International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Habashy AE et al. Int J Reprod Contracept Obstet Gynecol. 2022 Nov;11(11):2954-2962
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20222783

Original Research Article

Comparison between static and dynamic cervical assessment in prediction of preterm birth

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Received: 10 October 2022
Revised: 20 October 2022
Accepted: 21 October 2022

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ABSTRACT

Background: Preterm labor represents one of the most likely causes for prenatal hospitalization. Previously, the accuracy of cervical length measurement in predicting preterm birth was thoroughly examined. The current study aimed to compare static and dynamic cervical assessment in prediction and management of preterm labor.
Methods: The present study was prospective comparative study and conducted on (75) pregnant female patients recruited from the antenatal clinic of El-Shatby Maternity University hospital in the period from October 2021 till August 2022. The patients included in the study were divided into three groups; the first group included (25) patients and all were subjected to static cervical assessment, the second group included (25) patients and all were subjected to dynamic cervical assessment and the last group included (25) patients and all were subjected to interval dynamic cervical assessment. All groups are almost matched in their general characteristics. All groups received tocolysis in the form of nifedipine slow-release tablets 20 mg twice daily. Conventional static and dynamic transvaginal ultrasound assessment of cervical length (CL) was done.
Results: There were inverse relationships between gestational age (GA), fundal level (FL) and mean gestational age (MGA) with the latency period but there was a direct relationship between the parity and the static cervical length in all the studied groups. There was a statistically significant difference between the studied groups regarding their means of latency period in those with static cervical length >1.5-2.5 cm (most of cases in all groups). Although there was statistically significant difference between group A, B and C as regard their means of static and dynamic cervical length.
Conclusions: The longer the latency period, the lengthier the cervical length. The latency period had an inverse correlation with gestational age. There was also a direct relationship among parity and cervical length. The cervical estimation using the fundal pressure method, dynamic cervical length, is more enlightening than the interval approach.

Keywords: Cervical assessment, Preterm birth, Transvaginal ultrasound

INTRODUCTION

The World Health Organization (WHO) recognized preterm birth as babies born alive before 37 weeks of gestation.[1] Preterm birth is a serious medical issue, resulting in neonatal mortalities more than one million mortality each year, as well as greater incidence of morbidity and disability between survivors.[2,3] The etiology of preterm birth is multi-faceted, with economic inequality, cultural, and obstetric variables all playing a role, but no single cause is identified in many situations.[4-6]

One of the primary objectives of lowering neonatal mortality is the detection of preterm labor. Identifying the main mechanisms of preterm labor is essential for avoiding it.[6] In this respect, diagnostic tools appear to be required for defining risky and preterm pregnancies.[7,8] Preterm birth (PTB) prevention strategies that applied in the last 30 years include cervical length (CL) screening, vaginal progesterone, corticosteroids, and cerclage collectively not significantly decrease PTB rates but decrease its associated neonatal morbidity and mortality.[9]

Cervical ultrasounds should be utilized instead of manual evaluations, according to the findings of several research.[10,18] In both asymptomatic high-risk and low-risk women, it has been demonstrated that the evaluation of CL by ultrasonography (USG) is superior to digital examination as a predictor of preterm delivery.[11] Trans vaginal ultrasound (TVUS) is the industry leader in CL evaluation. The risk of PTB increases with shorter cervical length and early detection. Women with normal CL values can avoid unneeded procedures by using TVUS-CL 25 mm as CL cut-off value (10th percentile) (old cut-off is 30mm). However, rather than being the same length, the majority of research findings found variable lengths (15–30 mm). Measurements of cervical length is promoted every minute.[12,19,22]

The presence or absence of funnelling, funnel length and breadth, percent funnelling (funnel length/(funnel length plus cervical length)×100), and cervical index (1 + funnel length/cervical length) are other sonographic cervical characteristics that have also been documented and evaluated. Funneling is the term for an internal os that has been opened and the upper cervical canal wedged. With the cervical canal's morphology progressing, funnelling is a constant process (T-Y-V-U: trust your vaginal ultrasound). Low precent funnelling (25% or less) has no increased risk of PTB. The internal os is U or V shaped, funnel width >5 mm, and funnel length (lateral border) >3 mm are indicators of cervical dilatation.[13,22,26]

