2014. Present study group consist of 130 pregnant women with PTL, PPROM.

Inclusion Criteria: 1.PTL, 2.PPROM

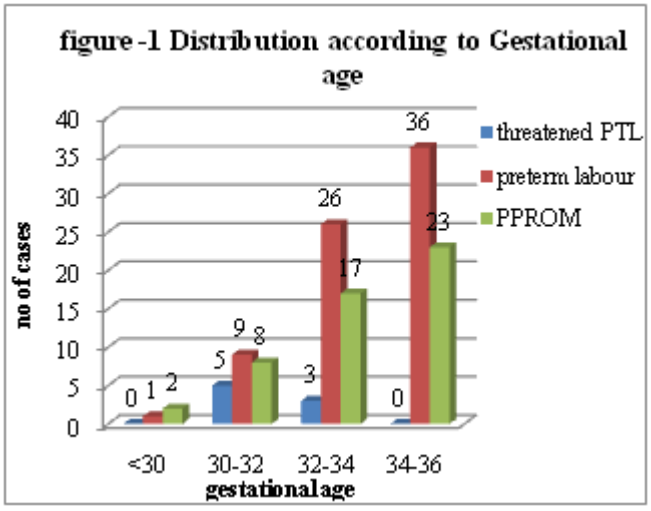
Exclusion criteria: 1.PTL and PPROM in patients with polyhydramnios. 2. PTL and PPROM in patients with multifetal gestation. 3. PTL and PPROM resulting from invasive techniques like amniocentesis, cordocentesis, cervical encirclage. 4.PTL and PPROM with preeclampsia, eclampsia, DM, placental abruption, congenital anomalies. The ethical committee of hospital approved the study. Women admitted for PTL and PPROM at the department of OBG in Government Maternity Hospital Tirupati were enrolled. Each subject gave an informed consent. The women taken were at a gestational age of 28 to 36 completed weeks on the basis of the menstrual period combined with Ultrasonographic data. A detailed history, physical and speculum examination, cervical swab and culture were dData coding: MS EXCEL,SSPS-SOFTWARE, CHI SQUARE TEST,P VALUE taken as significant if <0.05

Collection of Specimen:-From the cervix swab taken and in microbiology lab culture and sensivity done.

3. Results

PTL was seen more commonly in age group 21-25 years accounting for 51.39%. 34.72% of PTL were in < 21 yrs. 52%of patients in PPROM were in the age group of 21-25 years. 40% of patients were in the age group of <21years. 37.5% of patients presented with Threatened PTL were in the age group of 21-25 years. 37.5% of patients were in the age group of <21years.

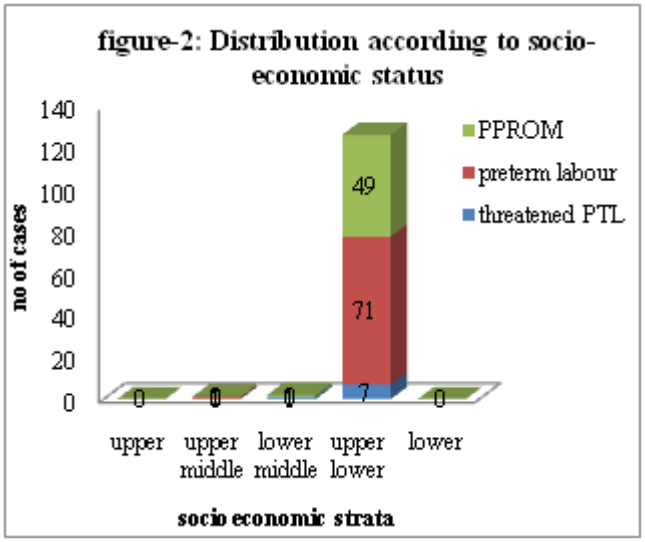
The p value was 0.598 and it was not significant. PTL and PPROM was seen more in primi gravidas (PG) accounting for 50% and 62% respectively. Second gravidas(SG) accounted for 33.33% and multi gravidas (MG)accounted for 32% in PTL.
SG accounted for 32% and third gravidas accounted for 6% in PPROM.50% of patients with threatened PTL were primi gravidas. While SG & MG accounted for 50%.The p value was 0.34 and it was not significant.



