

Prevalence of Diastasis Recti Abdominis in Females with Respect to Their Stage and Status of Pregnancy

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ABSTRACT

Objective: To find the prevalence of diastasis recti abdominis in females with respect to their stage and status of pregnancy

Methodology: A cross sectional study was conducted in Lahore General Hospital from September 2018 to January 2019. Child bearing female in the age group of 20-40 years. Child bearing females not willing to participate, menopausal females, females with any gynecological disorders and those who suffered from ectopic pregnancy were excluded from the study. The questionnaire distributed as hand-outs in selected hospitals. Data was collected in person/ through representatives appointed in every hospital.

Results:

There was no statistically significant association between previous pregnancy and presence of Diathesis Recti (P=0.566). A statistically significant association between status of pregnancy and presence of Diathesis Recti was present (p≤0.001).

Conclusion

The prevalence of Diathesis Recti was higher in the females who did not have a history of previous pregnancy. The presence of Diathesis Recti was the highest in females in their third trimester while those in the first and second trimester did not suffer from this condition. It was also seen that the non-pregnant females suffered more from the condition in comparison to the pregnant women.

Keywords: Diathesis Recti, Pregnant females, Non-pregnant females, trimester.

INTRODUCTION

Rectus Abdominis, most prominent abdominal muscle is the rectus abdominis. It is the long, flat muscle that extends vertically between the pubis and the 5th, 6th and 7th ribs. Linea Alba, the strong tendinous sheath that separates the rectus abdominis down the middle.(1) The rectus abdominis help to flex the spinal column, narrowing the space between the pelvis and the ribs. External oblique muscles are located on each side of the rectus abdominis. the muscles fibers of the external oblique run diagonally downward and inward from the lower ribs to the pelvis(2), forming the latter V.(3)

During pregnancy a hormone called "Relaxin" is released which causes body tissue such as ligament to loosen up, allowing for necessary changes in child bearing women's bodies due to the growing uterus(4) one of these changes is the shift of the abdominals as the uterus grows and start putting pressure on the abdominal wall.(5-7) Abdominal muscles and back maintain your upright posture. During pregnancy period, uterus expands and stretched abdominal muscles causing a muscle imbalance leads to functional problems(8). In pregnancy, when abdominal muscles are weak then back muscles work over time, compensating for the weak abs. This puts a considerable strain on your lower back. This results into lower back pain and discomfort.

Diastasis recti abdominis is a separation between the left and right side of the rectus abdominis muscle(9), in the midline at the linea Alba, which cover the front surface of the belly area. The diastasis may be acute or severe and sometimes causing in abdominal viscera's herniation when this condition is severe, (10) the abdominal wall consist only of a layer of a skin periosteum and attenuated fascia. We believe that a large diastasis recti abdominis may harm any of the function of the abdominal wall including its role in respiration; trunk flexion; trunk stability; posture; delivery of fetus; trunk rotation and side bending.(11) Any deformity of the abdominal wall muscles or the rectus sheath has great effect to these activities. It is commonly diagnosed as a normal condition in new born and seen most frequently in pre mature and African American infants. To find the prevalence of diastasis recti abdominis in females with respect to their stage and status of pregnancy

MATERIALS AND METHODS

A cross sectional study was conducted in Lahore General Hospital from September 2018 to January 2019. After ethical approval form the institutional review board. The sample size was calculated using the formula: Sample Size: $N / 1 + [N \times (.05) / (.05)]$ where 'N' is population size. Simple Random sampling technique was used. Inclusion Criteria was Child bearing female in the age group of 20-40 years. Child bearing females not willing to participate, menopausal females, females with any gynecological disorders and those who suffered from ectopic pregnancy were excluded from the study. The questionnaire will be distributed as hand-outs in selected hospitals. Data will be collected in person/ through representatives appointed in every hospital. Data will be collected through questionnaire comprising of two major sections. Demographic Information of child bearing female and "four- finger test" will be used to examine the attitude prevalence of diastasis recti. The data was analyzed by using the SPSS 23 statistical software. Nominal data was presented as percentage and frequency while numeric data was presented as mean and its respective standard deviation. P value less than equal to 0.05 was considered significant. Chi square test will be used to find the association of previous pregnancy with the presence of Diathesis recti. Fisher exact test was used to find the association between presence of Diathesis recti and status of pregnancy (trimester: first, second, third/ not-pregnant).

