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ORIGINAL ARTICLE

Planned Domiciliary Versus Hospital Care Provided for Women with Premature Rupture of Membranes

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Abstract

Background: Premature rupture of membranes (PPROM) is the term used to describe the spontaneous breaking of the fetal membranes before 37 weeks of pregnancy, with at least one hour passing between the rupture and the start of contractions.

Aim and objectives: To reduce the incidence of maternal and newborn morbidity and mortality associated with premature rupture of membranes (PPROM).

Patients and methods: This prospective comparative study was conducted on 100 women divided into two equal groups, who will undergo delivery following home or hospital care following PROM during the study period from October 2021 to October 2022, presenting to the Obstetrics and Gynecology Emergency Department in AL-Hussein University Hospital, for delivery after receiving either a hospital or home care for PPROM between 30 weeks to 34 weeks gestational age.

Results: The tested groups' age, BMI, and parity did not show any significant differences. The hospital group substantially reduced the length of stay compared to the home group (P value<0.001). The mode of birth and gestational age at delivery did not show significant differences among the groups under study. The neonatal and maternal outcomes showed no significant differences between the groups under study.

Conclusion: Regarding the mode of delivery, gestational age at delivery, and neonatal and maternal outcomes. The groups did not exhibit any statistically significant differences. Although shorter hospital stays may benefit, these findings imply that overall, hospital care does not significantly affect mother and newborn outcomes in PROM cases.

Keywords: Planned Domiciliary; Hospital Care; Premature Rupture of Membranes

1. Introduction

Several factors contribute to the increased risk of premature rupture of membranes (PPROM), including a history of preterm birth, being of black ethnicity, genetic predisposition, socio-economic status, smoking, low maternal body weight, carrying multiple fetuses, nutritional deficiencies, previous cervical conization, cervical cerclage, amniocentesis, experiencing vaginal bleeding during pregnancy, and infection.[1]

The exact physiological mechanisms that cause PPROM need to be better comprehended. However, these factors may include excessive stretching of the membranes caused by the uterus being overly stretched (as shown in many pregnancies) or an increase in the amount of fluid surrounding the fetus (referred to as polyhydramnios). Additional possible factors include membrane abnormalities leading to reduced collagen levels, placental abruption, or infection-related problems.[2]

Concerning the repercussions of PROM, around 25% to 50% of women with PPROM will develop an infection upon presentation. Additionally, PPROM can lead to immediate complications, including cord prolapse, cord compression, and placental abruption. It can also result in later issues, including maternal or newborn infection, and may necessitate interventions such as labor induction, cesarean section, or assisted vaginal delivery. Approximately 50% of women with PPROM are expected to enter labor within one week, whereas 75% are expected to do so within two weeks.[3]

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Previous studies suggest that fetal complications are specifically associated with the timing of delivery during pregnancy. Multiple researchers have noticed reduced health issues among newborns born after 34 weeks of pregnancy. Infants delivered after 34 weeks' gestation experienced a significant decrease in the occurrence of respiratory distress syndrome (RDS), hyperbilirubinemia, and length of residence in the neonatal nursery in comparison to those born earlier.[4]

Nevertheless, a prolonged rupture of the membranes without amniotic fluid enveloping the fetus can impact the development of the lungs, heightening the likelihood of lung hypoplasia and significant respiratory difficulties during childbirth, as well as limb motions, resulting in postural abnormalities.[5]

Mothers are more likely to experience prenatal, postpartum, and placental abruption. While major infections happen in about 5% of newborns after PPROM, significant complications for mothers are rare. Chorioamnionitis, a maternal infection that occurs during pregnancy, can cause severe problems in the fetus, such as septicemia and cerebral palsy.[6]

The way that different facilities, local rules and regulations, individual doctors, and settings themselves handle premature prelabour rupture of the membranes (PPROM) differs. In an American study of obstetric units, formal management protocols were present in 30% of the units.[7]

The goal of the current study is to lessen the rates of morbidity and mortality that arise from PPROM in mothers and newborns.

