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Fetomaternal Outcome – A Study in Patients of Preterm Labour in Tertiary Care Center.

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ABSTRACT

Introduction

Preterm delivery and labor remain a major cause of perinatal morbidity and mortality.

Direct complications of preterm labor account for one million deaths each year, and preterm labor is a risk factor in over 50% of all neonatal deaths. Also, preterm labor can result in a range of long-term complications in survivors, with the frequency and severity of adverse outcomes increasing with decreased gestational age

Material and methods

A retrospective study was conducted in Obstetrics and Gynecology department in a tertiary hospital from July 2019 to January 2021. The prevalence of preterm labor, its associated factors and neonatal outcomes was studied.

Results

The prevalence rate of preterm labor was 20.86%. In fetuses who delivered above 32 weeks of gestation 38.46% patients had spontaneous vaginal delivery and 47.69% had lower segment cesarean section whereas in extreme preterm only 7.69% had hysterotomy. None of the fetuses below 28 weeks of gestation survived in this study.

Conclusion

Prevention, timely detection and expert management of common causes of preterm labor will help achieve better maternal and neonatal outcome. Study shows 50 to 60% causes of preterm labor are preventable if detected and treated timely. This helps in gaining few days to few weeks of intrauterine life for fetus in which it is not only precious but also life-saving. This helps in transferring the patient to tertiary center and giving steroids, role of antenatal corticosteroids in reducing morbidity and mortality in preterm births is well established for lung maturity.

I. INTRODUCTION

Preterm delivery and labor remain a major cause of perinatal morbidity and mortality. The incidence of preterm labor in India is 11-14%. The incidence of preterm labor between 32-36 weeks of gestation is 84% and between 28-31 weeks of gestation is 10% and it is 6% when gestational age is less than 28 weeks[(1)].

Direct complications of preterm labor account for one million deaths each year, and preterm labor is a risk factor in over 50% of all neonatal deaths. Also, preterm labor can result in a range of long term complications in survivors, with the frequency and severity of adverse outcomes increasing with decreased gestational age[(2)].Many survivors face a lifetime of disability, including learning disabilities and visual and hearing problems risk of cerebral palsy, cognitive impairment, psychiatric disorders and behavioral problems[(3,4)].

II. AIMS AND OBJECTIVES

- To understand the prevalence of preterm labor in our hospital.
- To study the neonatal outcome in preterm labor.

III. MATERIALS AND METHODS

This study was conducted in Obstetrics and Gynecology department in a tertiary hospital from July 2019 to January 2021.

The total no. of deliveries in the hospital during the above period was 5,511. The total number of preterm deliveries beyond 22 weeks were 1,150, which represent a prevalence rate of 20.86%.

A random 100 cases were taken for the purpose of detailed study from the total number of preterm labor.

INCLUSION CRITERIA

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- Pregnant women admitted with signs and symptoms of preterm labor of gestational age > 22 weeks but <37 weeks.
- Any patient whose pregnancy was terminated preterm for any maternal or fetal indication.
- Patients who presented with leaking per vaginum or antepartum hemorrhage.
- A single course comprising of four doses of Injection dexamethasone was given to all pregnant women with preterm labor (24-34 weeks of gestation) both induced and spontaneous.

EXCLUSION CRITERIA

- Pregnant women with fetal congenital anomalies incompatible with life detected by USG.
- Intrauterine fetal demise.

Data collection was taken by taking detailed history, physical, systemic and obstetrical examination ; baseline investigations.
Obstetrical outcome is recorded in terms of gestational age at the time of delivery, duration of labor, mode of delivery- vaginal, assisted vaginal delivery or cesarean delivery, details of perinatal outcome and complications if any.
Fetal outcome is recorded in terms of birth weight, NICU admission and neonatal outcome.

IV. RESULTS

TYPE OF PRETERM (n=100)			**EXTREME PRETERM (<28 WEEKS)**	**VERY PRETERM (28-31.6 WEEKS)**	**MID LATE PRETERM (32-37 WEEKS)**
			13 (100%)	**22(100%)**	**65(100%)**
MODE OF DELIVERY	SPONTANEOUS VAGINAL DELIVERY		6(46.15%)	13(59.09%)	25(38.46%)
	INDUCED VAGINAL DELIVERY		5(38.46%)	3(13.63%)	8(12.30%)
	ASSISITED VAGINAL BREECH DELIVERY		1(7.69%)	0	0
	FORCEPS		0	0	1(1.54%)
	LOWER SEGMENT CESAREAN SECTION		1(7.69%)	6(27.27 %)	31(47.69%)
COMPLICATIONS	RESPIRATORY DISTRESS SYNDROME		9(69.23%)	19(86.36%)	12 (18.46%)
	SEPTICEMIA		2(15.38%)	10(45.45%)	5(7.69%)
	NECTROTIZING ENTEROCOLITIS		2(15.38%)	0	1(1.54%)
	NEONATAL JAUNDICE		0	1(4.54%)	4(6.15%)
	INTRAVENTRICULAR HEMORRHAGE		9(69.23%)	8(36.36%)	2(3.08%)
NICU OUTCOME	NICU ADMISSION	WELL BABY	0	15(68.18%)	25(38.46%)
		EXPIREDBABY	13(100%)	6(27.27 %)	4 (6.15%)
	NO NICU ADMISSION		0	1(4.54%)	36(55.38%)

