



TO STUDY THE ROLE OF LATE FIRST TRIMESTER CERVICO- ISTHMIC LENGTH SCREENING IN PREDICTION OF PRETERM LABOUR

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KEYWORDS :

INTRODUCTION –

Preterm labour is one of the most challenging problems confronting the obstetricians and perinatologists. Every year estimated 15 million babies are born preterm. Preterm is defined as onset of labour before 37 weeks of gestation. Preterm may be iatrogenic or spontaneous. A number of risk factors involved are socioeconomic status, single marital status, age of mother, cigarette smoking, alcohol, stress, ART, infections, multifetal gestation etc. USG assessment of cervix with transvaginal probe is reliable method to assess the cervical length and predict the risk of preterm delivery in high and low risk pregnancies. Cervical measurement obtained between 11-14 wks and 20-26wks with proper obstetric history and physical exam will help in prediction of female at risk of PTL.

Objective – To assess cervico-isthmic length in late first trimester and late second trimester by using USG and find association of cervico-isthmic length in first trimester with preterm labour.

Materials & Methology – This is a longitudinal/ Prospective/ Follow-up analytic study. The study was carried out from Aug 2024 To jan 2025. It was carried at Nahar hospital indore and Amay clinic Jhalawar.

Inclusion Criteria:- 1. Singleton pregnancy 2. Primigravida 3. Women in first trimester.

Exclusion Criteria:- 1. Multiparous 2. Multiple Pregnancy 3. Women with medical complication like DM, HTN, renal disorders, PIH.

A pre- designed ,semi structured questionnaire was used, TVS machine Versona advance balance with TVS probe is used to measure cervical length. With the help of sonologist, cervical length was measured among study group at 11-14 wks and 20-26 wks. Follow up of the maternal outcome was taken as it was preterm or term delivery. Data was presented as tables and bar diagrams. Statistical analysis was performed using MS excel and result were expressed in percentage.

RESULTS :-

Out of 100 study participants, 14 (14%) were delivered before completing 37 wks of gestation and 86 (86%) were delivered at term. In present study, the prevalence rate of preterm labour was 14% . Among 14 Preterm 4 (4.5%) were delivered at or before 34wks of gestation (early preterm delivery) and 10 were delivered after 34 wks of gestation (late preterm delivery) (table 1.).

Table 1: Distribution Of Study Participants According To Gestational Age At Delivery.

Gestational age at delivery	Numbers	Percent ages
Early preterm deliveries (< 34weeks)	4	4
Late preterm deliveries (>34weeks)	10	10
Term Gestation (>37weeks)	86	86

Figure 1 & 2 depict mean cervical length at 11-14 weeks and 20-26 weeks among those who delivered at preterm and term. The mean cervical length at first trimester of those who delivered preterm and term were 3.24 ± 0.8 and 3.83 ± 1.1 cm respectively and this difference was found statistically significant ($p=0.007$). The mean cervical length at second trimester of those who delivered preterm and term was 2.81 ± 0.9 and 3.49 ± 0.8 cm respectively and this difference was found statistically significant ($p=0.0001$).

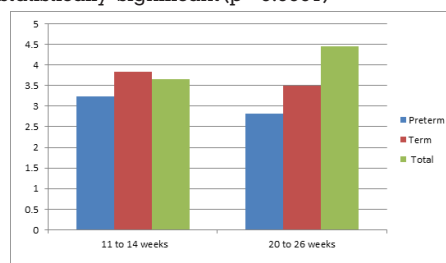


Figure 1: Graphical presentation of participants according to mean cervical length at 11-14 weeks and 20-26 weeks.

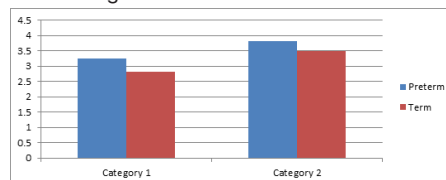


Figure 2: Graphical presentation of cervical length shortening in preterm and term delivery.

Table 2. depict association of short cervical length at 11-14 weeks and 20-26 weeks and pregnancy outcome. Out of 14 who had short cervical length (<3.4cm) at 11.14 weeks 55.81% delivered at preterm and 44.19% delivered at term. Association of short cervical length at 11-14 weeks was found statistically significant with preterm delivery ($p=0.001$).

Table 2: Association Of Short Cervical Length With Pregnancy Outcome.

Cervical length	Pre-term (n=14)	Term (n=86)	Total (n=100)	P Value
11-14weeks				
< 3.4cm	12(55.81%)	3(44.19%)	15	0.001
>3.4cm	02(2.55%)	83(97.45%)	85	
20-26weeks				
< 3.1cm	13(59.09%)	2(40.91%)	15	0.0001
>3.1cm	01(1.28%)	84(98.72%)	85	

DISCUSSION –

The study was conducted on 100 primigravida women having singleton pregnancy. They were assessed at 11-14 weeks and 20-26 weeks for measurement of cervical length by using transvaginal ultrasonography. In present study, the prevalence rate of preterm labour was 14%.

The mean cervical length at first trimester and at second

trimester was 3.66 ± 0.9 and 3.46 ± 0.8 cm respectively. There was a significant cervical shortening at 11-14 weeks to 20-22 weeks. The mean cervical length at first trimester in preterm and term deliveries were 3.24 ± 0.8 and 3.83 ± 1.1 cm respectively and this difference was found statistically significant ($p=0.007$) the mean cervical length at second trimester in preterm and term deliveries was 2.81 ± 0.9 and 3.49 ± 0.8 cm respectively and this difference was found statistically significant ($p=0.0001$). Based on cutoff of 3.4 cm for cervical length at first trimester, prediction of preterm labour has 85.71% sensitivity, 88.95% specificity, 55.81% positive predictive value and 97.45% negative predictive value. In prediction of preterm delivery, second trimester cervical length with cutoff 3.1 cm has 92.85% sensitivity, 89.53% specificity, 59.09% positive predictive value and 98.71% negative predictive value.

CONCLUSION -

The prevalence rate of preterm labour was 14%.

- There was a significant cervical shortening between 11-14 weeks to 20-22 weeks in all participants.
- With cutoff value of 3.4 cm at first trimester, prediction of preterm delivery had 85.71% sensitivity, 88.95% specificity, 55.81% positive predictive value and 97.45% negative predictive value.
- With cutoff value of 3.1 cm at second trimester, prediction of preterm delivery had 92.85% sensitivity, 89.53% specificity, 59.09% positive predictive value and 98.71% negative predictive value.
- Second trimester cervical length is a better predictor of preterm delivery as compared to first trimester cervical length with high accuracy.

REFERENCES:-

1. Dasgupta S. Preterm labour. In: Immunological basis of pathophysiology. Mukherjee OG, Buckshee K eds.,
2. Bulletin of the World Health Organization; 2010; 88:31-38.
3. Harry M. Georgiou, Megan K. W. Di Quinzio, Michael Permezel, and Shaun P. Brennecke, "Predicting Preterm Labour: Current Status and Future Prospects," Disease Markers, Vol. 2015 Article ID 435014, 9 Pages,
4. G.A Dekker, S. Y. Lee, R. A. North, L.M. McCowan, N.A.B. Simpson, and C. T. Roberts, "Risk factors for preterm birth in an international prospective cohort of nulliparous women".