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Effect of Kinesiology Taping and Abdominal Bracing with Core Strengthening Exercise for Diastasis Recti After Pregnancy - Case Series

Radhika Gopal. S., S. Kavitha, M. Premkumar

Abstract

Background: Prevention of Diastasis consists in eliminating the factors that lead to its occurrence, strengthening the abdominal muscles even during pregnancy significantly improve the course of childbirth and reduces the incidence of Diastasis Recti. Strengthening of transverse abdominis muscles or rectus abdominis muscles and abdominal bracing, kinesiology taping is very much useful in the treatment of Diastasis Recti. Aim & objective of the study: To find out the effect of kinesiology taping and abdominal bracing with core strengthening exercises for Diastasis Recti after pregnancy. Data Analysis and Results: This study results shows that there is statistically significant improvement in Inter Diastasis Recti Distance in cm after intervention of kinesiology taping and abdominal bracing with core strengthening exercise for Diastasis Recti after pregnancy in the subjects. There is statistically significant improvement in Diastasis Recti Distance in cm after intervention with $p < 0.05$. Conclusion: It was concluded that the kinesiology taping and abdominal bracing with core strengthening exercises have statistically significant improvement in reducing Inter Recti Distance in Diastasis Recti in postpartum women.

Keywords: Diastasis Recti, Pregnancy, Kinesiology Taping, Abdominal Bracing, Core Strengthening Exercises.

1. Introduction

Diastasis Recti [DR] or Rectus Abdominis Diastasis is the split in the middle of the two rectus abdominal muscles (known as a Diastasis) typically results from excessive stress on the wall of the abdomen, severe overstretching, and the thinning and lengthening of the linea alba. The most frequent causes of DR are being pregnant, being in the second stage of labour, and having abdominal fat or obesity.¹⁻³ DRA is the gap more than two fingers breadth between two rectal abdominal muscle bellies either above or below the umbilicus. Diastasis Recti, if left untreated, can have harmful effects on one's health, including an abdominal hernia, lower back discomfort, pelvic floor issues, and incontinence.⁴⁻⁶

Kenzo Kase created kinesio taping (KT) in 1970. KT has become more popular as a treatment for a variety of musculoskeletal problems and as a tool for rehabilitation. Kinesio tape is a unique elastic tape that stretches up to 140 percent of its real length without putting any constraints on range of motion. It does this by mimicking the elasticity of skeletal muscle. By restoring proper muscle function, enhancing blood and lymphatic circulation, reducing discomfort, realigning subluxed joints, and enhancing joint position and kinaesthetic awareness, according to Kenzo Kase, it can improve an already weaker muscle. Compared to stiff band, it is thinner and more elastic. Due of its air penetrable and water-proof construction, KT can stay for three days.⁸

Callipers or clinical palpation can be used to determine the inter-rectal distance (IRD). Although these methods of measuring are quite simple, they could not be precise because of the wideness of subcutaneous fat and slackening of the wall of the abdomen. The IRD⁹ is often measured using ultrasound, and the results are congruent with those obtained using callipers and palpation.⁹ In nulliparous women, the standard width of linea alba may be up to 15 millimetres at the xiphoid level, up to 22 millimetres at the reference point 3 centimetres

above the umbilicus, and up to 16 millimetres at the reference point 2 centimetres below the umbilicus. DR is considered pathological if the IRD at the umbilical level is beyond 2.7cm.¹⁰

DRA is such a common postpartum ailment that Katy Bowman claims that it is widely accepted as unavoidable and associated with hormonal fluctuations and the significant abdominal wall stretching. During pregnancy the linea alba also weakens due to connective tissue softening caused by increased levels of relaxin, progesterone and estrogen.⁹ Prevention of Diastasis consists in eliminating the factors that lead to its occurrence, strengthening the abdominal muscles even during pregnancy significantly improve the course of childbirth and reduces the incidence of diastasis.¹¹

The main aim of this study is to find the effect of kinesiology taping and abdominal bracing with core strengthening exercises for Diastasis Recti after pregnancy. The study purpose was to estimate the effect of kinesio taping and abdominal bracing with core strengthening exercises for Diastasis Recti after pregnancy. It is very significant if kinesiology taping, abdominal bracing and core strengthening exercise improves Inter Diastasis Recti Distance then the menace of Diastasis Recti will be rectified and the pregnant ladies will be benefited.

