Original Article

EXAMINING MATERNAL AND FETAL OUTCOMES IN THE EARLY STAGES OF EMBRYONIC MEMBRANE FORMATION

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ABSTRACT

Background: *Premature rupture of membrane (PROM) is defined as rupture of membrane before 37 completed weeks. This study aims to evaluate the maternal and fetal outcomes after the recommended treatment for PPROM and to observe maternal and fetal effects after that recommended treatment.*

Objectives : *Determining probable difficulties, safeguarding the health of the mother and fetus throughout pregnancy, and comprehending the development and function of the amnion and chorion are among the goals of studying maternal and fetal outcomes in early embryonic membrane formation.*

Study design : *A observational Study*

Duration and place of study: *This observational research was conducted at the Mardan Medical Complex Hospital's Gynecology and Obstetrics Department. In this research, 100 PPROM patients were enrolled between July 2018 and August 2019*

Method: *In 2019, this research was carried out at the Gynae A Ward of the Mardan Medical Complex Hospital. For our study, 100 PPROM patients were included. We tracked maternal and fetal parameters throughout our trial, from the beginning of PROM until delivery, including the manner of delivery, infant weight, Apgar score, and postnatal conditions for both the mother and the newborn.*

Results: *Thirty of the one hundred patients we included for our research had PPROM far from the term, whereas seventy patients had PPROM close to time. The delay was lower for PPROM closer to the time. Ten individuals developed LSCS, while ninety of the 100 women had vaginal births. While 80 patients remained stable over the course of the research, 20 individuals had maternal morbidity. Five stillbirths occurred among the approximately 95 live births. Twenty babies suffered from newborn septicemia and RDS.*

Conclusion: Intensive monitoring during labour and postpartum NICU care are necessary for the birth of a preterm baby. Management is feasible only at tertiary care institutions with superior NICU facilities. Senior obstruction should decide on prudent management and induction.

Keywords: *Intraventricular Hemorrhage (IVH), Neonatal Death (NND), Neonatal Sepsis (NNS), Preterm Premature Rupture of Membrane (PPROM), (NICU)*

INTRODUCTION

Premature The rupture of the fetal membranes before 37 weeks of pregnancy is known as premature rupture of membranes (PPROM). Most of the time, it occurs 3. round term or 37 weeks, but sometimes, it appears much earlier and is far more difficult to treat. Thirty per cent of premature births are caused by PPROM, which affects 3% of pregnancies [1]. Of neonat [1], prematurity accounts for 85% of morbidity and death. Extremely high perinatal morbidity and death are linked to preterm pregnancy; however, these risks decrease when preterm pregnancy is followed by birth at a near-term gestational age [1]. The effect of well-managed PROM distant from 37 weeks on perinatal morbidity and morbidity is much higher.

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The obstetrician caring for the patients with PPROM should be knowledgeable about managing the condition, capable of spotting any complications, and know how to handle them [2].Patients with PROM are at a heightened risk for cord prolapse and compression, as well as chorioamnionitis and its associated 5 morbidities.

There is a higher chance of surgical deliveries for these individuals. Over 70% of patients with PROM give birth in less than 48 hours. The interval between the rupture of the membranes and the start of labour or any complication requiring an immediate delivery determines when cautious treatment should begin.[3]Reducing complications such as sepsis and enhancing maternal and perinatal morbidity and death are the goals of PROM therapy.

Subclinical infection is possible without maternal indications as to why these individuals' biochemistry should be checked again every 48 hours. To avoid sepsis and the associated consequences, these patients are given injections of amoxicillin or, if they are susceptible, erythromycin as a preventative treatment. [4-5]

MATERIAL AND METHODS

This observational research was conducted at the Mardan Medical Complex Hospital's Gynecology and Obstetrics Department. In this research, 100 PPROM patients were enrolled between July 2018 and August 2019.Every patient had received a thorough examination, history, baseline investigations, and an ultrasound examination. Along with a complete obstetric history and analysis, a sterile speculum examination was conducted to check for alcohol collections in the posterior fornix of the vagina.

An ultrasound examination was conducted to check for decreased amniotic fluid after the confirmation of PPROM by speculum examination. Blood type, haemoglobin percentage, total and differential white cell count, and ESR were all investigated in a laboratory.

We performed vaginal swabs on women who showed signs of infection and submitted the samples for sensitivity and culture.Individuals with postpartum depression who did not exhibit any symptoms of infection were treated conservatively, whereas those who did were treated aggressively.

Prophylactic antibiotics with conservative therapy, starting with intravenous amoxicillin Two grams, then 1 gram intravenously every hour for 24 hours, and then 250 mg of amoxicillin taken orally every 8 hours for 10 days. Patients allergic to penicillin will be given tabs containing 500 mg of erythromycin every 8 hours. Intramuscular delivery of 12 mg of dexamethasone divided into two doses spaced 12 hours apart in pregnancies under 34 weeks.

We watched for fever, chorioamnionitis symptoms, and labour in both the mother and the fetus. Fetuses are also monitored with biweekly ultrasound examinations for any compromises. Mothers are monitored for infection symptoms, including fever (above 38 C), uterine soreness, fetal and maternal tachycardia, and bad-smelling amniotic fluid.

According to protocol, every patient who had a complication such as fever, chorioamnionitis, fetal compromise, or gestational age of 36 weeks or more was delivered by either an induction or a C-section.

Following their birth for ten days, these patients were monitored during labour and delivery. The birth mode, the baby's weight, the baby's Apgar score, the mother's indications of endometritis, and the fetal and maternal outcomes were all documented.