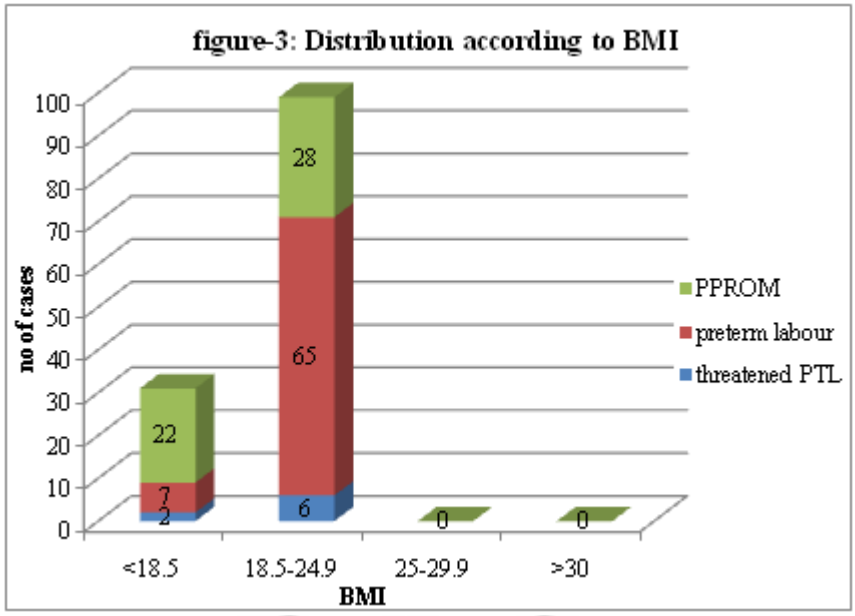
PTL and PPROM were more commonly seen in gestational age of 34-36 weeks accounting for 50% and 46% respectively. While threatened PTL seen between gestational age of 30-32 weeks is accounting for 62.5%. PPROM accounts for 4% and PTL accounts for 1.39% in < 30 weeks gestational age. The p value was <0.01 and was significant. Most of patients PTL/PPROM/threatened PTL were house wives.10% of patients of PPROM were coolies while 9.72% of patients of PTL were coolies.**The p value was <0.6 and it was not significant.** ***Chi square=17.07,p<0.009s***

Distribution of patients according to education: PTL / PPROM and threatened PTL were common among primary school and middle school 105 cases. 4.17 % PTL were illiterates while 2 % PPROM were illiterates

The p value was <0.009 and it was significant.



PTL was in upper lower 98.61%.PPROM was in upper lower 98%. Threatened PTL was in lower Socio Economic Class.87.5%. The p value was 0.05 and it was significant.



44% of PPROM mothers had low body mass index of less 18.5 while 9.72% of PTL mothers had BMI < 18.5 TPTL accounting for 25% with BMI less than 18.5. The p value was <0.0001 and it was significant. None of Mothers were Smokers. 3 cases (37.5%) of TPTL, 13 cases, (18.06%) of PTL and 17 cases (34%) of PPROM were passive smokers. The p value was <0.09 and it was not significant. Culture**:** Out of 130 cases of cervical swab culture study, 54 cases were positive and 76 cases were sterile. 25% positive cultures seen in threatened PTL, whereas PTL it was 34.72%, 54% positive cultures were obtained in PPROM. The p value was <0.3 and it was not significant**.**

E.coli formed the largest group of positive culture study 15.38%Staphylococcus aureus was isolated in 12.31%,klebsiella was seen in 4.62%, streptococcus agalactiae 0.77%, Enterococcus 1.54%, Diphtheroids 2.31%.Mixed infections was seen in 4.62% of cases.

