Research Paper

Role of Mid Trimester Transvaginal Ultrasound of Cervical Length in Prediction of Preterm Delivery in Asymtomatic Singleton Pregnancies

Dr. Girija Malavalli Kempasiddaiah
PROF & HOD, DEPT OF OBSTETRICS & GYNECOLOGY, Dr. B R AMBEDKAR MEDICAL COLLEGE & HOSPTIAL, BANGALORE. KARNATAKA.

Dr. DIVYA GANESH
POST GRADUATE, DEPT OF OBSTETRICS & GYNECOLOGY, Dr. B R AMBEDKAR MEDICAL COLLEGE & HOSPTIAL, BANGALORE. KARNATAKA.

ABSTRACT:
Introduction: Preterm birth is the leading cause of perinatal mortality and morbidity worldwide. These infants suffer from immediate complications of prematurity as well as long term sequel such as neurodevelopment disability. .Preterm birth contributes 75% of neonatal death. Aim: To determine cervical length by transvaginal USG in singleton pregnancies at 16-24 weeks of gestation. Materials & Methods: 260 pregnant women were enrolled into the study after taking consent and who were in between 16-24 weeks of pregnancy attended to OPD at Dept of OBG in Dr B R Ambedkar Medical College & Hospital, Bangalore. Discussion: Out of 260 women, 54 women had preterm delivery. Whereas in relation to cervical length of <25mm were about 47 women and about 7 women had cervical length of >25mm in this study. Out of 47 women who had Preterm delivery under <25 mm of cervical length, 34 women had risk factors like, Midtrimester abortion, past Preterm delivery and urinary infection also.
Conclusion: Preterm delivery and its effect on perinatal and neonatal mortality and morbidity is a global issue which needs to improve among health care workers, predicition of preterm labour by suitable effective and reliable method is a boon to save young babies. So transvaginal sonographic determination of cervical length is better predictior of preterm labour in singleton pregnancies.
KEYWORDS: Preterm birth, Cervical length, USG,

I. INTRODUCTION

Preterm birth is defined as birth between the age after 28 weeks before 37 weeks of gestation. Incidence of preterm birth ranges between 5-21% in India.[1] These infants suffer from immediate complicationof prematurity as well as long term sequel such as neurodevelopmental disability. Preterm birth contributes 75% of neonatal death[2] The pathophysiology of spontaneous preterm labour and preterm premature rupture of membranes has been studied worldwide with aim of identifying those women who are at risk for preterm deliveries. Based on observation worldwide, there is increasing evidence of infection like genital and urinary tract infection and cervical insufficiency play major role in occurrence of spontaneous preterm labour[3] With better screening test and availability of treatment, transvaginal sonographic measurement of cervical length is the best available method in prediction of spontaneous preterm birth[4]

II. AIM AND OBJECTIVES

1.   To determine cervical length by transvaginal sonography in asymptomatic singleton pregnancies between 16-24 weeks of gestation.
2.   To establish the relationship between cervical length measured at mid trimester and their time of delivery.

III.   MATERIAL & METHODS

This study done at   Department of OBG at Dr B R Ambedkar Medical College and Hosptial, Bangalore, from june 2017 to May2018. Total of 260 pregnant women who attended the OPD during second trimester between 16-24 weeks were included in the study. Consent for the transvaginal USG obtained and cervical length is measured. If cervical length is more than 25mm, then women were followed till delivery. If the length is less than 25mm, follow up scan upto 28 weeks is done and women are followed till delivery. Cervical length is measured between internal os to external os. If cervix is not straight then two end to end straight measurement are taken and average cervical length measured.

IV.   RESULTS

In this study totally 260 pregnant women were included after taking consent and all other criteria taken into account and transvaginal USG done at 16-24 weeks of pregnancy for cervical measurement and all these women were followed till delivery.

parity	Number	Percentage
Primigravida	60	23.07%
Multigravida	200	76.93%

Table No 1. Parity wise distribution of cases.

