

Assessment of Risk Factors and Management Associated With Preterm Deliveries and Their Outcomes in Tertiary Care Teaching Hospital GGH Hospital Jamnagar Gujarat, India

DR. NALINI I ANAND¹, DR PRITI S PUNATAR², DR. MONA D GANDHI³, DR NIRALIMALIVAD⁴

¹ Head of department and professor

² Additional professor & HOU, ³ Associate professor & HOU of OBGY department of GGH Jamnagar, Gujarat

⁴ Third year resident doctor (corresponding author)

Abstract

Background: Preterm is a major obstetrical challenge of health care. It is the top most cause of perinatal morbidity and mortality of neonatal deaths. The births of these neonates are at a greater risk of developmental disabilities, health and growth problems than neonates of full term.

Aim and objective: To assess the risk factors and management associated with preterm deliveries and their outcomes.

Materials & Methods: "A prospective observational cohort study was conducted over a period of 6 months on 80 Preterm subjects, who were enrolled based on inclusion and exclusion criteria. A detailed questionnaire was used to record socio-demographic, clinical profile and prescribing management. Statistical analysis was performed.

Results: Maximum preterm delivery were observed in the age group of 21 to 25 year of age group. Multiparous women's are at high risk for preterm delivery. Commonest risk factor for preterm delivery was infection/f/b anemia. Treatment prescribed for preterm was betamethasone, tidilon, MGSO4, progesterone. The common neonatal outcome was low birth weight with KMC & supplements of vitamin, iron, calcium as a therapy for their better recovery.

Conclusion: The study suggests an urgent need for strengthening effective guidelines and appropriate counselling for prevention of preterm. Maintenance of good hygiene, adequate bed rest and proper antenatal care visits for the better outcomes.

Keywords: preterm, multiparous, risk factors, neonatal outcomes, antenatal care, cohort

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I. INTRODUCTION:

Preterm birth additionally referred to as premature birth that states as "Babies born prematurely at intervals 28 weeks of gestation and before the 37 weeks of gestation. Preterm premature rupture of the membrane (PPROM), placental Previa, a previous history of preterm birth, placental abruption, recurrent UTI, anemia, gestational diabetes, pre-eclampsia and eclampsia, multiparity, previous cervical surgery, oligo/polyhydramnios, advanced maternal age, previous history of miscarriage and abortions and lifestyle habits such as smoking, alcohol, illicit drug use are the precise risk factors of preterm births. Birth canal infections appear to play a key role within the etiopathogenesis of premature delivery. Diagnosis of preterm labor relies on signs of labor, the length of the pregnancy, biochemical predictors, and ultrasound scan. Bed rest, Adequate hydration suggested for preventing preterm birth. Tocolytics: Isoxsuprine hydrochloride, Nifedipine, Nitroglycerine, Oxytocin, Cervical cerclage, antenatal corticosteroids, antibiotics for PPROM, magnesium sulfate, progesterone therapy and Kangaroo Mother Care are recommended for reducing the outcomes of preterm birth.

AIM AND OBJECTIVES:

- To evaluate the risk factors and management of Pre- Term Deliveries (PTDs) and their outcomes
- To assess the management and its outcomes in PTD.

II. METHODS:

This was a prospective observational cohort study. A total of 80 patients in (during 3 months of period in 2022) were included after confirmation through physical and USG abdomen examination in Gynaecology Department, Government Hospital, Jamnagar. Study was done for a period of 6 months. Our Study commenced after obtaining approval from the institutional ethical committee. Data includes demographic details, Chief complaints, past medical & medication history, marital history, obstetric history, height/weight, marital status, lifestyle & habits of the patients, family history, Objective Evaluation Data (General Examination, Physical Examination, and Systemic & Local Examination & Lab investigations like Hb), other investigations (USG), type of PTD diagnosed & treatment provided.