RESULTS

A cross sectional study was conducted on 136 females with the mean age of 27.76±5.076. it was seen that 2.2 % of the participants were their first trimester, 2.2% in their second while 23.5% were in their third trimester. It was seen that 36% females suffered from Diathesis Recti Abdominus while 64% did not have it. Out of all the participants 68.4% were females with previous pregnancy while 31.6% had never been pregnant before.

Table 1 shows that there was no statistically significant association between previous pregnancy and presence of Diathesis Recti with the prevalence being higher in the females who did not have a history of previous pregnancy.

Table 1: Association between previous pregnancy and presence of Diathesis Recti

Previous pregnancy	Presence of Diathesis Recti		P value
	Yes n(%)	No n(%)	
Yes	35 (25.7%)	58 (42.6%)	0.566
No	14 (10.3%)	29 (21.3%)	

Table 2 shows a statistically significant association between status of pregnancy and presence of Diathesis Recti. The presence of Diathesis Recti was the highest in females in their third trimester while those in the first and second trimester did not suffer from this condition. It was also seen that the non-pregnant females suffered more from the condition in comparison to the pregnant women as shown in table 2.

Table 2: Association between status of pregnancy and presence of Diathesis Recti.

Status of pregnancy	Presence of Diathesis Recti		P value
	Yes n(%)	No n(%)	
First trimester	0 (0%)	3 (2.2%)	≤0.001
Second Trimester	0 (0%)	3 (2.2%)	
Third Trimester	2 (1.5%)	30 (22.1%)	
Not pregnant	47 (34.6%)	51 (37.5%)	

DISCUSSION

The data represent a significant association between woman's placement in childbearing year and the presence or absence of diastasis recti abdominis. Diastasis recti abdominals was first found in first trimester group and the second trimester group.(12)

Mus is a city in the southeastern part of Turkey, with the population of 500. Low socio-economic level, marriage at an early age and absence of family planning methods are the numerous multiparity cases in very young adult woman. Rectus abdominis muscle separation in the midline at the linea Alba and bulging of abdominal wall is defined as diastasis recti(13) but whether it is a pathological condition or a natural part of aging remains unknown. Hormonal and biochemical changes during pregnancy may be predisposing factors for this condition. Diastasis recti abdominals may result in a low back pain, respiratory and posture problems as well as pelvic relaxation symptoms.(14) There is a relationship between the presence of diastasis recti abdominis and the diagnosis of stress urinary incontinence, fecal incontinence and pelvic organ prolapse (15, 16)

Different studies were conducted to find the diastasis recti abdomens in child bearing females. Data were collected to discover where along the length of linea Alba diastasis recti abdominis. All subjects were measured 4.5cm above, 4.5cm below, and at the umbilicus. The majority of diastasis occurs at the umbilicus (52%), although a large number of women also demonstrated above the umbilicus (36%). Only 11% of diastasis were found below the umbilicus (17, 18)

The design of this study was cross-sectional rather than longitudinal. This design adequate to determine the incidence of diastasis recti abdominis that cannot determine the etiological factors. The study demonstrates a strong association between advancing pregnancy and diastasis recti abdominis. Weak abdominals may be etiological factor. The data suggest that strong abdominal muscles before pregnancy decreases risk of diastasis recti abdominis. The multiparous woman would probably be at a greater risk of development of diastasis recti abdominis simple by virtue of repeated stretch on the abdominal wall.

CONCLUSION

The prevalence of Diastasis Recti was higher in the females who did not have a history of previous pregnancy. The presence of Diathesis Recti was the highest in females in their third trimester while those in the first and second trimester did not suffer from this condition. It was also seen that the non-pregnant females suffered more from the condition in comparison to the pregnant women.

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