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Original Research

Reasons for prolonged antenatal admissions in labor room emergency before term and their complications along with Feto-Maternal outcomes

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ABSTRACT

Background: Women who come to the hospital in early labor are often admitted when they are still in the latent phase. The present study was conducted to assess reasons for antenatal admissions in labour room before term, their associated hospital acquired complications and feto-maternal outcomes.

Materials & Methods: The present rretrospective observational study was done from March 2022 to February 2023, at Nalanda Medical College and Hospital, Patna. All pregnant female patients admitted in NMCH, LRE before 37 completed weeks of gestation with hospital stay more than 48 hours before delivery were included. Their age, parity, residence (for distance from hospital), gestational age, complains at admission, duration of hospital stay, complications developing during the hospital stay and fetal outcomes were recorded.

Results: Out of total 4251 labor room admissions, 91 patients had prolonged hospital stay of more than 48 hours who admitted before term. 78 had age <30 years and 13 had age >13 years. Parity was primi in 32, multi in 55 and grand multi in 4 cases. Gestational age was T1 in 5, T2 in 7 and T3 in 79 cases. The difference was significant (P< 0.05). >15 days hospital stay was seen in 3, 14 days in 3, 8 days in 4, 7 days in 1, 6 days in 3, 5 days in 5, 4 days in 20, 3 days in 24 and 2 days in 28 patients. Outcome of vaginal delivery was live birth in 23, IUD in 3 and VBAC in 1, caesarean section was live in 22 and IUD in 1, LAMA in 15 and discharged/ referral in 23 cases. The difference was significant (P< 0.05). Complications were fever, cough in 7, UTI in 5, Lethary, Sleeplessness, Constipation, Deranged LFT in 10, Deranged Coagulation Profile/DVT with Pulmonary Thromboembolism in 1 and Pulmonary edema d/t anemia with sepsis in 1 case. The difference was significant (P< 0.05).

Conclusion: Overall, the average duration of stay before child-birth is less than 48 hrs. But in some the duration may extend up to 14-15 days. The main aim was to complete antenatal steroid coverage in gestational age between 28 to 36 weeks along with neuro-protection. As preterm birth is a primary cause of neonatal morbidity and mortality in India. Identification and prompt treatment of hospital acquired infections is necessary to reduce maternal morbidity.

Keywords: antenatal, labor, emergency

Introduction

For pregnant women with labor onset at home, especially if nulliparous, it may be very difficult to determine the right time to go to the hospital.[1] Women who come to the hospital in early labor are often admitted when they are still in the latent phase.[2] Postponing admission until the onset of the active phase of labor is a suggested approach to reduce obstetric interventions in women with spontaneous labor at term, with the fetus in vertex presentation. This decision should be individualized according to maternal and fetal risks and status.[3] However, while some studies found an association between admission in the latent phase of labor and an increased risk of obstetric interventions, prolonged hospital stays, and higher health care costs, others did not.[4] For instance, the use of epidural analgesia and oxytocin for augmentation of labor were found to be three and two times more frequent, respectively, in women admitted in the

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latent phase than in those admitted in the active phase of labor.[5]

Duration of hospital stay is used as a surrogate to evaluate health care efficiency, as well as hospital resource utilization.[6] Prolonged duration of stay is associated with increased morbidities and poor outcomes in mother and child. 50 to 98% maternal deaths are due to direct obstetric causes like - hemorrhage, infection, hypertensive disorders and anaemia.[7,8] Here, we discuss reasons for antenatal admissions in labour room before term, their associated hospital acquired complications and feto-maternal outcomes.

The present study was

Materials & Methods

The present rretrospective observational study was done from March 2022 to February 2023, at Nalanda Medical College and Hospital, Patna. All gave their written consent to participate in the study.

Inclusion criteria were all pregnant female patients admitted in NMCH, LRE before 37 completed weeks of gestation with hospital stay more than 48 hours before delivery.

Exclusion criteria were all pregnant female patients admitted in LRE before 37 weeks of gestation but delivered within 48 hours from time of admission.

Data such as name, age, etc. was recorded. Their age, parity, residence (for distance from hospital), gestational age, complains at admission, duration of hospital stay, complications developing during the hospital stay and fetal outcomes were recorded. This demographic data was compared with total number of admissions, vaginal deliveries and Caesarean Sections at NMCH in that year. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table: I Demographic data

Parameters	Variables	Number	P value
Age	<30yrs	78	0.02
	>30yrs	13	
Parity	Primi	32	0.05
	Multi	55	
	Grand multi	4	
Gestational age	T1	5	0.04
	T2	7	
	T3	79	

Out of total 4251 labor room admissions, 91 patients had prolonged hospital stay of more than 48 hours who admitted before term. 78 had age <30 years and 13 had age >13 years. Parity was primi in 32, multi in 55 and grand multi in 4 cases. Gestational age was T1 in 5, T2 in 7 and T3 in 79 cases. The difference was significant (P< 0.05).