Inclusion Criteria:

- Cases include from 28 weeks to <37 weeks of gestation
- Cases include singleton and multiple pregnancies

Exclusion criteria:

- Cases with IUFD and congenital anomalies
- Cases with <28 weeks gestation

III. RESULTS

MANAGEMENT FOR SPECIFIC RISK FACTORS:

Table 1: Depicts the distribution of management for specific risk factors

S. NO	RISK FACTORS	MANAGEMENT
1.	Anaemia	Blood transfusion
2.	Pre-eclampsia	Anti hypertensives, Magnesium sulphate
3.	Oligohydramnios	Aminoacids
4.	UTI	Antibiotics, Alkalisers
5.	PPROM	Blood transfusion, Antibiotics
6.	Placental previa	Blood transfusion
7.	Eclampsia	Anti hypertensives, Magnesium sulphate
8.	Twins	Blood transfusion
9.	IUGR	Blood transfusion
10.	GDM	Anti-diabetic drugs
11.	Polyhydramnios	Blood transfusion
12.	HELLP syndrome	Anti-hypertensives, magnesium sulphate
13.	Threatened preterm	Progesterone therapy
14.	Hypothyroidism	Anti-thyroid drugs

TABLE 2: MANAGEMENT OF PRETERM

Mangement	Cases
Betasole coverage	73
MgSo4	15
Tidilon	9
Nil	4
Progesteron	1

TABLE 3: ILLUSTRATES THE DOMINANT NEONATAL COMPLICATIONS:

Neonatal complication	Cases
LBW	38
RDS	7
Jaundice	2
Apnea	1

Death	5
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Table 4: Distribution of neonates with specific management to their Complications

S.No.	Complication	Management	Number of Neonates
1	LBW	O2 Inhalation, Vitamin k	4
2	LBW	Paladai feeds, Calcimax, Vitamin D3	7
3	LBW	Paladai feeds, Calcimax, Vitamin D3, Zincovit	4
4	LBW, RDS	Paladai feeds, Calcimax, Vitamin D3, Zincovit, Nasoclear,Caffine, Rantac, KMC(kangaroo mother care)	1
5	Jaundice, LBW,RDS	Phototherapy, Paladai feeds, Calcimax, Vitamin D3,Zincovit, Nasoclear, Caffine	1
6	Jaundice	Phototherapy, Vitamin k, Intra Gastric Feeding	1
8	RDS, Apnea	Paladai feeds, Vitamin D3, Nasoclear drops	1
9	LBW	Vitamin k, KMC(kangaroo mother care)	1
10	LBW,RDS	Vitamin K, O2 inhalation, Dextrose10%, Taxim	1
11	LBW	Vitamin. k, Zinc, Vitamin D3, KMC (kangaroo mother care)	1
12	LBW	Vitamin K, zinc, Vitamin D3, Calcimax, KMC(kangaroomother care)	10
13	LBW, RDS	Vitamin k, zinc, Vitamin D3, Calcimax, nasoclear drops,O2 inhalation, KMC(kangaroo mother care),IntraGastric Feeding	3
14	LBW	Vitamin.K, Amikacin, Rantac, vitamin D3,Calcimax,Taxim,Paracetamol	1
15	LBW	Vitamin.K,O2 Inhalation ,zinc, calcimax, KMC(kangaroomother care)	4

IV. DISCUSSION:

In our study period, the more premature deliveries were within the age group of 18-29 years, i.e., around 65 (81%) and this coincides with studies conducted by DR.CHARITHA as they reported that maximum preterm deliveries occur within the age group of teenagers and elderly.

We observed more premature deliveries within the subjects with below primary education, i.e., around 43(54%), this data supported the study conducted by **Poonam Trivedi et al** as they describe that literature is one of all the barriers to the progress of premature deliveries.

