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Research Article

CHANGES OF BIRTH CANAL DURING PREGNANCY¹Dr. Ariba Mumtaz, ¹Dr. Aroosa Shahbaz and ²Dr Mehr Muhammad Imran¹Allied Hospiatal Faisalabad²DHQ Hospital Faisalabad**Abstract:**

Objective: TVS (transvaginal sonography) is the recommended method for the interrogation of length of the cervix. The objective of this research work was the enquiry of the changes in length of cervix during common pregnancy by transvaginal sonography.

Methodology: The research conducted from April 2016 to April 2017. One hundred and fifty pregnant females were the participants of this research work. The research was conducted at Nishtar Hospital Multan. The alterations in the length of cervix were interrogated in common pregnancies by transvaginal sonography in all 3 trimesters. The pregnancy period in the participants was eight to thirty-seven weeks. Statistical analysis carried out with the help of ANOVA & Chi-Square methods.

Results: In the 4th to 6th month of pregnancy, the length of the cervix was twenty-six millimetres at minimum and average length of cervix was 40.72 millimetres. In the first three months of pregnancy period, the length of cervix was fifty-six millimetres at maximum and average length of cervix was about 39.03 millimetres. The average length of cervix was smallest in less than twenty year of age participants which was 37.83 millimetres. The average length of the cervix was largest in the participants of more than thirty-five years of age which was forty millimetres.

Conclusion: TVS is very helpful method for the investigation, assessment and management of deliveries before the complete pregnancy period & cervical deficiency in performing its function.

Key Words: TVS, cervix, average, pregnancy, reduction, transvaginal

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INTRODUCTION:

Cervix plays an important role in the prevention of the early delivery and keeping the foetus safe [1]. The detection of the reduction or expansion of the cervix & administration of the cervix abnormality in the deliveries are very vital factors [2]. The reduction in the length of the cervix increases the risk of delivery before the complete duration [3]. In recent times, TVS is very useful in the detection of the insufficiency of cervix [4]. This method of sonography is very safe and recognizable in the investigations of the cervix than other types of sonographies as used for abdomen [3, 5]. TVS is the ideal model for the investigations of the cervix [6, 7].

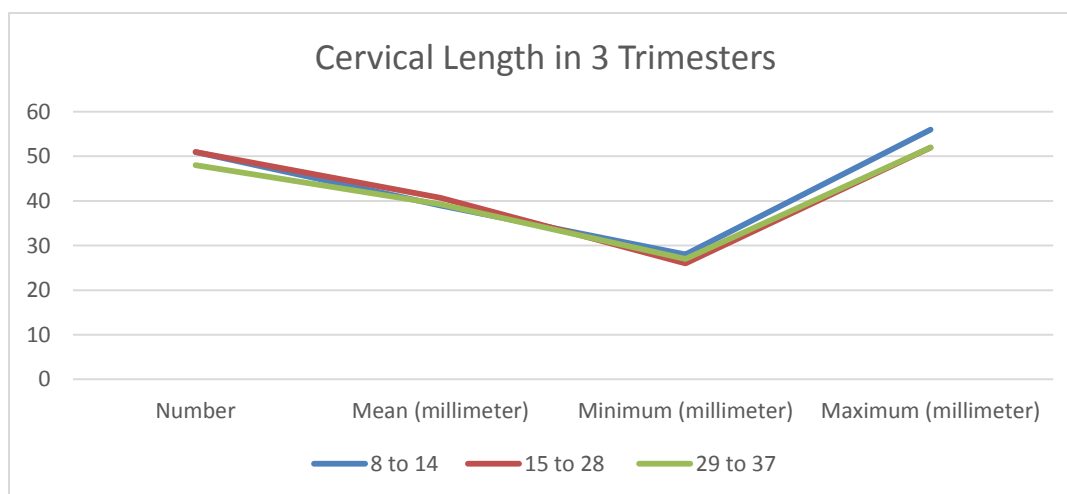
TVS concluded that in the participants who had in time delivery, the length of cervix was not changing during the 1st thirty week of pregnancy but is reduces continuously in the last three months of the pregnancy period [8]. The length of the cervix is almost permanent during 1st sixteen weeks of the pregnancy period, after that it reduces regularly with the increase of pregnancy period [8] and there is an opposite association among the length of cervix and delivery before complete duration of pregnancy [9].