Gestational Age	Number	Percentage
Preterm	54	20.76%
Term	206	79.24%
Total	260	100

Table No 2. Gestational Age wise distribution of cases

Parity	Preterm	Term	Total
Primigravida	11	49	60
Multigravida	43	157	200

Table No 3. Parity and Gestational age wise No of cases

Age	Number	Preterm	Percentage
15-19 yrs	15	04	26.66
20-24 yrs	98	10	10.20
25-29 yrs	130	33	25.38
30-34 yrs	10	04	40.00
.>35 yrs	07	03	42.85

Table No 4. Age wise No of Preterm cases

Cervical length	Preterm
<25 mm	47
>25 mm	07

Table No 5. No of cases with Cervical length wise

Mode of delivery	Number
Normal delivery	179
Assisted breech	03
Forceps delivery	10
LSCS	68

Table No 6. Mode of delivery of study group[n-260]

Mode of delivery	Preterm cases	NICU
Normal delivery	32	22
Forceps delivery	05	05
LSCS	17	11
Total	54	38

Table No 7. Mode of delivery of Preterm cases with NICU admission [n-54]

V.   Discussion

In this study, 260 pregnant women were enrolled and 54 pregnant women had Preterm delivery. Out of 60 cases of Primigravida, 11(18.33%) cases had Preterm delivery and Out of 200 Multigravida 43(21.55%) cases had Preterm delivery. Multigravida had more risk for preterm delivery when compared to primigravida

Out of 260 cases, age wise, about 15 cases belong to less than 20 yrs and out of 15 cases 4 (26.66%)cases had preterm delivery. Highest cases were between 25 to 29 yrs, 130 cases included and 33

women (25.38%) had preterm delivery[5] This result shows that teenage pregnancy has an independent risk factor for preterm delivery.

Out of 54 women who had Preterm delivery, 47 women had cervical length of <25mm and 7 women had cervical length of >25mm. So when cervical length is short, Preterm delivery is more as shown in other study also[6]

In our study, 34 women, who had risk factors like, Midtrimester abortion, Past history of Preterm birth and Urinary and vaginal infection noted and some study showed same results[7,8]

VI.   CONCLUSION

Pre term delivery and its effect on Perinatal and Neonatal morbidity and mortality is a global issue.Predicition of preterm labour by different method is a boon to save young lives. Numerous serum and cervical secretions biomarkers are under research. So transvaginal USG in determination of cervical length in women with asymptomatic singleton pregnancy is best and good in both cost effective and has good validity as an effective screening test.

REFERENCE

[1]. J M G Crane and D Hutchens: Use of transvaginal ultrasonographyto predict preterm birth in women with history of preterm birth, Ultrasound in Obstetrics & Gynaecology, Vol 32, no 5, pp 640-645, 2008.
[2]. J M O Brien, E A Defranco, C D Adair, Effect of Progestrone on cervical shortening in women at risk for preterm birth: Ultrasound in Obstetrics and Gynecology, vol 34, no 6, pp 653-659, 2009.
[3]. J Airoldi, V Berghella, H Sender and J Ludmix: Transvaginal ultrasonography of the cervix to predict preterm birthin women with uterine anomalies, Obstetrics & Gynaecology, vol 106, no 2, pp 553-556, 2005.
[4]. J Visintine, V Berghella, D Henning & Baxter: Cervical length for predicition of preterm birth in women . Ultrsound in Obstetris & Gynecology, vol 31, no 2, pp198-201, 2008.
[5]. Conde Agudelo A Rosas Bermudezll, Kafury Goeta Ac; Birth spacing and risk of adverse perinatal outcome: A meta analysis JAMA 295, 1809,2006.
[6]. Fernando Arias, Shirish Daftary: Practical Guide to high risk pregnancy and delivery; 3rd edition, 2008.
[7]. Macones GA, Parrys, Elkousky M, et al: Polymorphisms in the promoter region of TNF and bacterial vaginosis. Preliminary evidence of gene environment interactions in the etiology of spontaneous preterm birth. American Journal of Obstetrics & Gynecology 190; 1504, 2004.
[8]. Wendy L White, Katherine W Fong, Rory Windrim, cervical ultrasound and preterm birth, Rumack, 4th edition, 2011, pp1527-1543.