a. E.coli and klebsiella
b. E.coli and staphylococcus aureus
c. Klebsiella and staphylococcus aureus

In threatened PTL the commonest organism isolated was E.coli 2 culture positive..In PTL E.coli, (11 positive cultures) was the commonest organism isolated. 5 culture positive of S. Aureus, 3 culture positive of Klebsiella, 1 culture positive of S. Agalactiae, 1 culture positive of Enterococcus, 1 culture positive of Diptheroids, 3 culture positive of mixed infections. In PPROM- commonest organism isolated was S. Aureus (11 culture positive). 7 culture positive of E.coli, 3 culture positive of klebsiella, 1 culture positive of Enterococcus, 1 culture positive of Diphtheroids, 3 culture positive of mixed infections. The p value was <0.3 and it was not significant.

Table 1: Positive Culture in Respect to Gestational age:

ORGANISM	< 32 WEEKS	32-36 WEEKS
E.coli	3	17
Staph aureus	3	14
Klebsiella	0	5
s.agalactiae	0	1
Enterococcus	1	1
Diphtheroids	0	3
Mixed	0	6

Chi square=5.07,p<0.5ns

Table 2: Antibiotic Sensitivity of Organism

Organism	*Sensitivity*	*Resistance*
E.coli	AK, G, IPM	AMC, AMP, CAP, COT
Staph .aureus	G, CIP, IPM	AMP, CTX, COT
Klebsiella	AK, IPM	AMC, AMP, CTX
s.agalactiae	CAC, VA	CTX
Enterococcus	AMC, AMP, VA	CTX, CIP, E
Diphtheroids	G, IPM	CTX
Mixed a. E.coli+ Klebsiella b. E.coli+ S.aureus c. Klebsiella+ S.aureus	 a. AK, GM b. AK, GM, Cd c. AK, GM	 a. AMP, CTX b. AMP, CTX c. AMC, AMP

Table shows Amikacin, Gentamycin, and Imipenem as effective antibiotics in majority of cases. However, resistance to ampicillin and cefotaxime noted.

Table 3: Maternal Outcome

	Threatened PTL	PTL	PPROM	%
Puerperal Infection	0	1	5	4.62
Positive cervical swab culture	2	25	27	41.54
Mode of Delivery				
Normal vaginal delivery	72	46	118	96.72
InstrumentalDelivery	0	0	2	1.64
EMLSCS	0	0	2	1.64
Need for NICU admission of baby	0	23	16	31.97

5 cases of PPROM and one case PTL had puerperal infection. Out of 8 TPTL 2 were culture positive, out of 72 cases of PTL 25 were culture positive while in case of PPROM out of 50, 27 were culture positive. Normal vaginal delivery was the commonest mode of delivery 118 cases (96.72%) while instrumental delivery rate was two cases (1.64%) and caesarean section rate was two cases (1.64%).Out of 8 cases of threatened PTL, all cases were conserved. Out of 122 births, 39 babies (31.97%) needed NICU admission. E.coli was isolated more common at 32-36 weeks period of gestation followed by staph.aureus.

Staphylococcus aureus and E.coli was isolated more commonly at <32 weeks period of gestation. The p value was <0.5 and it was not significant.

Table 4: Fetal Outcome

	Number	Percentage
Birth weight(kg)		
<1.5	7	5.74
1.5-2	50	40.98
2.1-2.5	40	32.79
>2.5	25	20.49
RDS	14	11.48
Sepsis	2	1.64
IVH	0	0
NE	0	0
MAS	1	0.82
BA	3	2.46
NC	1	0.82
Fetal Mortality	14	11.48

Out of 122 births,7 babies(5.74%) were <1.5kg,50 babies(40.98%) were in between 1.5-2kg,40 babies (32.79%) were in between 2.1-2.5kg and 25 babies(20.49%) were >2.5kg. Of the different complications seen in the neonates, RDS 11.48%, NS 1.64%, MAS 0.82%, BA 2.46%, NC 0.82%.Neonatal death was seen in 14 neonates out of 122 births.