In one case study, the length of cervix was evaluated in twenty fourth and twenty eighth weeks of the pregnancy period and concluded that the pregnant females whose length of cervix were gradually reducing, had a high danger of deliveries before mature pregnancy period [4].

In a research work, the length of cervix was interrogated in two groups of pregnant females who had mature and immature deliveries with the help of TVS and average lengths of cervix were thirty-two millimetres and eighteen millimetres respectively [10]. Another research concluded the lengths of cervix in eleven to fourteen weeks of pregnancy then fourteen to twenty-two weeks of pregnancy period and displayed that the length of cervix during eleven to fourteen weeks of the pregnancy in term & before term was equivalent while throughout twenty-two to twenty-four weeks of pregnancy period in the before mature deliveries, it was smaller. So, the reduction in the length of cervix increases the danger of delivery before complete maturation, the medical investigations of the participants with confirmed insufficiency of the cervix is very vital with help of TVS [3].

Table-I: Canal length in three trimesters of pregnancy

Parameters	8 - 14 (weeks)	15 - 28 (weeks)	29 - 37 (weeks)
No of Patients	51	51	48
Mean (millimeter)	39	40.7	39.3
Minimum (millimeter)	28	26	27
Maximum (millimeter)	56	52	52

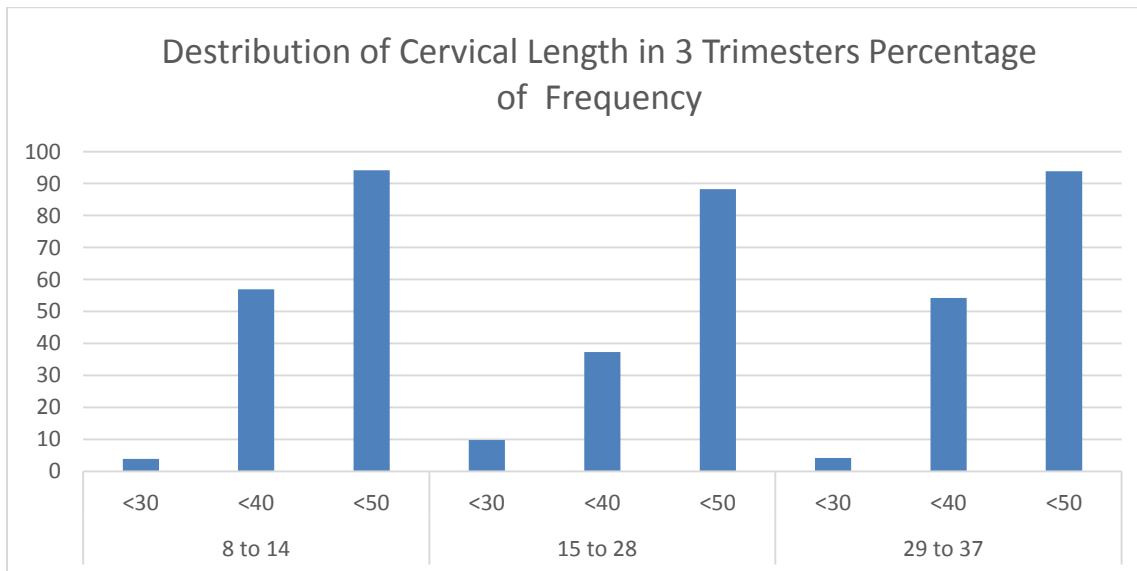


METHODOLOGY:

The research conducted from April 2016 to April 2017. During that study, one hundred and fifty pregnant females who admitted in Nishtar Hospital Multan had included in this research work. The alterations in the length of cervix were assessed in normal pregnancies in all three periods of three months (fifty pregnant females from each trimester). Radiologist used the method of TVS (transvaginal sonographically) for this purpose. The duration of the pregnancy period in the participants of this research

work was from eight to thirty-seven weeks. The participants with a previous history of curettage & dilatation, having child before this pregnancy, abnormalities in the cervix, delivery before the complete maturing of pregnancy and cerclage were not included in this research work. The participants were separated into three groups based on age. First group included the participants having less than twenty year of age, second group was from twenty to thirty-five year of age and 3rd group was more than thirty-five year of age.