Researchers found that a dynamically changing cervix increases the accuracy of cervical length in predicting preterm birth, either spontaneously or in response to fundal pressure.[14,15] The many dynamic cervical assessment techniques include the Valsalva maneuver, cervical length ultrasonography, contraction monitoring during a 10-minute period, and watching the change in the cervical appearance in response to fundal pressure for 15 seconds. During a 5-minute TVUS cervical scan, there may be spontaneous funnelling.[16,32,33]

The present study aims to compare static and dynamic cervical assessment in the management of preterm labor. It was created with three goals in mind.

First, distinguish between those who can be managed at home and those who require inpatient therapy (those who suspected to go through preterm labor imminently).

Second, separate those who should be admitted from those who should be referred (if there were no current available places in the neonatal intensive care unit and the preterm labor suspected soon).

Finally, distinguish between patients who can be assured and those who should be mentally planned for a preterm birth.

METHODS

The present study was prospective comparative study and conducted on (75) pregnant female patients recruited from the antenatal clinic of El-Shatby Maternity University hospital in the period from October 2021 till August 2022. Patients were included were those at any age, gravidity and parity, with gestational age between 28-34 weeks, singleton pregnancy, and documented threatening spontaneous preterm labor pains, by abdominal palpation and cardiotocography (CTG). Patients were excluded if they had premature rupture of membranes, fetal congenital anomaly, fetal distress, cervical dilatation more than 5 cm and cervical effacement more than 80%.

All cases agreed to sign written informed consent forms to proclaim their willingness to participate in this study, as agreed upon by the ethical committee. The subjects were divided into three groups.

Group (A): The first group consisted of (25) patients and all were subjected to static cervical assessment.

Group (B): The second group consisted of (25) patients and were subjected to fundal dynamic cervical assessment.

Group (C): The third group consisted of (25) patients and were subjected to interval dynamic cervical assessment.

All groups received tocolysis in the form of nifedipene slow released tablets 20 mg twice daily.

All patients were subjected to in-depth history taking with a focus on gestational age that determined by last menstruation cycle or recorded first trimester ultrasound and history of daily physical activity and clinical evaluation with a particular focus on pulse, blood pressure, fundal level and fetal heart rate, frequency of uterine contractions in 10 min by abdominal palpation, and speculum examination.

Cardiotocography (CTG) by using fetal monitor SRF 618B++, for 15 minutes and obstetric abdominal ultrasound to certify viability, gestational age, placental location, and amniotic fluid index were done to all included patients.

Conventional static transvaginal ultrasound assessing CL was done to all groups while dynamic TVUS through either applying gentle fundal pressure for 15 seconds (in group B) or repetitive measurements of the cervical length at interval of two hours three times (in group C). Funnel width measurement (in group B) done from the inner-to-inner edges of the internal os.

The latency period (duration between patient inclusion in the study and delivery) and the mode of delivery recorded in all patients under the study.

The TVUS cervical assessment follows the technical recommendations that include emptying urinary bladder, zooming (cervix occupies about 75% of the screen), urinary bladder is visible on the screen beside the cervix, the anterior and posterior cervical lips are symmetrical in thickness and echogenicity, avoid undue pressure by the probe (limited concavity created by the transducer). The endocervical canal is visible from the internal os to the external os, calipers placed between the internal os and the external os, and take 3 measurements for the CL and record the shortest in mm. If the cervical canal is angled or curved (a reassuring sign): use sum of 2 lines.