Table II Duration of hospital stay

Days	2	3	4	5	6	7	8	14	>15
No. of Pts.	28	24	20	5	3	1	4	3	3

Table II shows that >15 days hospital stay was seen in 3, 14 days in 3, 8 days in 4, 7 days in 1, 6 days in 3, 5 days in 5, 4 days in 20, 3 days in 24 and 2 days in 28 patients.

Table: III Assessment of outcome

Parameters	Variables	Number	P value
Vaginal delivery	Live	23	0.01
	IUD	3	
	VBAC	1	
Caesarean Section	Live	22	0.01
	IUD	1	
LAMA		15	0.27
Discharge/ referral		23	

Table III shows that outcome of vaginal delivery was live birth in 23, IUD in 3 and VBAC in 1, caesarean section was live in 22 and IUD in 1, LAMA in 15 and discharged/ referral in 23 cases. The difference was significant (P< 0.05).

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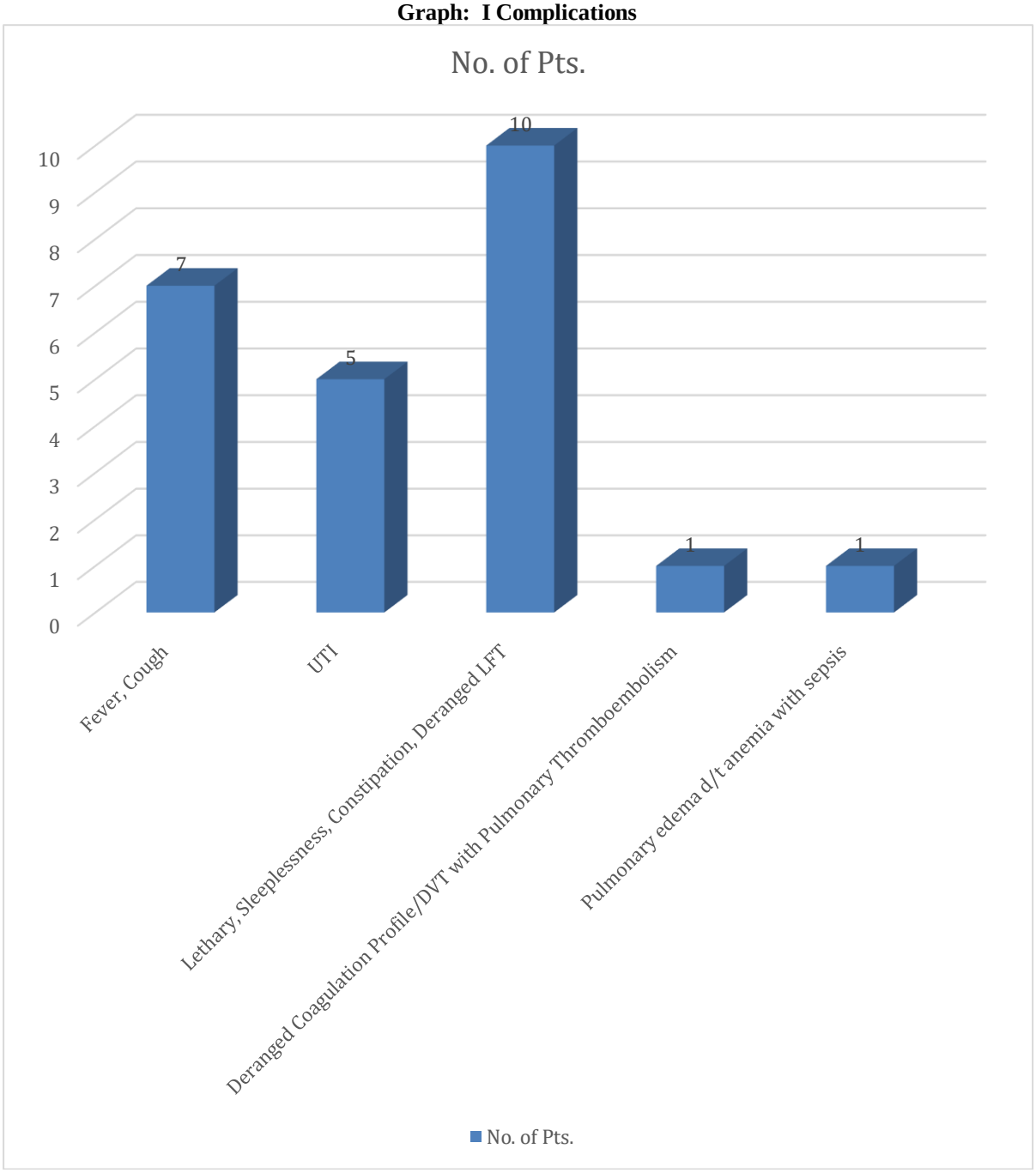
Table: IV Complications