Table 5: Rupture of membranes to delivery interval and maternal & fetal outcome:

Rom of delivery interval	No. of cases	Culture positive	Maternal Morbidity	Neonatal infection
12-24 hrs	23	11	3	3
>24 hrs	5	4	2	2

PROM to delivery interval crosses beyond 24 hrs chances of infection is more. Out of 5 cases, 4 were culture positive 2 cases landed in puerperal pyrexia and 2 babies had neonatal infection. (1 had neonatal sepsis and 1 had RDS).

4. Discussion

PPROM is common among patients who were in between 15-25 years(58.8%). Holst E (1994)[10] reported that no women with preterm labour were younger than 19 years and one was more than 40 yrs old. In the present study majority of the patients with preterm labour(51.39%) and PPROM(52%) were in between 21-25 yrs. This is probably because most of our obstetric population is in this age group.

Cwikla AK (2011)(6) reported preterm deliveries common in PG(59.3%), SG(38.81%) and MG(1.89%) while in the present study PTL common in PG54.62%), SG32.30% and MG for 13.08%.

Table 6: Distribution according to Parity

STUDY	*Primi gravida*	*Second gravida*	*multipara*
Cwikla AK et. al.[18]	59.3%	38.81%	1.89%
Present Study	54.62%	32.30%	13.08%

Holst E(1994)[10] showed 68.18% women delivered at a gestational age less than 34 weeks . 31.82% delivered in between 34-36 weeks. Cwikla AK(2011) [18]showed 4.05% women delivered at a gestational age less than 34 weeks, 7.98% in between 34-36 weeks and 87.97% delivered above 37 weeks. In the present study 54.62% women delivered at a gestational age less than 34 weeks, 45.38% In between 34-36 weeks.

Table 7: Distribution according to Gestational Age

Study	*< 34 weeks GA*	*34-36 weeks GA*	*>37 weeks GA*
Holst E et.al.[10]	68.15%	31.82 %	-
Cwikla AK et.al(6)	4.05%	7.98%	87.97%
Present Study	54.62%	45.38%	-

Moutquin JM(2003)(1) showed preterm birth common in women standing up for more than two hours. In the present study 9.2% were coolies associated with preterm birth, remaining 90.80% were housewives. HackenhaarAA(2013)(7)showed 44.7% women had 8 yrs or less of schooling. Noor S(2005) [16] showed 71.7% were educated up to primary and middle school where as 22.3% were uneducated. In the present study PTL is common among with primary and middle school accounting for 80.77% and 3.08% were illiterates.

Table 8: Distribution according to Education:

Study	*Primary & Middle School*	*Illiterates*
Hackenhaar AA et.al(7)	44.7%	-
Noor S et.al[11]	71.7%	22.3%
Present Study	80.77%	3.08%

Noor S (2005)[16] showed preterm birth is common in women belonging to low socio- Economic class(68.2%), while it was in frequent among high socio-Economic class while in the present study 97.70% of preterm births belongs to upper lower socio-Economic status. Moutquin JM (2003) (1)showed BMI<20 associated with preterm birth. Steer P(2005) showed preterm birth was common with BMI < 18. In the present study 23.85% of preterm births were with BMI < 18.5 and 76.15% were with BMI between 18.5-24.9

Shah NR (2009)(9) showed for light smoking, the pooled estimate with 95% confidence interval was 1.25. Moderate smoking 1.38 and for heavy smoking 1.31. In the present study there is no maternal smoking, but 25.38% of preterm births associated with passive smoking. Noor S(2005)[(11)]showed 69.4% patients had no previous history of preterm deliveries. While 30.60% had one or more previous preterm delivery. In the present study 89.23% had no previous history of preterm delivery while 10.77% had previous history of preterm delivery.