2. Patients and methods

This prospective comparative study was conducted on 100 women divided into two equal groups, who will undergo delivery following home or hospital care following PPROM during the study period from October 2021 to October 2022, presenting to the Obstetrics and Gynecology Emergency Department in AL-Hussein University Hospital, for delivery after receiving either a hospital or home care for PROM between 30 weeks to 34 weeks gestational age.

2.1.Ethical consideration: The Al-Azhar Faculty of Medicine's Ethics Committee should approve every study protocol. The local research and ethics committee should approve the study protocol. The patient participants will be informed of the methods and goals of the study. Data confidentiality shall be guaranteed, maintained under all conditions, and framed with honesty and regard for the patient's dignity. Patients ought to be aware of the study's benefits—there is no risk of injury to the patients involved, either real or imagined; patients involved in the study are free to leave at any moment and without explanation.

2.2.Inclusion criteria: Women who presented at the emergency department suffering from PPROM, singleton pregnancy, the age range of 18-40 years, women who received medical care for PPROM at home (regarding the home care group), women who were hospitalized for management of PPROM (regarding the hospital group) and gestational age between 30 weeks to 34 weeks.

2.3.Exclusion criteria: Congenital fetal anomalies, symptoms, and signs of infection at the time of presentation, medical disorders such as hypertension and gestational diabetes, placental abruption at the time of presentation, and cervical dilatation at the time of presentation.

Type of ultrasound used: Philips HD5 Diagnostic ultrasound system manufactured in September 2015.

Figure 1. Shows abrubrio placenta 33 weeks.

Figure 2. Shows abrubrio placenta 26 weeks.

Figure 3. Shows retroplacental heamatoma 34 weeks.

The sample size: was computed utilizing the

subsequent formula: (Dawson and Trapp.[8]

$$n = 2\left[\frac{(Z_{\propto/2} + Z_{\beta}) * \sigma}{\mu_1 - \mu_2}\right]^2$$

Where: Z = 1.96 (the critical value dividing the central 95% of the Z distribution from the 5% in the tail), Zβ = 0.84 (the critical value dividing the lower 20% of the Z distribution from the upper 80%), σ = the standard deviation estimate = 5, μ1 = mean of gestational age in the home group = 9.9, μ2 = mean of gestational age in the hospital group = 6.2 in this case. (Dussaux et al.,[9])

2.4.Sampling technique:

Convenient sampling was used to recruit women eligible for the study based on the inclusion and exclusion criteria.

Independent variables (Patients baseline variables):

Hospital management protocol for PPROM (number of days being hospitalized before delivery) and home care for PPROM (regimen followed at home).

2.5.Dependent variable:

Neonatal morbidity and mortality: Stillbirth, neonatal death, neonatal sepsis, respiratory distress syndrome, pneumonia, and hypoxic-ischemic encephalopathy.

Maternal morbidity: Clinical chorioamnionitis, clinical endometritis, prepartum hemorrhage after PPROM, blood transfusion after PPROM, cord prolapse, length of stay in the neonatal intensive care unit, and gestational age at delivery.

Confounding variables: None.

All patients were subjected to General characteristics (including age, parity, mode of delivery, and causes of PPROM), ultrasound by (PHILIPS HD5 Diagnostic Ultrasound System, length of hospital stay prior to delivery, and treatment received, length of home care prior to delivery and type of treatment received, neonatal morbidity and mortality outcomes and maternal morbidity.

2.6.Statistical analysis:

The statistical analysis was conducted using SPSS v26 (IBM et al., USA). The normality of the data distribution was evaluated using the Shapiro-Wilks test and histograms.

The unpaired student t-test was utilized to examine the quantitative parametric data, which were displayed as the mean and the standard deviation (SD). The average and interquartile range (IQR) were used to present quantitative non-parametric data; This Mann Whitney criteria was employed to evaluate them.

The frequency was examined using either the Chi-square test or, when appropriate, Fisher's exact test as the percentage (%) of the qualitative data. A statistically significant value was defined as a two-tailed P value ≤ 0.05. Relationships The different variables were ranked against each other, either directly or indirectly, using the coefficient test (r-test). The relationships among independent variables and at-home versus in-hospital care will be investigated using the X2=Chi-square test. A test of insignificance is defined as P>0.05, while a test of significance is defined as P < 0.05.