In our study majority (78%) were late PTDs, and these findings are correlated with the studies conducted by **Shaveta Garg et al** and **Farhin Radhanpuri** as they showed that women with a gestation of >34 weeks or quite woman with 28-30 weeks. Around 16% of our study subjects have undergone abortions and this study correlates with **Mahajan et al** concluded that women (25%) with a history of abortions were at more risk for PTDs. We found that the majority of the women were having no history of miscarriage and only 2 women had a history. So, miscarriage isn't a reason/risk factor for PTDs in our study subjects.

In our study, 14% had a history of PTD, our findings correlate to the study conducted by **Mahajan et al** as they concluded that women with PTD history are at more risk for PTDs than term deliveries. We observed majority (44 %) of the study subjects were diagnosed with low hemoglobin level i.e. ≤ 8 gm/dl. In our study,17.5% of the subjects were found with oligohydramnios with an AFI of <8cm and 1.25% were with polyhydramnios (AFI >18 cm) and is correlated with the study conducted by **Mahajan et al** reported that 14% of their subjects were having oligohydramnios and polyhydramnios.

In our study, common risk factors among our subjects include anemia (45%) were prescribed with blood transfusion who was in danger and this data coincides with the study conducted by **Farhin Radhanpuri et al**. Anti- hypertensives and prophylactic Magnesium sulfate were prescribed for preeclampsia women (24%), these findings are associated with the study conducted by **Baha M. Sibai et al** as they said that prophylactic magnesium sulfate improves the neuronal development of the fetus and prevents seizures.

UTI (15%) will be treated with antibiotics, alkaliser, antispasmodic, as these can decrease the infection, reduce the acidic nature of the urine, burning micturition, and reduces the symptoms like leaking of urine respectively, this data correlated with the study carried out by **Oscar Storms et al**. Antibiotics and blood transfusion was prescribed for PPRM (15%), placental previa (10%), and these findings are correlated with the study administered by **N Medley et al, Lawrence Oppenheimer et al** as they said that antibiotics are needed for PPRM, placental previa respectively. Eclampsia (7%) can be treated by antihypertensives and magnesium sulfate.

In our study, prescribed management for preterm mothers includes, betamethasone as in 91% of pregnant women to enhance perinatal outcomes and this data correlates with the study conducted by **Kristen**

Rundell et al they said that it's going to decrease the possibilities of neonatal complications; Isoxsuprine hydrochloride in 11% pregnant women to cause uterine relaxation and prolongs the pregnancy and this data relates with the study conducted by **Vaja Pradyuman et al** they reported that it's going to delays the delivery up to 48 hrs. Magnesium sulfate is given to 19% of pregnant women to reinforce neural protection in the fetus, these findings are correlated to the study of **Kristen Rundell et al** they conclude that antenatal magnesium sulfate may reduce the chance of preterm and improve neonatal development .

In our study, we observed the Low birth weight is the common neonatal complication i.e., around 47% and this data coincides with the studies carried out by **Lerna Desalegn Hailu et al** as they summarize that LBW is one of the common complications in neonates who born prematurely. At our study site, neonatal complications like LBW, neonatal illness were treated with KMC, paladai feeds and O2 inhalation.

V. CONCLUSION:

This study concluded that preterm birth is an important reason for neonatal poor prognosis and death. The incidence rate of preterm birth was occurring in teenagers and the elderly due to several risk factors, which is due to poor literacy rate and low economic status. Low birth weight was found to be the commonest complication. Provider-initiated preterm birth can be minimized by early detection of risk factors. Therefore, early detection and treatment of a disease may reduce the risk of preterm birth. The risk of PTD and neonatal complications can manage by improving the quality of health of the mother with the help of medication. Health education, counseling will encourage pregnant women to seek antenatal care. Maintaining appropriate oral hygiene, adequate rest, and refrain from sexual activities, which may reduce the risk of preterm birth and improve better outcomes in neonates. There is a need for strengthening existing guidelines for the prevention of preterm birth and for managing neonatal outcomes.

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