Complications	No. of Pts.	P value
Fever, Cough	7	0.01
UTI	5	
Lethary, Sleeplessness, Constipation, Deranged LFT	10	
Deranged Coagulation Profile/DVT with Pulmonary Thromboembolism	1	
Pulmonary edema d/t anemia with sepsis	1	

Table IV, graph I shows that complications were fever, cough in 7, UTI in 5, Lethary, Sleeplessness, Constipation, Deranged LFT in 10, Deranged Coagulation Profile/DVT with Pulmonary Thromboembolism in 1 and Pulmonary edema d/t anemia with sepsis in 1 case. The difference was significant (P< 0.05).

Graph: I Complications



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Discussion

Recommendations on preventing the primary cesarean delivery removed the previously defined time limits for latent labor and urged clinicians to avoid cesarean delivery for labor abnormalities in the latent phase.[9, 10] However, these recommendations have met with much controversy, in particular the redefinition of the active phase as starting at 6 cm instead of 4 cm as in previous guidelines.[11] Here, we discuss reasons for antenatal admissions in labour room before term, their associated hospital acquired complications and feto-maternal outcomes.

We found that out of total 4251 labor room admissions, 91 patients had prolonged hospital stay of more than 48 hours who admitted before term. 78 had age <30 years and 13 had age >13 years. Parity was primi in 32, multi in 55 and grand multi in 4 cases. Gestational age was T1 in 5, T2 in 7 and T3 in 79 cases. Seravalli et al[12] conducted a retrospective study on 1005 women with uncomplicated singleton pregnancy admitted for spontaneous labor. Cesarean section rate and other perinatal outcomes were compared between women admitted in the latent phase and those admitted in the active phase. Admission occurred in the active phase of labor for 331 women (32.9%) and in the latent phase for 674 (67.1%). Admission in the latent phase was more frequent in nulliparous than in multiparous ($p < 0.01$) and for Italian patients compared to foreigners. The incidence of caesarean section was similar between groups. Admission in the latent phase increased the likelihood of epidural analgesia (OR 3.47, 95% CI 1.96–6.14, in nulliparous, and OR 2.58, 95% CI 1.37–4.84, in multiparous) and increased the rate of augmentation of labor with oxytocin in multiparous (OR 2.87, 95% CI 1.05–7.85), without difference in neonatal outcomes. Conclusions: Admission in the latent phase is associated with more frequent use of epidural analgesia, without an increase in cesarean section or adverse neonatal outcomes.

We found that >15 days hospital stay was seen in 3, 14 days in 3, 8 days in 4, 7 days in 1, 6 days in 3, 5 days in 5, 4 days in 20, 3 days in 24 and 2 days in 28 patients. Chaudhari et al[13] in their study found that among the 12,885 deliveries, 990 were post-dated pregnancy and 100 cases, incidence of post-dated pregnancy was 7.6%. Majority of women belonged to age group 21 to 25 years (66%). 68% of them delivered vaginally, 32% women required caesarean section, the most common indication being foetal distress, 57% of women were given induction by various means and 32% of them had successful vaginal delivery.19% babies had NICU admission with respiratory distress (7%) being the most common reason. Post-dated pregnancy is high risk condition which is challenge to obstetrician and leads to maternal and neonatal complications. A better management is a pre-requisite to reduce the rate of perinatal mortality and morbidity in this group of patients. With regular antenatal check-up, the incidence of post-dated pregnancies can be decreased.