3. Results

Table 1. Features of the investigated groups' mothers.

		HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
AGE (YEARS)	Mean ± SD	31.88 ± 4.8	32.22 ± 4.96	0.728
	Range	23-40	23-40	
BMI (KG/M^2)	Mean ± SD	26.91 ± 3.71	26.48 ± 3.5	0.556
	Range	20.52-35.38	20.9-34.93	
PARITY	Nulliparous	22 (44%)	24 (48%)	0.688
	Multiparous	28 (56%)	26 (52%)	
GESTATIONAL AGE (WEEKS)	Mean ± SD	34.54 ± 1.83	34.86 ± 1.6	0.355
	Range	30-34	30-34	

BMI: body mass index.

Age, BMI, parity, and gestational age were not statistically different among the groups under study.

Table 2. Causes of PPROM of the studied groups.

	HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
POLYHYDRAMNIOS	14 (28%)	12 (24%)	0.782
PLACENTAL ABRUPTION	13 (26%)	15 (30%)	
CERVICAL INCOMPETENCE	10 (20%)	13 (26%)	
INFECTION	13 (26%)	10 (20%)	

PROM: premature rupture of membranes.

The study groups did not significantly differ in the causes of PPROM.

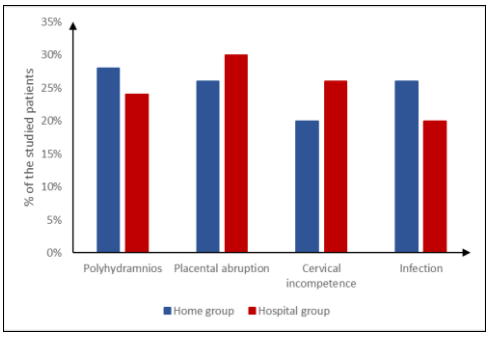

Figure 4. reasons for the investigated groups' PPROM.

Table 3. Management and delivery characteristics of the studied groups.

		HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
MODE OF DELIVERY	NVD	35 (70%)	34 (68%)	0.829
	CS	15 (30%)	16 (32%)	
GESTATIONAL AGE AT DELIVERY (WEEKS)	Mean±SD	30.56±3.36	31.16±2.99	0.347
	Range	34-37	34-37	
LENGTH OF STAY DURING MANAGEMENT (DAYS)	Mean±SD	15±0.83	11.18±1.57	<0.001*
	Range	14-16	9-13	

NVD: natural vaginal delivery, CS: cesarean section, *: significant as P value ≤ 0.05

The hospital group's length of stay during management was considerably shorter than that of the home group (P value < 0.001). There were no appreciable differences in the modes of delivery or gestational ages at delivery across the groups under study.

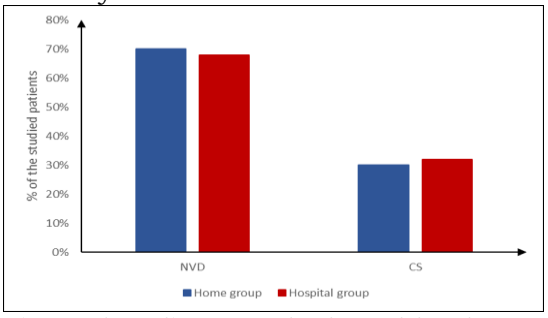

Figure 5. Delivery method used by the groups under study.

Table 4. outcomes for newborns in the groups under study.

	HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
NEONATAL WEIGHT (G)	2248.08±137.06	2243.9±138.74	0.880
STILL BIRTH	1 (2%)	0 (0%)	1.000
NEONATAL SEPSIS	1 (2%)	1 (2%)	1.000
RESPIRATORY DISTRESS SYNDROME	4 (8%)	2 (4%)	0.678
PNEUMONIA	3 (6%)	1 (2%)	0.617
HYPOXIC ISCHEMIC ENCEPHALOPATHY	0 (0%)	0 (0%)	---
NICU STAY (DAYS)	6.33±3.51	4±1.41	0.454
NEONATAL DEATH	6 (12%)	3 (6%)	0.487

Data presented as mean ± SD or frequency (%), NICU: neonatal intensive care unit

Neonatal outcomes were significantly between the studied groups.