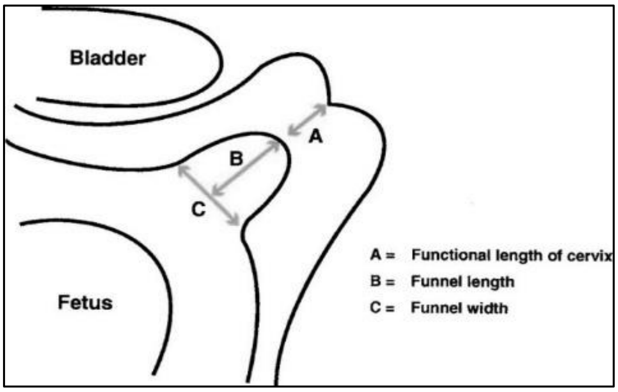

Figure 1: Schematic diagram of transvaginal ultrasound of cervix. Cervical length (A) is measured from the external os to the internal os or to the functional internal os when funneling (B) is present. Record the functional CL: the residual shortest cervical length (the closed part of the canal, exclude the funnel).

Funnel width: internal os diameter; funnel length: opened portion of the cervical canal; funneling percentage: funnel length/total CL; total CL=funnel+functional CL.

Figure 2: Short cervical length. TVUS shows that the cervical length is <25 mm which is considered short. Note the absence of the cervical glandular area (CGA). Absent CGA in cases who have short CL is considered as a non-reassuring sign that the PTB is imminent.

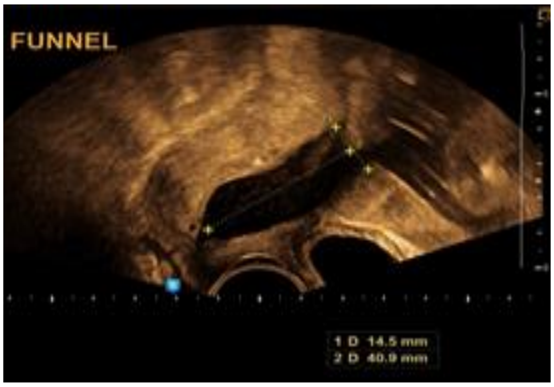

Figure 3: V-shaped cervical canal funnelling. TVUS shows that the cervical internal os is opened and almost all the cervical canal is funnelled with only 11 mm closed caudal part.

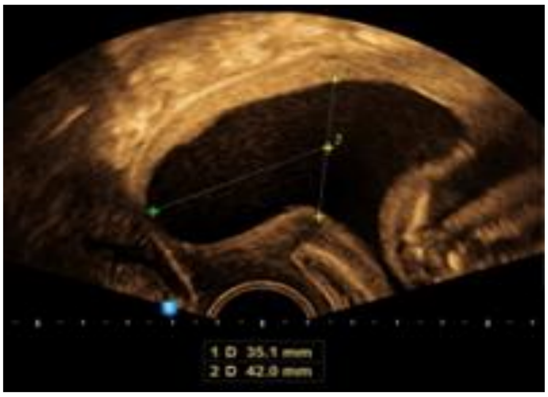

Figure 4: U-shaped cervical canal funnelling. TVUS shows that the cervical internal os is opened and almost all the cervical canal is funnelled.

Statistical analysis of the data

Data were fed to the computer using IBM statistical package for the social sciences (SPSS) software package version 24.0.

Qualitative data were described using number and percent. Comparison between different groups regarding categorical variables was tested using Chi-square test.

Quantitative data were described using mean and standard deviation for normally distributed data while abnormally distributed data was expressed using median, minimum and maximum.

For normally distributed data, comparison between two independent population were done using independent t-test while more than two population were analyzed Kruskal Wallis to be used.

Significance test results are quoted as two-tailed probabilities. Significance of the obtained results was judged at the 5% level.

Mann Whitney test

A nonparametric significant test used to compare between unpaired signed ranks test.

Coefficient of correlation

A measure of the strength of the association between two variables is calculated by Pearson's product-moment coefficient of correlation (r).

RESULTS

There was no statistically significant difference between group A, B and C as regard their means of age, parity, pulse and mean arterial blood pressure (MABP), gestational age (GA) and fundal level (FL) as shown in Table 1.