We found that outcome of vaginal delivery was live birth in 23, IUD in 3 and VBAC in 1, caesarean section was live in 22 and IUD in 1, LAMA in 15 and discharged/ referral in 23 cases. We found that complications were fever, cough in 7, UTI in 5, Lethary, Sleeplessness, Constipation, Deranged LFT in 10, Deranged Coagulation Profile/DVT with Pulmonary Thromboembolism in 1 and Pulmonary edema d/t anemia with sepsis in 1 case. Rosenbloom et al[14] examined the association between length of time for dilation from 4 cm to 6 cm, delivery outcomes, and maternal and neonatal morbidity. There were 7,355 patients eligible for analysis, 728 (10%) had dilation times from 4 cm to 6 cm >10.3 hours, which was the 90th percentile, and 6627 (90%) had dilation times ≤ 10.3 hours. Having dilation time from 4 cm to 6 cm above the 90th percentile (10.3 h) was associated with cesarean (adjusted odds ratio 2.05 (95% confidence interval 1.67, 2.52)), composite maternal morbidity (adjusted odds ratio 1.48 (95% confidence interval 1.10, 2.00)), and composite neonatal morbidity (adjusted odds ratio 1.92 (95% confidence interval 1.52, 2.4.)). The area under the receiver operator characteristic curve for predicting cesarean delivery was 0.73 (95% confidence interval 0.71, 0.75). The test characteristics for the cutoff of 9.75 h were: sensitivity 68.3% (95% confidence interval 64.8%, 71.7%), specificity 66.2% (95% confidence interval (55.0%, 67.3%), positive predictive value 18.5% (95% confidence interval 17.1%, 20.0%), and negative predictive value 94.9% (95% confidence interval 94.2%, 95.5%). For composite maternal morbidity the cutoff was 6.98 hours and the area under the curve was 0.62 (95% confidence interval 0.59, 0.65), while for composite neonatal morbidity it was 5.5 hours (area under the curve 0.69, 95% confidence interval 0.67, 0.71).

The shortcoming of the study is small sample size.

Conclusion

Overall, the average duration of stay before child-birth is less than 48 hrs. But in some the duration may extend up to 14-15 days. The main aim was to complete antenatal steroid coverage in gestational age between 28 to 36 weeks along with neuro-protection. As preterm birth is a primary cause of neonatal morbidity and mortality in India. Identification and prompt treatment of hospital acquired infections is necessary to reduce maternal morbidity.

References

1. Brane E, Olsson A, Andolf E. A randomized controlled trial on early induction compared to expectant management of nulliparous women with prolonged latent phases. Acta Obstet Gynecol Scand. 2014;93(10):1042–9.
2. Cahill AG, Tuuli MG, Stout MJ, Lopez JD, Macones GA. A prospective cohort study of fetal heart rate

DOI: 10.69605/ijlbpr_14.3.2025.230

monitoring: Deceleration area is predictive of fetal acidemia. Am J Obstet Gynecol. 2018.
3. Zhang J, Troendle J, Mikolajczyk R, Sundaram R, Beaver J, Fraser W. The natural history of the normal first stage of labor. Obstet Gynecol. 2010;115(4):705–10.
4. Cahill AG, Roehl KA, Odibo AO, Zhao Q, Macones GA. Impact of fetal gender on the labor curve. Am J Obstet Gynecol. 2012;206(4):335 e1–5.
5. Youden WJ. Index for rating diagnostic tests. Cancer. 1950;3(1):32–5.
6. Carter JV, Pan J, Rai SN, Galandiuk S. ROC-ing along: Evaluation and interpretation of receiver operating characteristic curves. Surgery. 2016;159(6):1638–45.
7. Harper LM, Caughey AB, Roehl KA, Odibo AO, Cahill AG. Defining an abnormal first stage of labor based on maternal and neonatal outcomes. Am J Obstet Gynecol. 2014;210(6):536 e1–7.
8. Friedman EA. Primigravid labor; a graphicostatistical analysis. Obstet Gynecol. 1955;6(6):567–89.
9. Barber EL, Lundsberg LS, Belanger K, Pettker CM, Funai EF, Illuzzi JL. Indications contributing to the increasing cesarean delivery rate. Obstet Gynecol. 2011;118(1):29–38.
10. Zhang J, Troendle J, Grantz KL, Reddy UM. Statistical aspects of modeling the labor curve. Am J Obstet Gynecol. 2015;212(6):750 e1–4.
11. Thuillier C, Roy S, Peyronnet V, Quibel T, Nlandu A, Rozenberg P. Impact of recommended changes in labor management for prevention of the primary cesarean delivery. Am J Obstet Gynecol. 2018;218(3):341 e1–e9.
12. Seravalli V, Strambi N, Castellana E, Salamina MA, Bettini C, Di Tommaso M. Hospital Admission in the Latent versus the Active Phase of Labor: Comparison of Perinatal Outcomes. Children. 2022 Jun 20;9(6):924.
13. Chaudhari P, Vohra H. The fetomaternal outcome in case of post-dated pregnancy at tertiary care center. Int J Reprod Contracept Obstet Gynecol 2024;13:1173-8.
14. Rosenbloom J.I., Woolfolk C.L., Wan L., Stout M.J., Tuuli M.G., Macones G.A., Cahill A.G. The Transition from Latent to Active Labor and Adverse Obstetrical Outcomes. Am. J. Obstet. Gynecol. 2019;221:487.e1–487.