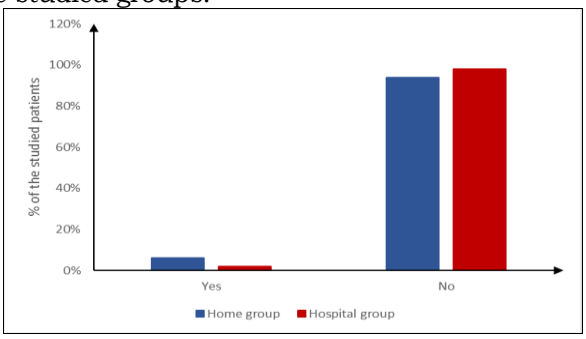

Figure 6. The groups under study had pneumonia.

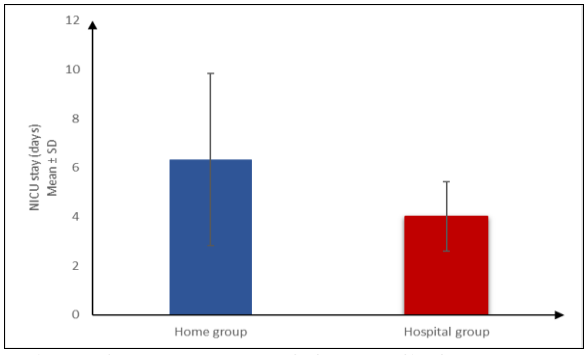

Figure 7. NICU stay of the studied groups.

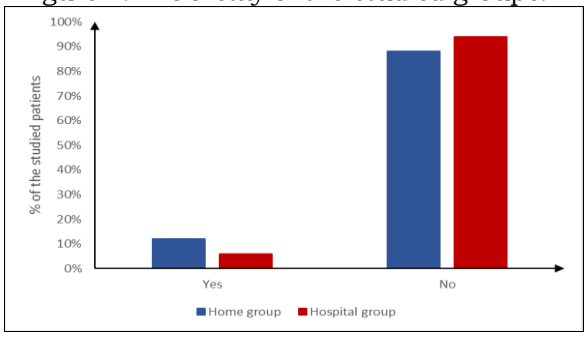

Figure 8. Newborn deaths in the categories under study.

Table 5. Results for mothers in the groups under study.

	HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
CHORIOAMNIONITIS	6 (12%)	4 (8%)	0.741
ENDOMETRITIS	7 (14%)	4 (8%)	0.525
PREPARTUM HEMORRHAGE AFTER PROM	7 (14%)	5 (10%)	0.760
BLOOD TRANSFUSION AFTER PROM	6 (12%)	4 (8%)	0.741
CORD PROLAPSE	2 (4%)	1 (2%)	1.000

PROM: premature rupture of membranes

No noticeable variation in maternal outcomes was observed among the groups being studied.

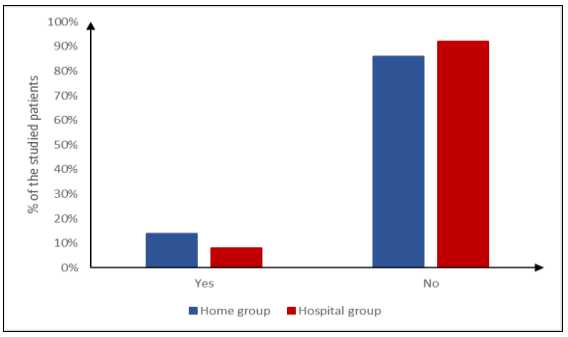

Figure 9. Endometritis of the studied groups.

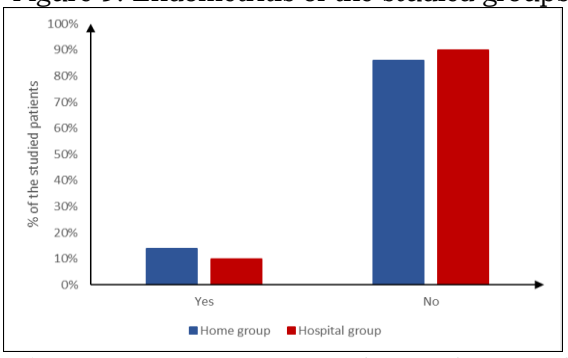

Figure 10. Prepartum hemorrhage after PPROM of the studied groups.