2. Materials and Method

Study Design

Case series

Study Setting

Abhinav Pain and Neuro Rehabilitation Centre.

Study Duration

3 Months

Study Population

In and around Madurai District.

Study Sampling

Convenient sampling.

Study Sample

5 Subjects.

Criteria of Selection

Inclusion Criteria

Age - 25-30.

Gender – Female.

Normal delivery.

First pregnancy.

Within a day to one year after delivery.

IRD less than 2 fingers gap.

Exclusion Criteria

C - Section delivery.

IRD more than 2 fingers gap.

Beyond one year after delivery.

Patient without co –operation.

Patient with other systemic complications.

Variables

Inter Recti Distance (IRD) in cm.

Interventions

Kinesiology taping

Abdominal bracing

Core strengthening exercises

Materials & Tools

Pen

Paper

Pillows

Kinesiology taping

Abdominal brace

Procedure

For this study, 5 patients who met the inclusion criteria were included. The pre interventions variables of inter recti distance was measured, recorded and documented.

The patient receives kinesiology taping for 2 sessions per week. The KT is applied perpendicular to the recti muscle for 48 hours. It is applied in 50 -75 % tension. The patients were given abdominal bracing for 12 weeks. The core strengthening exercises are given for 3 sessions per week for 3 months. Along with this IFT is given for low back pain. Then the post interventions variable of IRD is measured and documented. Data Analysis was done with suitable statistical methods for windows.

3. Data Analysis and Results

This study results displayed that there was a substantial development in Inter Diastasis Recti Distance (IDRD) in cm after intervention of kinesiology taping and abdominal bracing with core strengthening exercise for Diastasis Recti after pregnancy in the subjects. There is statistically significant improvement in Diastasis Recti Distance in cm after intervention with $p < 0.05$.

Table 1: Pre and Post Mean, Standard Deviation, T Value and P Value of Inter Diastasis Recti Distance in the Subjects (Source: Author).

No of Subjects	Intervention	Mean	SD	T Value	P Value
5	Pre	1.6	0.3	2.88675	0.0203
	Post	0.6	0.3		



Fig. 1: Performance of Core Stabilization Exercises (Source: Author).



Fig. 2: Performance of Kinesiology Taping (Source: Author).

4. Discussion

Significant reduction Inter Diastasis Recti Distance (IDRD) in cm was happened in subjects, because of the healing of Diastasis Recti with approximation of muscle fibers by kinesiology taping and toning of rectus abdominis

muscles by strengthening process of core strengthening muscle with abdominal bracing.

This study's findings support those of Lucyna Ptaskowska et al. 2021, who found that utilising the corrected technique to apply KT tapes can help reduce RAD in women for up to

a year following birth. However, it does not appear that this is directly connected to an increase in the rectus abdominis muscles' bioelectrical activity.¹²

The findings of this study reinforce the findings of Nisha Acharya et al 2015 which found that bracing while performing abdominal exercises significantly reduced the occurrence of DR in females in early post-natal period. This shows that exercises for postpartum women tend to be particularly beneficial in the early going, suggesting a nonsurgical option for Diastasis Recti Abdominis muscle.¹³ So the intervention of kinesiology taping and abdominal bracing with core strengthening exercise for Diastasis Recti after pregnancy which will be more beneficial. Based on outcome of this study, this concept can be extended in future studies.

5. Conclusion

It was concluded that the kinesiology taping and abdominal bracing with core strengthening exercises have statistically significant improvement in reducing the inter recti distance among post-partum women with DRA.

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