Table-II: Distribution of cervical length in 3 trimesters									
Parameters	Duration of Pregnancy (in weeks)								
	8 - 14 (weeks)			15 - 28 (weeks)			29 - 37 (weeks)		
Cervical length (millimeter)	<30	<40	<50	<30	<40	<50	<30	<40	<50
Frequency (%)	3.9	56.9	94.1	9.8	37.3	88.2	4.2	54.2	93.8

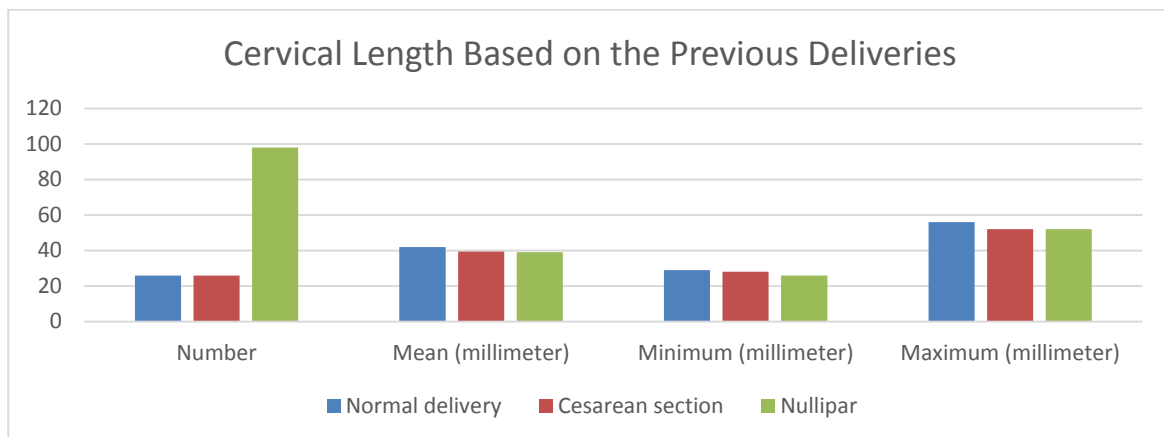


The tables of elaborate statistics, NAOVA & Chi Square method were in use for the assessment of collected data. The information of this research work was explained to every participant of the research work. All participants gave their willing to take part in this case study.

RESULTS:

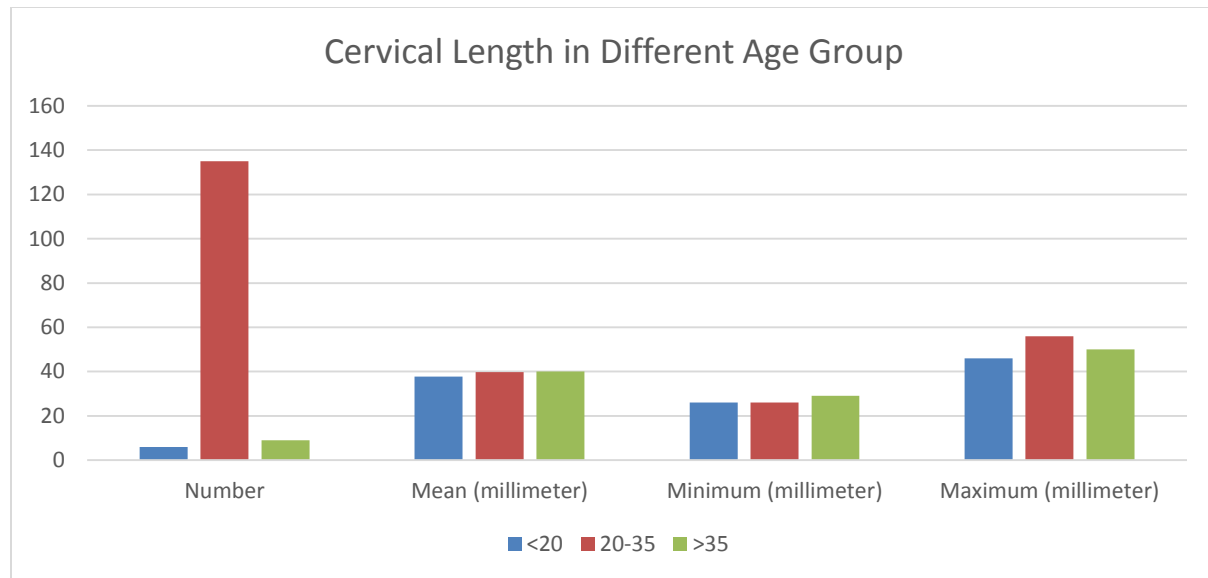
Table-1 shows that the length of cervix was smallest in the 2nd trimester which was 26 millimetres and the average length of cervix was largest as 40.72 millimetres while the length of cervix was largest as 56 millimetres and average length of cervix was smallest as 39.03 millimetres in the first three months of the pregnancy period. Table-2 describes that the length of cervix smaller than fifty 50 millimetres was the most frequent & the length of cervix smaller than thirty millimetres was not common in every three months' period of the pregnancy. The length of cervix in each type of delivery is available in Table-3