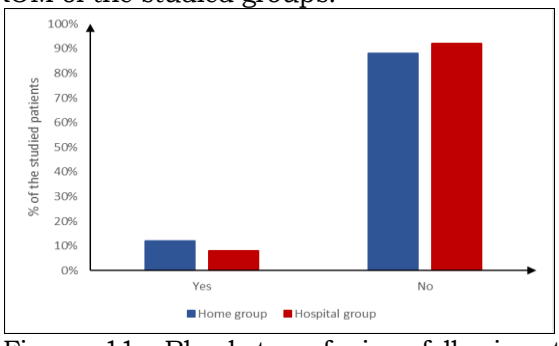

Figure 11. Blood transfusion following the research groups' PPROM.

Table 6. Management and delivery characteristics of the studied groups.

		HOME GROUP (N=50)	HOSPITAL GROUP (N=50)	P VALUE
MODE OF DELIVERY	NVD	35 (70%)	34 (68%)	0.829
	CS	15 (30%)	16 (32%)	
GESTATIONAL AGE AT DELIVERY (WEEKS)	Mean ± SD	30.56 ± 3.36	31.16 ± 2.99	0.347
	Range	34 - 37	34 – 37	
LENGTH OF STAY DURING MANAGEMENT (DAYS)	Mean ± SD	15 ± 0.83	11.18 ± 1.57	<0.001*
	Range	14 - 16	9 – 13	

NVD: natural vaginal delivery, CS: cesarean section, *: significant as P value ≤ 0.05

Length of stay during management was significantly decreased in hospital group than home group (P value < 0.001). Mode of delivery and gestational age at delivery were insignificantly different between the studied groups.

4. Discussion

The rupture of the fetal membranes prior to 37 weeks of gestation and labor is known as preterm prelabour rupture of the membranes (PPROM). Uncertainty surrounds the pathophysiology of spontaneous PROM; risk factors may include prior PPROM, preterm labor, smoking, multiple gestations, cervical insufficiency, and antepartum hemorrhage.[10]

Within our research, the hospital group experienced a substantially shorter stay during management than the home group (P value < 0.001).

This agrees with Ammar et al.[11] The objective was to ascertain whether there were any disparities in the outcomes for both the mother and the fetus when comparing home and hospital prenatal therapy in women with premature rupture of membranes (PPROM). They discovered that, in terms of the length of hospital stay, there was a very statistically significant difference (p<0.001) between the home and hospital groups.

Conversely, Carlan [12] A randomized study compared home versus hospital therapy for individuals with premature rupture of the membranes (PPROM) to assess the latency phase duration, gestational age at delivery, and safety level in a carefully selected group. According to their research, the number of days mothers spent in the hospital and the amount they spent there decreased significantly in the home group.

Naef et al.[13] discovered a reduction in antepartum hospitalization among the 120 women randomized to either immediate delivery or expectant care.

The birth method and the gestational age at delivery did not significantly differ among the groups under investigation in our study.

Maternal and newborn outcomes in our study did not differ statistically across the groups under investigation.

This is similar to Ammar et al.[11], who found that, in terms of delivery mode or unfavorable mother or newborn outcomes, there was no significant association (p>0.05) between the two groups.

This also agreed with Ryan [14] According to the source, it was reported that there was no variation in the age of gestation at delivery among the different groups. Regarding the latency time (the interval between PPROM and delivery), there was again no discernible variation between the groups. Additionally, they claimed that neither NICU admissions nor five-minute Apgar ratings differed significantly between groups.