There was no statistically significant difference between group A, B and C as regard their placental location and amniotic fluid index (AFI) as the p value of those were 1.00 and 0.121 respectively as shown in Table 1.

There was no statistically significant difference between group A, B and C as regard their static (initial) cervical length and latency period as the p values of those were 0.081 and 0.482 respectively (Table 1) this mean that there was almost no selection bias.

Table 1: Comparison between the three studied groups according to basic demographic and clinical data.

Variables	Group A		Group B		Group C		χ^2 (p)	Z1, p1	Z2, p2	Z3, p3
Age	29.12±6.60		29.96±5.74		27.68±6.53		1.866 (0.393)	0.398 (0.690)	0.895 (0.371)	1.351 (0.177)
Parity	0.64 ± 0.81		0.40-0.58		0.68 ± 0.75		1.933 (0.380)	1.009 (0.313)	0.320 (0.749)	1.347 (0.178)
Pulse (bpm)	86.36±6.63		89.68±4.76		83.72±7.64		2.418 (0.093)	1.818 (0.069)	1.596 (0.111)	2.344 (0.101)
MABP (mmHg)	85.47±4.90		86.13±6.64		91.73±7.27		3.315 (0.066)	0.633 (0.527)	2.007 (0.133)	2.118 (0.104)
GA (weeks)	31.56±1.58		31.48±1.33		32.64±2.72		3.392 (0.183)	0.258 (0.797)	1.536 (0.125)	1.622 (0.105)
FL (weeks)	31.36±1.70		31.84±1.62		33.12±2.71		3.476 (0.159)	1.269 (0.204)	1.750 (0.096)	1.850 (0.082)
Placental location	**No.**	**%**	**No.**	**%**	**No.**	**%**	**Test of sig** MC p=1.000	1.000	1.000	1.000
Fundal	20	80.0	20	80.0	21	84.0				
Low lying	4	16.0	4	16.0	3	12.0				
Placenta previa	1	4.0	1	4.0	1	4.0				
AFI (cm)	10.08±1.63		10.12±1.72		11.28±1.65		4.738 0.121	0.158 (0.874)	1.335 (0.120)	1.461 (0.114)
MGA (weeks)	32.00±1.68		32.16±1.34		32.80±2.18		2.169 (0.338)	0.109 (0.913)	1.345 (0.179)	1.181 (0.237)
Static cervical length (cm)	1.82 ± 0.54		2.01 ± 0.59		2.39 ± 0.39		5.773 (0.081)	0.656 (0.512)	2.667 (1.111)	2.096 (0.212)
Latency period (days)	12.54 ± 6.74		11.72 ± 6.94		12.04 ± 3.30		1.459 (0.482)	1.441 (0.150)	0.408 (0.683)	0.321 (0.748)

Z1: Z for Mann Whitney test for comparison between group A and B; Z2=Z for Mann Whitney test for comparison between group A and C; Z2: Z for Mann Whitney test for comparison between group B and group C; χ2: Chi square for Kruskal Wallis test p: statistically significant if ≤0.05

There was no statistically significant difference between group A and B as regard their means of latency period in those with static cervical length ≤1.5 cm and >2.5 cm as the p value of those were 0.666 and 1.000 respectively. There was a statistically significant difference between group A, B and C as regard their means of latency period in those with static cervical length >1.5-2.5 cm (this category represents more than 60% of cases in all groups) as the p value was <0.001 (Table 2).

Although there was statistically significant difference between group A, B and C as regard their means of static and dynamic cervical length (p value=0.001), there was no statistically significant difference between them as regard the latency period in those with cervical length ≤1.5 cm, >1.5-2.5 cm and >2.5 cm as the p value of those were 0.0.604, 0.062 and 0.108 respectively (Table 3).