Parameters	Delivery Type		
	Normal	Cesarean	Nullipar
No of Patients	26	26	98
Mean (millimeter)	41.9	39.5	39.1
Minimum (millimeter)	29	28	26
Maximum (millimeter)	56	52	52



The smallest length of the cervix was observable in the nulliparas & the largest length of cervix was observable in the normal deliveries. The separation of the age groups is available in Table-4. The length of cervix was smaller in the 1st two age groups and it was larger in the age group of the participants having maximum age. The average minimum & maximum length of cervix in the 1st and 3rd age groups were 37.83 millimetres and forty millimetres respectively. The assessment of average length of cervix with respect to the parity of one and more than one concluded the average length of cervix as 38.49 millimetres and 40.79 millimetres respectively.

Parameters	Age Groups (in years)		
	< 20	20 - 35	>35
No of Patients	6	135	9
Mean (millimeter)	37.8	39.7	40
Minimum (millimeter)	26	26	29
Maximum (millimeter)	46	56	50



DISCUSSION:

The investigation of length of cervix carried out in all three trimesters which displayed that the largest length of cervix was available in the 1st three month of the pregnancy period. There was no significant disparity among the all three trimesters according to the statistical methods. TVS method was in use for the investigation of the length of cervix during the pregnancy period of eight to thirty-seven months and this provided the maximum length of cervix during the pregnancy weeks of twenty to twenty-five [11], which was not similar to the outcomes of our results. Another research work concluded that there is not a significant change in the length of cervix [12]. The length of cervix in the first sixteen weeks of the pregnancy duration is not alterable and after that it starts to be short in length with the increase of time [8] which is much similar to the outcomes of this research work. The evaluation of the length of cervix in all the three groups carried out. There was no disparity in the significance in all three groups. In one case study, it was concluded that there is no effect of age on the variation of the length of cervix [13] and this outcome matches with the findings of this case study.

The investigation of the length of cervix carried out according to the number of the pregnancy which shows that length was longer in pregnant females already having children than the females having their first pregnancy. There was disparity in the significant statistical value of this factor. In another research work, the outcome concluded that the length of cervix is longer in the females already have children than the maiden pregnancy or the females who had

caesarean operation before or had abortion in the first three months of the pregnancy [12], which is similar to the results of this case study. Another research work concluded that there was no such difference as mentioned above [14, 15] which is just opposite to the outcome of his research work.

With respect to the type of delivery, the investigation of the length of cervix carried out and no significant disparity was observed. In one research work, it was concluded that the type of delivery had an impact on the length of cervix which is not obvious from the outcomes of this research work [12]. In this research work, one hundred and fifty-five females having pregnancy were interrogated & the outcome of the past case studies about the impact of number of child and gravity on the length of cervix were under consideration.

CONCLUSIONS:

TVS (transvaginal sonography) in the interrogation of the length of cervix, discovery and the pattern of the type of delivery and in efficiencies of the cervix to deliver the child was very helpful.

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