In a comparable investigation conducted by Guckert et al.[15] regarding neonatal outcomes, the outpatient group had fewer transfers to neonatal intensive care and a lower incidence of respiratory distress syndrome than the hospital group (29.4%

versus 47.5%; p < 0.001). Additionally, the outpatient group had lower rates of neonatal sepsis (13.9% versus 22.1%; p < 0.037), long-term neonatal lung disease (20.2% versus 36.3%), bronchodysplasia (2.7% versus 9.8%), and pulmonary artery hypertension (4.8% versus 10.3%). The outpatient group saw a lower incidence of infant death (2.1% versus 3.9%); there was a noticeable difference despite the lack of statistical significance.

Also, Dussaux et al.[9] observed that infants born to women who received ambulatory care had increased birth weight, reduced need for NICU admission, and shorter NICU stays if admitted.

Our findings contradict a prior study with 395 women who were included following PPROM. Of them, 191 were treated as outpatients, while 204 were hospitalized. The latency time in the domiciliary group was significantly longer than in the hospital group, with a median duration of 39.0 (20, 66) days compared to 21.0 (13, 42) days; p < 0.001.[16]

Based on a recent study conducted by Baser et al.,[17] the elevation in latencies does not exacerbate the newborn prognosis but instead reduces problems.

In a retrospective study by Bouchghoul et al.[18], a study has shown that instituting an outpatient treatment strategy (OCP) for cases of preterm premature rupture of membranes (PPROM) between 24+0 to 33+6 weeks of gestation does not lead to higher rates of newborn illness or death compared to an inpatient care policy (ICP). The incidence of severe acute complications, such as placental abruption, cord prolapse, or intrauterine death, did not show a higher frequency in centers that followed an outpatient policy. Following propensity score matching, there was no observed elevation in the likelihood of newborn morbidity and neonatal sepsis among patients receiving outpatient care.

Combs et al. the study determined that tocolysis lasting more than 48 hours did not result in a longer period before labor or a decrease in neonatal problems when compared to no tocolysis or tocolysis lasting less than 48 hours.[19]

Lorthe et al., in a recent study, demonstrated that tocolysis, when used in situations of preterm premature rupture of membranes (PPROM), does not lead to improved outcomes for both the mother and the newborn.[20]

Spinnato examined a total of 47 individuals diagnosed with preterm premature rupture of membranes (PPROM) who had confirmed fetal lung maturation. The patients were randomly assigned to receive an immediate or later delivery. The use of expectant management was linked to a higher incidence of maternal sepsis, although the study did not have the statistical power to identify any substantial neonatal morbidity.[21]

Mercer et al., a study involving 93 participants, revealed a statistically insignificant 52% rise in maternal infectious morbidity when using expectant management. However, the occurrence of abdominal delivery and neonatal infection remained constant.[22]

Naef et al. there are no clinically meaningful newborn benefits to expectant treatment of membrane rupture at this gestational age, according to a study that randomly assigned 120 women to expectant care or prompt delivery. The sample size was too small to identify variations in respiratory distress that would be clinically meaningful or changes in sepsis.[13]

4. Conclusion

Intramedullary fixation of mid-shaft clavicular The groups did not exhibit any notable disparities in birth method, gestational age at delivery, or outcomes for both the newborns and mothers. These findings indicate that although hospital treatment may provide benefits in terms of reduced hospital stays, it does not significantly affect overall mother and newborn outcomes in cases of PPROM.

Disclosure

The authors have no financial interest to declare in relation to the content of this article.

Authorship

All authors have a substantial contribution to the article

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Conflicts of interest

There are no conflicts of interest.

References

1. Finneran MM, Appiagyei A, Templin M, Mertz H. Comparison of Azithromycin versus Erythromycin for Prolongation of Latency in Pregnancies Complicated by Preterm Premature Rupture of Membranes. Am J Perinatol. 2017;34(11):1102-1107.
2. Melamed N, Ben-Haroush A, Pardo J, et al. Expectant management of preterm premature rupture of membranes: is it all about gestational age?. Am J Obstet Gynecol. 2011;204(1):48.e1-48.e488.
3. Romero R, Dey SK, Fisher SJ. Preterm labor: one syndrome, many causes. Science. 2014;345(6198):760-765.
4. Bulut C, Gürsoy T, Ovalı F. Short-Term Outcomes and Mortality of Late Preterm Infants. Balkan Med J. 2016;33(2):198-203.