In this study 38.46% patients had spontaneous vaginal delivery and 47.69% had lower segment cesarean section above 32 weeks of gestation; whereas in extreme preterm only 7.69% had hysterotomy. Hence in extremely and very preterm there was significantly low rate of operative delivery as compared to mid late preterm. Most common neonatal complication observed in this study is Respiratory Distress Syndrome in whatever fetal gestation is; and is highest among very preterm births i.e. 86.36%. In our study fetuses <28 weeks survived.

Babies with mid late preterm deliveries, 93.84% of the survived and amongst them only 38.46% only required NICU admission; and babies who were born very preterm 72.72% of them survived and amongst them 68.18% required NICU admission.

V. DISCUSSION

In this study, majority of premature birth were in the age group 20-29 years. There is higher incidence of preterm birth in primi gravida patients. There is higher incidence of preterm birth in lower socioeconomic class.

In this study, preterm birth is more common in mother having weight less than 50 kgs. A study done by Zhen Han et al singletons born to underweight women have higher risks of preterm birth (overall, spontaneous and induced) and low birth weight than those born to women with normal weight [(5)] .

In this study, 46 cases showed evidence of some form of vaginal infections and 20 cases had urinary tract infection. Bacterial infections of genital tract and period of gestation when infection is diagnosed have influence on reducing perinatal morbidity and mortality caused by preterm delivery [(6)].

The threatened preterm labor and established preterm labor were frequently observed obstetric complication in daily practice. It may be spontaneous or iatrogenic. PPROM, bleeding in first trimester, pre-eclampsia and APH are topping the list of causative factors.

From various studies it has been observed that medical diseases during pregnancy increases the risk of preterm delivery. Anemias and Urinary tract infections was the commonest medical disease in this study 45% and 11.5% respectively. Anemia per se does not lead to preterm labor but if patients with anemia have complication such as infection it can lead to preterm delivery [(7)]. Urinary tract infection and vaginal infection are easily detectable and preventable cause for preterm labor.

Out of total number of live births 37 babies were healthy which did not require NICU admission and 63 babies required NICU admission. Neonatal mortality is 23%. Hence an increased rate of neonatal mortality due to prematurity can to a huge extent be prevented by early detection of preterm labor and timely intervention by administration of tocolytics and corticosteroids. Harding et al demonstrated the use of corticosteroids in preterm PROM before 34 weeks gestational age reduces perinatal morbidity and mortality by reducing the risk of respiratory distress syndrome , intraventricular hemorrhage and necrotizing enterocolitis.[(8)] A systematic analysis of global , regional and national causes of child mortality in 2013 identified preterm birth complications and infections to be the two major causes of neonatal deaths in India 43.7%. [(9)]

VI. CONCLUSION

Certain patients with the following predisposing factors like low socio-economic status, low maternal weight, teenage and elderly patients and young primigravida and Grand multipara have higher risk of preterm delivery. Prevention, timely detection and expert management of common causes of preterm labor will help achieve better maternal and neonatal outcome.

Clinical features like pain in lower abdomen, backache, vaginal discharge, shortening of cervix and vaginal bleeding are important and if noticed early are reversible. However, PPROM and established labor are late symptoms and often irreversible. Prevention of PPROM is proper rest counselling the patient and relatives and judicious use of tocolytic drugs definitely helps in prolonging pregnancy from few days to few weeks. Vaginal infections and recurrent symptomatic or asymptomatic urinary tract infection requires proper attention and treatment.

Study shows 50 to 60% causes of preterm labor are preventable if detected and treated timely. This helps in gaining few days to few weeks of intrauterine life for fetus in which it is not only precious but also lifesaving. This helps in transferring the patient to tertiary center and giving steroids, role of antenatal corticosteroids in reducing morbidity and mortality in preterm births is well established for lung maturity.

Other benefits like reduction in the incidence of PDA, reduction in systemic infections, decreased need for respiratory support and therefore reduced length of hospital stay, low rate of intensive care admissions and finally reduced cost of care.

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