There were inverse relationships between gestational age (GA), fundal level (FL) and mean gestational age (MGA) with the latency period as showed by the negativity of their Pearson coefficient "r". They were -0.336, -0.183 and -0.430 for group A, -0.366, -0.599 and -0.313 for group B and -0.551, -0.493 and -0.552 for group C respectively. This means that the higher the gestational age of cases of threatening preterm labour, the shorter will be the latency period

Table 2: Comparison between groups A, B and C in the different categories of static cervical length according to latency period.

Parameters	Group A	Group B	Group C	χ^2 (p)
≤1.5 cm	7 cases (28%)	6 cases (24%)	0 cases (0.0%)	
Range	1.50-12.00	1.50-11.50	-	
Mean±SD	7.57±4.85	7.83±4.74	-	-
Median	10.00	10.50	-	
Z_1 (p)		0.432 (0.666)	-	
Z_2 (p)			-	
>1.5 – 2.5 cm	17 cases (68.0%)	17 cases (68%)	15 cases (60.0%)	
Range	3.50-16.00	2.00-14.00	12.50-14.00	
Mean ± SD	13.09±2.78	11.35±3.55	13.20±0.71	16.090* (<0.001)
Median	13.50	12.50	13.00	
Z_1 (p)		2.462* (0.014)	3.559* (<0.001)	
Z_2 (p)			2.409* (0.016)	
>2.5 cm	1 case (4%)	2 cases (8%)	10 case (40%)	
Range	38.00-38.00	14.00-39.00	10.00 – 18.00	
Mean ± SD	38.00±-	26.50±17.68	15.00±2.30	2.400 (0.301)
Median	38.00	26.50	15.25	
Z_1 (p)		0.000 (1.000)	1.588 (0.112)	
Z_2 (p)			0.650 (0.516)	

Table 3: Comparison between groups A, B and C in the different categories of static or dynamic cervical length according to latency period.

Parameters	Group A	Group B	Group C	χ^2 (p)
Cervical length (cm)	Static	Dynamic	Dynamic	
Range	0.70-3.00	0.70-3.00	1.40 – 3.10	
Mean±SD	1.82±0.54	1.43±0.51	2.18±0.51	21.475* (<0.001)
Median	1.80	1.50	2.00	
Z_1 (p)		2.599* (0.009)	2.048* (0.041)	
Z_2 (p)			4.593* (<0.001)	
Latency period (ds)	7 (28.0%)	14 (56.0%)	3 (12.0%)	
≤1.5 cm of CL				
Range	1.50-12.00	1.50-13.00	6.00 – 8.00	
Mean±SD	7.57±4.85	8.71±4.46	7.00±1.00	1.007 (0.604)
Median	10.00	11.00	7.00	
Z_1 (p)		0.301 (0.763)	0.343 (0.732)	
Z_2 (p)			1.143 (0.253)	
>1.5 – 2.5 cm of CL	17 (68.0%)	10 (40.0%)	14 (56.0%)	
Range	3.50-16.00	12.50-14.00	8.50 – 14.00	
Mean ± SD	13.09±2.78	13.20±0.71	11.00±1.79	12.274 (0.062)
Median	13.50	13.00	10.75	
Z_1 (p)		0.813 (0.416)	3.048 (0.072)	
Z_2 (p)			2.905 (0.064)	
>2.5 cm of CL	1 (4.0%)	1 (4.0%)	8 (32.0%)	
Range	38.00-38.00	39.00-39.00	13.50 – 18.00	
Mean±SD	38.00±-	39.00±-	15.75±1.56	4.445 (0.108)
Median	38.00	39.00	15.75	
Z_1 (p)		1.000 (0.317)	1.556 (0.120)	
Z_2 (p)			1.556 (0.120)	