Table 9: Previous History of PTB

Study	Previous H/o PTD
Noor S et.al[11]	30.6%
Present study	10.77%

Vaishali T(2014)(8) showed 59% patients were culture positive, 41% were sterile. Cwikla AK(2011) [18] showed 52% were culture positive, 48% sterile. In the present study 41.54% were culture positive, 58.46% were sterile.

Table 10: Positive & Negative Cultures

Study	Positive Culture	Negative Culture
Vaishali T et.al(8)	59%	41%
Cwikla AK et.al(6)	52%	42%
Present study	41.54%	58.46%

Moutquin (2003)(1) infection accounted for 25% of all PPROM cases while 16% in preterm labour. In our study 54% of PPROM while, 34.72% in PTL. In studies by Vaishali T[19] out of 31 cases 20 cases of positive culture in threatened PTL 18 cases were conserved and 2 had PTD. In the present study out of 8 cases of threatened PTL 2 cases were culture positive and all treated. E.coli was isolated . Vaishali T(8). Holst E[10] showed E.coli was isolated. In the present study E.coli was 15.38% .This is in accordance with the above studies. Cwikla AK (6)showed Enterococcus faecalis was most common isolated organism.

Table 11: Most Common Organism in Positive Cultures:

Study	1st	2nd	3rd	4TH
Vaishali T et.al (8)	E.coli	Candida	-	-
Holst E [10]	E.coli	Klebsiella	S. aureus	-
Cwikla AK et.al (6)	Enterococcus faecalis	Strep. agalactiae.	Candida	E.coli
Present study	E.coli	Staph. aureus	Klebsiella	Mixed Organisms

Table 12: Organisms With Respect To Gestational Age

Study	< 32weeks GA	32-36 weeks GA
Cwikla AK et.al(6)	E.coli, Klebsiella, Candida	Strep. agalactiae, Enterococcus, candida, Mixed Infections
Present study	E.coli, Staph. aureus	E.coli, Staph. aureus, Klebsiella, Mixed Infections, Strep. agalactiae.

This study done by Vaishali T(8) showed gentamycin, cefotaxim, cephelexin is effective in E.coli. Here the organism is sensitive to amikacin, gentamycin and impinenem while resistance to ampicilin and cefotaxime noted.

Table 13: Antibiotic Sensitivity of Organism:

Study	Sensitivity	Resistance
Vaishali T et.al(8)	GM, CTX, Cephalexin	-
Present Study	AK,GM,IPM	CTX, AMP

In the study by Noor S[16]normal vaginal delivery was the commonest mode of delivery 56 cases (65.86%). While instrumental delivery rate was 20% (17) and caesarean section rate was 14%(12). In the present study normal vaginal delivery is the commonest mode of delivery 118 cases (96.72%). While instrumental delivery rate was 2 (1.64%) and caesarean section rate was 2 (1.64%) 39 babies (31.97%) needed NICU admission.

Table 14: Mode of Delivery

Mode Of Delivery	Noor Set.al [16]	Present Study
Normal vaginal delivery	65.86%	96.72%
Instrumental Delivery	20%	1.64%
EMLSCS	14%	1.64%

In the study by Vaishali T(8)out of total 72 births 31 neonates had complications. RDS 38.7% neonatal deaths was seen in 3 neonates out of 72 births. In the present study out of 122 births 39 neonates had complications RDS 11.48%, NS 1.64%, BA 2.46%, MAS 0.82%, NC 0.82% neonatal death was seen in 14 neonates out of 122 births.

Table 15: Fetal Outcome

Study	RDS	Neonatal Death
Vaishali T et.al(8)	38.7%	4.17%
Present Study	11.48%	11.48%

In the present study 5 cases delivered beyond 24 hrs of preterm premature rupture of membranes. Out of 5, 4 were culture positive 2 cases had puerperal pyrexia and 2 babies had neonatal infection. (Neonatal Sepsis: 1, RDS: 1)

Conclusion: Timely detection and treatment is important to avoid prematurity, associated neonatal morbidity and mortality.

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