



## DIASTASIS RECTI ABDOMINIS AMONG POSTNATAL WOMEN - PREVALENCE AND REPORT OF URINARY INCONTINENCE

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### ABSTRACT

**Introduction:** Diastasis recti abdominis is defined as impairment with separation of rectus abdominis muscle through the line of Linea alba. Diastasis recti is common during pregnancy and in postnatal period with risks of pelvic floor muscle weakness leading to urinary incontinence. **Objectives:** To examine the correlation between diastasis recti abdominis among postnatal women with incidence of urinary incontinence. **Method:** 40 postnatal women with age ranging between 23 and 34 years were included. The values were collected through finger palpation, which is taken 4.5 cm above and below umbilicus and incontinence impact questionnaire was used to assess the urinary incontinence. **Result:** The mean value, standard deviation, t value and p value of the outcome measures including finger palpation and

incontinence impact questionnaire showed a significant value. **Conclusion:** The study concluded that women with diastasis recti had the history of urinary incontinence.

**KEYWORDS:** Diastasis recti abdominis, Urinary incontinence, Finger palpation, Incontinence impact questionnaire, postnatal women.

### INTRODUCTION

The abdominal wall is well packed with group of muscles where the orientations directed vertically, horizontally and obliquely.<sup>[1]</sup> During pregnancy, there will be increase in uterus

size and volume due to increased hormonal and physiological changes that in turn change the dimension of uterus. The factors that mainly affect pregnancy are hormonal changes with increasing levels in relaxin, progesterone and oestrogen.

The main muscle affected is rectus abdominis, which is predominantly separated during pregnancy and persists in postnatal period. The rectus abdominis muscle originates from fifth rib continues through seventh rib and inserts in pubic symphysis or pubic crest. The muscle is wide, broad and narrow superiorly whereas thick inferiorly.<sup>[2]</sup>

Diastasis recti abdominis is the excessive separation between both rectus abdominis muscles connected by linea Alba. The linea Alba is a tendinous raphe, which extends from xiphoid process till pubic symphysis. If the separation is more than 2.7 cm it is considered pathological.<sup>[3]</sup>

The diastasis recti abdominis causes pain, discomfort, instability of trunk and weakening of abdominal wall. The prevalence of diastasis recti was estimated in 36% of women between 5 week and 3 months of postpartum who had higher level of separation of diastasis recti.

Urinary incontinence is defined as any leakage of urine, which is involuntary in nature. The incidence is more common in age group between 15 to 64 years of age. The percentage ranges between 10 to 55% of population. The primary risk factor of urinary incontinence was pregnancy and has an impact in the postnatal period. When the pelvic floor muscles contracts, there will be co-contraction of abdominal muscles especially transverse abdominis muscle. Since, there is close relationship between pelvic floor muscles and abdominal muscles; there will be decrease in the function of pelvic floor muscles due to weakening of abdominal muscles during pregnancy.<sup>[4]</sup>

The prevalence rate of urinary incontinence among postnatal women is 12.5% in primiparous women and 26.4% in multiparous women. Moreover, after caesarian section, the incidence was 16% and after vaginal delivery, it was 19.8%.<sup>[5]</sup>

According to Theresa M. Spitznagle, A large percentage of the patient seeking urogynaecological examination had diastasis recti abdominis. Diastasis recti abdominis was well present beyond the Childbearing year in a large proportion of the women examined. Compared to the women without diastasis recti abdominis, a larger percentage of women with diastasis recti abdominis were diagnosed with support related pelvic floor dysfunction.<sup>[6]</sup>

The management for diastasis recti can be both conservative and surgery. In advanced stages, diastasis recti can be corrected with cosmetic surgery called abdominoplasty. The general conservative management includes bracing, faradic stimulation and exercises.<sup>[7]</sup> The pelvic floor exercises are beneficial as there will be co-contraction of abdominal muscles.

### **NEED OF THE STUDY**

Many studies were conducted to find out the prevalence of diastasis recti among postnatal women. Very few studies suggest the presence of urinary incontinence among pregnant and postnatal women. Therefore, this study hypothesizes whether there is relationship between diastasis recti and urinary incontinence.

### **AIM OF THE STUDY**

To study the relationship between diastasis recti abdominis and report of urinary incontinence among postnatal women.

### **OBJECTIVE OF THE STUDY**

To evaluate the prevalence of diastasis recti abdominis among postnatal women through finger palpation. To examine whether the participants with diastasis recti had the incidence of urinary incontinence and the incontinence is evaluated through incontinence impact questionnaire.

### **METHODOLOGY**

#### **MATERIALS AND METHODS**

The materials and tools used in current study.

#### **MATERIALS**

- Inch tape.
- Couch
- Incontinence impact Questionnaires.

#### **STUDY SUBJECTS**

#### **INCLUSION CRITERIA**

- Age: 23 to 34 years.
- Both primiparous and multiparous.
- Vaginal delivery.

- C-section after 1 month.

### EXCLUSION CRITERIA

- Anaemia
- Hypertension.
- Abdominal hernia.

### STUDY PERIOD AND DESIGN

The study is reported to be observational study with duration of 1 week.

### PROCEDURE

The observational study includes 40 postnatal women age ranging from 23 to 34 years. They were selected randomly and the following data like age, parity and mode of delivery were documented. After randomizing the participants, diastasis recti abdominis is assessed through finger palpation. It was evaluated while the subjects are in supine lying with flexed hip and knee. Therapist places the fingers vertically 4.5 cm above and below umbilicus and measurements were taken by instructing them to lift their head till inferior angle of scapula is out of the table.

Incontinence impact Questionnaires [IIQ-7] were given to the participants and were asked the set of questions thereby analysing the presence of urinary incontinence.

### RESULTS

Statistical analysis for prevalence of diastasis recti was performed using spss software by analysing the central tendency [average], dispersion [standard deviation]. According to the values obtained, corresponding t value and p value were calculated where the p value less than 0.001.

**Table no 1: Analysis of mean and standard deviation of finger palpation and incontinence impact questionnaire.**

Outcome Measures	Mean	Standard Deviation	Df	T Value	P Value
Finger Palpation	3.14	0.29	39	68.4	0.000
Incontinence Impact Questionnaire	0.65	0.2	39	20.5	0.000

## DISCUSSION

The analysis shows that most of the women with diastasis recti were presented with urinary incontinence. Moreover, the multiparous women had a significant distance of diastasis recti. The multiparous women also showed increased symptoms of urinary incontinence than the primiparous women.

The study included two outcome measures, finger palpation and incontinence impact questionnaire. The finger palpation is considered as the most commonly used measure to analyse the inter rectus distance.<sup>[14]</sup>

According to Mota et al, the palpation have a good reliability and validity in clinical practice.<sup>[15]</sup>

Theresa M. Spitznagle suggests that there was a prevalence of diastasis recti among urogynaecological population with symptoms of fecal incontinence and pelvic organ. The patients with diastasis recti may have incidence of support related pelvic floor dysfunction than the patients without diastasis recti abdominis.<sup>[16]</sup>

T. V. Chitra and panicker seetha states that pregnant women had a greater incidence of urinary incontinence. The incidence of incontinence was higher with increasing p value of 0.0007.<sup>[17]</sup>

The above studies also states that there is relationship between diastasis recti abdominis and urinary incontinence.

## CONCLUSION

The result of this study concluded that there is prevalence of diastasis recti among postnatal women. There is considerable increase in width among multiparous than that of primiparous women. In addition, women with diastasis recti abdominis have greater incidence of urinary incontinence. Thus, concluded that there is a relation between diastasis recti abdominis and urinary incontinence.

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