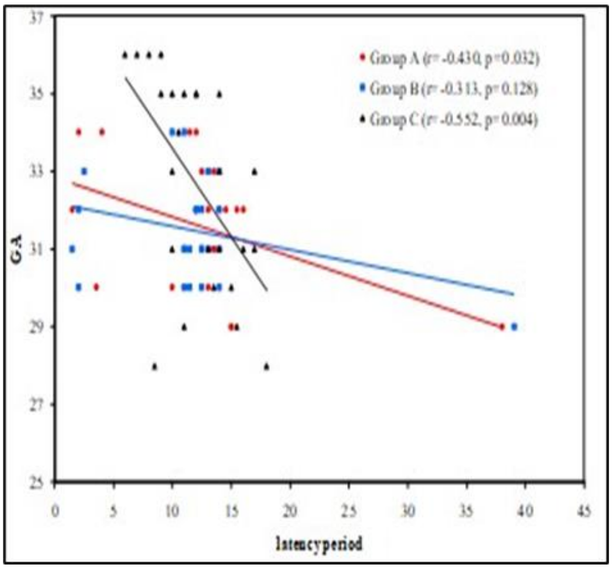

Figure 5: Correlation between latency period and GA in group A, B and C.

Table 4: Comparison between funnel width and dynamic CL in group B.

Parameters	Funnel width		Z (p)
	<0.7 cm	≥0.7 cm	
Latency period			
≤1.5 cm of CL			
Range	2.00-11.50	1.50-13.00	0.744 (0.457)
Mean±SD	7.60±4.89	9.33±4.38	
Median	11.00	11.00	
> 1.5–2.5 cm of CL			
Range	12.50-14.00	13.00-14.00	1.464 (0.143)
Mean±SD	13.00±0.71	13.67±0.58	
Median	12.50	14.00	
>2.5 cm of CL			
Range	39.00-39.00	-	-
Mean±SD	39.00±-	-	
Median	39.00	-	
Latency period	r=0.067, p=0.751		

There were direct relationships between the parity and the static cervical length in group A, B and C as showed by the positivity of their Pearson coefficient "r". They were 0.666 in group A, 0.563 in group B and 0.434 in group C. This mean that low parity was a risk factor for short cervix (short latency period).

In group B, there was no statistically significant difference between both categories of funnel width (<0.7 cm and ≥0.7 cm) as regard their latency period in those with dynamic cervical length ≤1.5 cm and >1.5-2.5 cm as the p value of those were 0.457 and 0.143 respectively. Also, there was no correlation between funnel width and latency period.

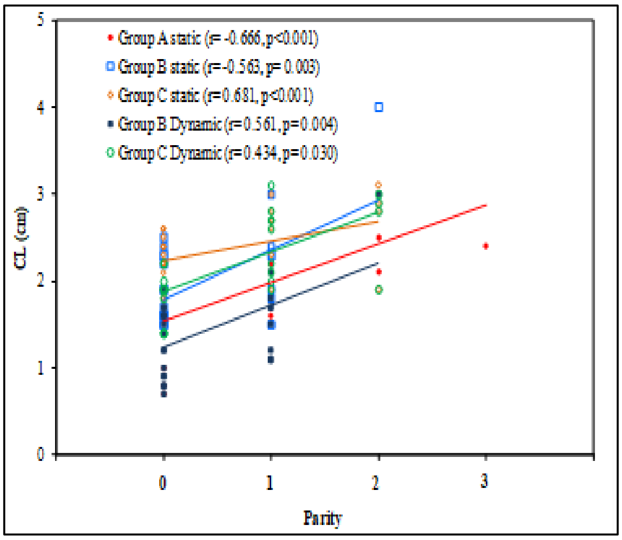

Figure 6: Correlation between parity with dynamic CL and static CL in group A, B and C.

DISCUSSION

Preterm birth is among the top reasons of neonatal death around the world, accounting for 40% of all mortalities in children below the age of five, and it is linked to a variety of short and longer-term neonatal health problems.[4,25]

Preterm premature rupture of membranes (PPROM) is described as fetal membrane rupture before 37 weeks gestation and before the onset of labor.[1] The most common complication of PPROM is the emergence of premature labor and birth. Evidently, PPROM makes up for 40% of all spontaneous preterm births, which makes it a major contributor to global perinatal morbidity and death.[8]

Transvaginal cervical length assessment and fetal fibronectin screening are encouraging indicators for risk prediction of preterm birth in such women. In symptomatic women, cervical length has an inverse relationship with the risk of preterm birth, and dynamic shortening of cervical length is often related to preterm birth.[11,17]

A reduction in cervical length raises the preterm birth risk before 34 weeks of gestation.[20,27]

The goal of this study was to compare static and dynamic cervical assessment in the management of preterm labor.

