with particular emphasis on fetal outcomes, neonatal mortality, and causes of early neonatal deaths.

MATERIALS AND METHODS

This prospective observational study was conducted at a tertiary care hospital, Government Medical College & J.K. Lon Hospital, Kota, Rajasthan. Pregnant women with confirmed twin gestations beyond the age of viability were included in the study after informed consent. Neonatal outcome data were recorded using a structured proforma. Perinatal outcomes of all neonates were assessed. Fetal outcomes, neonatal mortality, and causes of early neonatal deaths were analysed. Data were analysed descriptively and expressed as frequencies and percentages.

RESULTS

Among the 200 neonates born from twin pregnancies, low birth weight (<2500 g) was observed in 132 cases (66%). Of these, 44 neonates (22%) were classified as very low birth weight. Only 24 neonates (12%) had a birth weight greater than 2500 g. 34 (17%) were admitted in NICU for various reasons.

Out of the total 200 neonates, 38 (19%) perinatal deaths were recorded. Stillbirths were recorded in 16 cases (8%). Early neonatal deaths occurred in 22 neonates, resulting in an early neonatal mortality rate of 11%. All neonatal deaths were confined to the early neonatal period.

Respiratory distress syndrome was the leading cause of early neonatal deaths, accounting for 13 cases (59.09%). Birth asphyxia was responsible for 5 deaths (22.7%), while neonatal sepsis accounted for 4 deaths (18.18%).

Table 1: Fetal outcomes of twin preganacies

Fetal outcome	No. of cases (N=200)	%
Birth weight>2500grams	24	12
LBW 1500-2500grams	132	66
VLBW <1500grams	44	22
NICU Admission	34	17
Perinatal death	38	19

Table 2: Perinatal mortality in twin pregancies

Perinatal mortality	No. of cases (N=200)	%
Still births	16	8
Early neonatal deaths	22	11
Total perinatal deaths	38	19

Table 3: Various reasons of early perinatal deaths

Cause of death	No. of cases	% (out of total deaths) n=22	% (out of total neonates) N=200
Respiratory Distress syndrome	13	59.09%	6.50%
Birth asphyxia	5	22.73%	2.50%
Sepsis	4	18.18%	2.00%
Total	**22**	**100.00%**	**11.00%**

DISCUSSION

The present study demonstrates that twin pregnancies are associated with a high burden of adverse perinatal outcomes. Low birth weight was observed in two-thirds of neonates, with nearly one-quarter classified as very low birth weight.

These findings are consistent with previous studies that have identified low birth weight as a hallmark complication of twin gestations [10,11].

The proportion of neonates weighing more than 2500 g was low, reflecting the combined effects of prematurity and limited intrauterine growth in twin pregnancies. Similar observations have been reported in both Indian and international studies [12].

Stillbirths accounted for 8% of perinatal outcomes in this study. Although advances in antenatal care have reduced fetal losses, stillbirths remain a significant concern in twin pregnancies, particularly in settings with limited resources [13].

The early neonatal mortality rate of 11% observed in this study is higher than that reported for singleton pregnancies and aligns with findings from other tertiary care centres in developing countries [14]. The concentration of deaths in the early neonatal period highlights the vulnerability of twins immediately after birth.

Respiratory distress syndrome (RDS) emerged as the leading cause of early neonatal deaths, followed by birth asphyxia and neonatal sepsis. These findings underscore the dominant role of prematurity-related complications in determining neonatal survival in twin pregnancies [15,16]. Strengthening neonatal intensive care facilities and ensuring timely antenatal interventions such as corticosteroid administration may help improve outcomes in terms of mortality as well as morbidity esp in cases of RDS, birth asphyxia and neonatal sepsis [17].

CONCLUSION

Twin pregnancies are associated with high rates of low birth weight, stillbirths, and early neonatal mortality. Prematurity and its related complications remain the principal contributors to adverse perinatal outcomes. Enhanced antenatal surveillance, appropriate delivery planning, and improved neonatal care services are essential to reduce perinatal morbidity and mortality in twin gestations.

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