5. Tchirikov M, Schlabritz-Loutsevitch N, Maher J, et al. Mid-trimester preterm premature rupture of membranes (PPROM): etiology, diagnosis, classification, international recommendations of treatment options and outcome. J Perinat Med. 2018;46(5):465-488.
6. Millar LJ, Shi L, Hoerder-Suabedissen A, Molnár Z. Neonatal Hypoxia Ischaemia: Mechanisms, Models, and Therapeutic Challenges. Front Cell Neurosci. 2017;11:78.
7. Maloni JA. Antepartum bed rest for pregnancy complications: efficacy and safety for preventing preterm birth. Biol Res Nurs. 2010;12(2):106-124.
8. Dawson, B.; Trapp, RG. Basic and clinical biostatistics. 4th ed. USA: McGraw-Hill.2004.pp 1- 416.
9. Dussaux C, Senat MV, Bouchghoul H, Benachi A, Mandelbrot L, Kayem G. Preterm premature rupture of membranes: is home care acceptable?. J Matern Fetal Neonatal Med. 2018;31(17):2284-2292.
10. Toukam ME, Luisin M, Chevreau J, Lanta-Delmas S, Gondry J, Tourneux P. A predictive neonatal mortality score for women with premature rupture of membranes after 22-27 weeks of gestation. J Matern Fetal Neonatal Med. 2019;32(2):258-264.
11. Ammar, EE.; Hussein, AM.; Khaled, RA. Hospital Versus Home Management in Women with Pre-Labor Rupture of Membranes: RCT. QJM: An International Journal of Medicine.2020; 1;113(Supplement_1):hcaa056-005.
12. Carlan SJ, O'Brien WF, Parsons MT, Lense JJ. Preterm premature rupture of membranes: a randomized study of home versus hospital management. Obstet Gynecol. 1993;81(1):61-64.
13. Naef RW 3rd, Allbert JR, Ross EL, Weber BM, Martin RW, Morrison JC. Premature rupture of membranes at 34 to 37 weeks' gestation: aggressive versus conservative management. Am J Obstet Gynecol. 1998;178(1 Pt 1):126-130.
14. Ryan, G., Oskamp, M., Seaward, P. G. R., Kitch, T., Barrett, J., & Brennan, B. Randomized controlled trial of inpatient vs outpatient management of PPROM. Am J Obstet Gynecol.1999; 180(1 Pt 1), S95.
15. Guckert M, Clouqueur E, Drumez E, et al. Is homecare management associated with longer latency in preterm premature rupture of membranes?. Arch Gynecol Obstet. 2020;301(1):61-67
16. Guckert M, Clouqueur E, Drumez E, et al. Is homecare management associated with longer latency in preterm premature rupture of membranes?. Arch Gynecol Obstet. 2020;301(1):61-67.
17. Bouchghoul H, Kayem G, Schmitz T, et al. Outpatient versus inpatient care for preterm premature rupture of membranes before 34 weeks of gestation. Sci Rep. 2019;9(1):4280.
18. Bouchghoul H, Kayem G, Schmitz T, et al. Outpatient versus inpatient care for preterm premature rupture of membranes before 34 weeks of gestation. Sci Rep. 2019;9(1):4280.
19. Combs CA, McCune M, Clark R, Fishman A. Aggressive tocolysis does not prolong pregnancy or reduce neonatal morbidity after preterm premature rupture of the membranes. Am J Obstet Gynecol. 2004;190(6):1723-1731.
20. Lorthe E, Goffinet F, Marret S, et al. Tocolysis after preterm premature rupture of membranes and neonatal outcome: a propensity-score analysis. Am J Obstet Gynecol. 2017;217(2):212.e1-212.e12.
21. Spinnato JA, Shaver DC, Bray EM, Lipshitz J. Preterm premature rupture of the membranes with fetal pulmonary maturity present: a prospective study. Obstet Gynecol. 1987;69(2):196-201
22. Mercer BM, Crocker LG, Boe NM, Sibai BM. Induction versus expectant management in premature rupture of the membranes with mature amniotic fluid at 32 to 36 weeks: a randomized trial. Am J Obstet Gynecol. 1993;169(4):775-782.