In patients who had static cervical lengths greater than 1.5-2.5 cm, there was a statistically significant difference in latency period among groups A, B, and C (most of cases in all groups). Regardless of the statistically significant difference in static and dynamic cervical length among groups A, B, and C, there was no statistically significant difference in latency period in those with cervical lengths of 1.5 cm, >1.5-2.5 cm, and >2.5 cm.

As long as there was no statistically significant difference between groups A, B, and C in terms of their preliminary cervical length and latency period, we discovered that: there was no statistically significant difference among groups A and B in terms of their means of latency period in those with static cervical lengths of 1.5 cm and >2.5 cm; but there was a statistically significant difference among groups A and B in terms of their means of latency period in those with static cervical lengths of >1.5-2.5 cm.

Despite the presence of a statistically significant difference in static and dynamic cervical length among groups A, B, and C, there was no statistically significant difference in latency period in those with cervical lengths of 1.5 cm, >1.5-2.5 cm, and >2.5 cm.

We asserted based on these findings that the longer the cervical length, the shorter the latency period, dynamic cervical length is more accurate than static cervical length, and as long as the mean cervical length after fundal pressure is less than the mean cervical length using the interval dynamic method, the fundal pressure method is more educative than the interval method for cervical evaluation.

Aside from the statistical explanation for our preference for the fundal method to evaluate the cervix dynamically, there are other arguments against the interval approach owing to the patients' unwillingness to have repeated transvaginal ultrasounds, the possibility (at least theoretically) of infection, induction of labour, or membrane rupture, both money and time consuming, and exhaustion in both patients and doctors.

In group B, there was no statistically significant difference between both categories of funnel width (<0.7 cm and ≥ 0.7cm) as regard their latency period in those with dynamic cervical length ≤1.5 cm and >1.5-2.5 cm. Furthermore, there was no relationship among funnel width and latency period. This implies that in those with threatening preterm labor pains, funnel width wasn't a predictive of preterm birth.

In groups A, B, and C, there were inverse correlations among gestational age (GA), fundal level (FL), and mean gestational age (MGA) and latency period. This indicates that the shorter the latency period, the higher the gestational age of cases of threatening preterm labor. In group A, B, and C, however, there was a direct correlation among parity and static cervical length. This assumed that having a low parity was a risk factor for having a short cervix (short latency period).

A 25-year-old Mangolian primigravida had unexpected preterm premature rupture of membranes at 20 weeks gestation. After 8 days of expectant management, the amniotic fluid release stopped and she became able to carry the pregnancy to term with a normal feto-maternal outcome at 37 weeks. Savits et al., 1997. examined a perinatal data set of 24,831 patient populations in the Nova Scotia Atlee from 1986 to 1992 who had membrane rupture prior to labor onset and had live births. These findings showed that the earlier in gestation the rupture occurs, the less likely labor will begin inside the time periods specified.[14,30]

El Sokkary et al study noted a positive correlation among cervical length and latency interval. Mehra et al reported that shorter transvaginal cervical length independently predicts delivery within 7 days in women with PPROM.[7,16]

Phupong and Kulmala identified the factors linked to longer latency periods in singleton pregnant women with a gestational age between 28 and 34 weeks had PPROM) A shorter latency period of 2 days was linked to a higher gestational age at PPROM and cervical dilatation >2 cm.[24]

Rizzo et al found that a cervical length of 20 mm was linked with shortened latency in 92 singleton pregnancies with PPROM, and Gire et al discovered the same. While, Kathir et al noted that cervical length at the time of admission following PPROM was not correlated with latency internal.[9,15,28]