RESULT

The research included a maximum of 60 female patients, of whom 30 were between 30 and 40, while the other patients were above 40—table Number One. There were no patients from the high class among the 93% of patients we recruited for our research who belonged to the low socioeconomic class and 7% to the middle-class Table No. 2.Of the patients, 60 were primigravidas, 25 had a gravity of 2, and the remaining 15 had a gravity of 3 or higher. Patients with gestation ages that were off from term required a longer period of conservative care; patients with gestation ages of 36 weeks or more were delivered by induction or, if necessary, C-section Table No. 3.

Ten patients had gestations between 25 and 30 weeks, twenty had pregnancies between 31 and 35 weeks, and the other patients were all beyond 35 weeks. TTable Number: Four: 4.Fifteen patients underwent C-sections, while eighty-five patients had vaginal births. Five individuals with chorioamnionitis were brought to the emergency room.

Patients receiving conservative care did not have

chorioamnionitis. Ten patients had pyrexia, three had PPH, and two experienced abruption. Table Number: Five.Newborn respiratory distress syndrome was the most prevalent perinatal consequence in the current research, accounting for 80% of all infant morbidities and comorbidities, followed by pneumonia (30%) and neonatal sepsis (10%). Table Number: 6.Neonatal born less than thirty weeks gestation had a higher rate of complications compared to those born at least 35 weeks gestation. Forty newborns needed to be admitted to the nursery. Fifteen deliveries had a poor Agar rating. This Apgar score is lower than 5.

Table 1: Age of Patients

Age in years	Patients no
21-30	60
30-40	30
40 & above	10

Table 2: Socio Ecnomic Status

Socio Ecnomic Status	Patients No
Poor	93
Middle Class	7
Upper Class	0

Table 3: Gravidity of Patients

No of Patients	Gravidity
60	PG
25	G2 P1
15	G3 P2 or more

Table 4: Gestation of Patients

No of Patients	Gestation
10	25-30 weeks
20	31-35 weeks
70	35 weeks & above

Table 5: Maternal Complication

No of Patients	Maternal Complication
2	Abruption
3	PPH
10	Pyrexia

DISCUSSION

Numerous national and international research on the outcomes of pregnant women and their fetuses have shown that patients from lower socioeconomic categories have higher rates of perinatal morbidity and death than those from higher socioeconomic groups [6].A ten-year research on a large population of PPROM patients' fetal and maternal outcomes in Nigeria revealed that 10 secondary PPH, depression, pyrexia, and psychosis were the most prevalent maternal sequelae. According to their research, poor Apgar scores, pneumonia, neonatal enteropathy, and respiratory depression were the most frequent prenatal morbidities. In their investigation, they 7 discovered 7% of perinatal deaths. [7] Even though our research was conducted over a shorter period and with a smaller patient population than the Nigerian study, we can see that our maternal and fetal difficulties are comparable to theirs. [8] In a public hospital in Mekele City, Natnaell E, Hailemarim B, and Guesh W studied the risk factors for early rupture of the membrane. According to their research, people who have previously had PPROM are more susceptible to certain risks during an index preg- nancy, such as genitourinary infections. Nevertheless, this demographic statistic should have been included in our analysis. This is because we limited our research to the outcomes of mothers and newborns. [9.] Saira Dar, Safia Malik, Dr. Irum, and Prof. Roshan performed a study at Liaqat University in Hyderabad, Sind, Pakistan. Additionally, they studied 100 patients in various age ranges. They claimed that 72% of the PPROM patients were from poor socioeconomic backgrounds, 21% were from middle-class backgrounds, and 7% were from higher-class backgrounds. In our research, 93% of the participants were impoverished, which may have been related to the fact that we worked at a government hospital where we saw everyday cases of the underprivileged. Otherwise, the results of our research and theirs are almost identical. [10]

Incidence of PPROM was found to be 64.5% in primigravida, 17.8% in gravida II, and 17.75% in multigravida in the research by Arij Faksh DOA Et Al. The incidence of PPROM was 7.2%, with 48.8% of cases occurring between 34 and 36 weeks, 26%

between 31 and 33 weeks, 14.4% between 28 and 30 weeks, 3.4% at 27 weeks, and 7.2% at less than 26 weeks. Research by Joelle M. Lieman et al. indicated that 43% of women with PPROM were primigravida. [11]

The rate of cesarean sections in the research by Tahir, Aleem M. et al. was 14%, whereas the pace in the study by Fatemeh Tauassoli et al. was 32.0%. [12]

A prospective research conducted by Fatemeh Tauassoli et al. found that the incidence of placental abruption was 5.8% and chorioamnionitis was 5%; however, no cases of chorioamnionitis were found in our investigation. We may have given antibiotics to every patient, which might be the reason. 5-6% of women who had several cervical exams, protracted labour, or ruptured membranes and are at high risk of infection following vaginal birth develop endometritis. An increased risk of chronic uterine disease is seen in cases of intrapartum chorioamnionitis (1Thirteen). [13]

CONCLUSION

Preterm birth, which results in significant neona- tal morbidity and death as well as maternal morbidity, is most often caused by PPROM. The financial cost of caring for a preterm baby falls on both the govern- ment and the parents. To get over this load, precise conservative administration of PPROM is crucial. Additionally, this may be decreased by treating preg- nant patients for infections, enhancing their health, doing routine prenatal exams, and treating anaemia throughout pregnancy.

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