Reduced cervical length is frequently linked to dynamic cervical change. Patients with larger initial cervical lengths may experience a higher chance of premature birth due to dynamic change. The lowest cervical length discovered may be preferable to the initial cervical length when assessing the risk of premature birth in a patient with preterm labour symptoms.[13]

Earlier research used paired case-control design. The study included all female patients with dynamic cervical shortening (4 mm) identified at a university hospital between 2010 and 2017. Two control groups of women were found by comparing the least and maximal cervical lengths assessed, in addition to age, parity, gestational age, previous context of spontaneous preterm birth, indications of preterm labour, and delivery year. Rates of spontaneous preterm delivery were significantly higher in women with dynamic cervixes than in the control group matched for maximum cervical length and were equivalent to the control group matched for minimal cervical length at 37 weeks and 35 weeks, respectively. Cervical length prognostic and predictive scores for preterm birth incidence were noticeably lower in those with dynamic cervixes at varying cut-off points.[29]

After controlling for cervical length, Owen et al discovered that neither dynamic shortening nor funnelling had been significantly associated with spontaneous preterm delivery. This was observed in a 1999 study of 183 high-risk singleton pregnancies (those with spontaneous preterm births) that had undergone cervical length measurements between 16 and 19 weeks of gestation. The discrepancy in our analysis can be accounted for by three different factors. In spite of having a higher sample size than our study, only 16 cases (8.75%) of dynamic changes occurred in their study, compared to 25 cases (50%) in our study. Second, they employed the dynamic (functional) cervical length, which was later defined as the smallest cervical length ever observed after any dynamic shortening. Finally, they chose gestational ages ranging from 16 to 19 weeks, as opposed to ours, which ranged from 28 to 34 weeks.[23]

Nooshin et al study showed that cervix funnelling had no meaningful correlation with preterm labor before week 37. Nevertheless, there was a significant link between cervix funnelling and preterm labor before week 34. Several studies had confirmed the link between cervix funnelling and preterm labor before week 35. However, no significant link has been found between cervix funnelling and preterm labor before week 37.[10,21,31]

In our study, we used fundal pressure as a method to induce dynamic cervical changes. A large-scale study in Japan found that uterine fundal pressure maneuvers (UFPM) is used in 11.4% of total vaginal deliveries in 89.4% of perinatal medical centers Japan association of obstetricians and gynecologists, 2014.[12]

Our findings were consistent with previous studies in that preterm birth is more likely in primiparous women. Ananth et al identified primiparity as a health risk for both spontaneous and medically stated preterm birth. Also, Dahman et al study found parity to be a key risk factor for preterm birth. According to Romero et al, high parity, together with nulliparity, is a risk factor for spontaneous preterm birth.[2,5,6]

According to this study, the latency period increases with cervical length. The latency time and gestational age were inversely related. If we take the shortest (functional or dynamic) duration, if any, the prognosis of premature labour cases in terms of the latency time is often virtually the same. Parity and cervical length had a clear relationship. Thus, having a short cervix was associated with having a low parity (short latency period).

Limitations

A small sample size of the study, another major limitation of small studies is that they can produce false-positive results, or they over-estimate the magnitude of an association.

The evaluation system of clinical and radiographic outcomes was not uniform, for example more than one person make Ultrasound measurements of cervical length.

CONCLUSION

Dynamic cervical assessment increases the predictive ability of the transvaginal ultrasound for preterm labour i.e. more representative for cervical length than the static one. Dynamic cervical length is the cervical assessment using the fundal pressure method is more informative than the interval method. There were inverse relationships between gestational age with the latency period. There was a direct relationship between the parity and the cervical length, this means that low parity was a risk factor for short cervix (short latency period). Dynamic cervical assessment provides a great challenge for further researches in diagnosis and prognosis of preterm labour.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Habashy AE, Tappozada T, Sayed SME. Comparison between static and dynamic cervical assessment in prediction of preterm birth. Int J Reprod Contracept Obstet Gynecol 2022;11:2954-62.