

EFFECIVENESS OF THE WILLIAMS EXCERCISE IN MECHANICAL LOW BACK PAIN

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Mechanical low back pain is defined as pain secondary to over use of a normal structure, aggravated by static loading of the spine, long levered activities or levered postures. It is eased when the spine is balanced by multidirectional forces or when the spine is unloaded [2] Prevalence of the Back pain and related symptoms rank among the second most frequent medical complaints. Disability from low back pain is second only to the common cold as a cause of lost work time and is the most common cause of disability in people under 40 years of age. Mechanical back pain implies the source of pain is in the spine and/or its supporting structure. The surrounding muscles and ligaments may develop reactive spasm and pain. The prognosis for complete recovery is excellent. Most people with acute mechanical back pain respond very rapidly to treatment. About 90 percent of people with acute low back pain are symptom-free in 1 to 2 weeks. Many of the remaining estimated 10 percent recover within 3 months.[4]

The onset of mechanical low back pain most often is the result of mechanical damage due to excessive and prolonged poor posture and mechanics, a sedentary lifestyle and inadequate conditioning[3]. Back exercises and stretching for lower back pain are powerful actions you can take for decreasing your back pain, according to the physiotherapy site. Exercises will help prevent further stiffness from the spine⁵⁻⁷, while also making your muscles less vulnerable to injury. Diligently doing the exercises daily will help you achieve the best results. This is a very useful exercise if you have strained or dislodged a facet joint in your lower back and the surrounding muscles are tight and aching. It may also help if you are suffering from a recurrence of inflammation in worn facet joints, and it can improve flexibility if you have become stiff following an episode of acute lower back pain.[8]

The back extension is a concentric exercise rather than a stabilization exercise. Instead of the lumbar spine remaining in a neutral position, the spine arches into spinal extension. This strengthens the erector spine with a contraction that causes the muscles to shorten in length during what is called the concentric phase. Back exercises and stretching for lower pain are powerful actions

you can take for decreasing your back pain, according to the physiotherapy site. Exercises will help prevent further stiffness from developing in your back, while also making your muscles less vulnerable to injury . Diligently doing the exercises daily will help you achieve the best results.^[12] Due to the complex network of bones, muscles and ligaments in the lower back , it doesn't take much to injure yourself and experience pain. Lower back pain is the most common cause of job-related disability and a leading contributor to missed work, according to the National Institute of Neurological Disorders and Stroke . A good exercise for lower back pain is one that will help you restore your strength without suffering further damage. The ultimate goal is to strengthen the core muscles that help promote spine stability.

OBJECTIVE

To know the effect of Williams exercises in mechanical low back pain by using VAS scale

NEED OF STUDY

Mechanical low back pain is the most common medical complaint and affects most people at least once in their life time. Exercises for the lower back are an effective way to prevent and control back pain. As exercises prescribed by the therapist , not paid much attention to the importance of flexion exercise. Hence the study was done to see how williams's flexion exercises relieve mechanical low back pain

METHODOLOGY

Study sample: Patient diagnosed as Mechanical back pain

Sample design: Random sampling

Sample size: 10

Duration of study: 1 week

Inclusion criteria

1. Subjects in age group of 18-40 yrs
2. Subject with pre diagnosed low back pain.
3. Pain aggravated of lumbar flexion.
4. Pain aggravated of lumbar extension.

Exclusion criteria

1. Subject diagnosed as having a tumor, infection or inflammatory disease affecting the spine.
2. Spinal or lower limb surgery.
3. Spinal fracture or structural deformity such as spondylolisthesis and spondylosis.
4. Patients contraindicated to exercise therapy.
5. Patient having nerve root compression, defined as radicular pain, decreased tendon reflex, sensory loss and motor defects.

Outcome Assessment

VAS

Procedure

Total 15 patients diagnosed as mechanical back pain in age group of 18-25 were selected; The constant of patient was taken before the treatment procedure starts. Patients were explained about the importance of flexion exercises to relieve back pain. Patients with painful extension will be given Williams exercises. The patient lies on the couch in a given position.

Williams' Flexion Exercises

Patients has been advised to lie down in the back with bilateral knee joints flexed with feet maintained flat on floor. Without pushing the legs, pelvic tilt has to be performed by the patient. This pelvic tilt should be holded in a position for 5 to 10 seconds, then the patient has been instructed to relax by maintaining the supine lying position, he/she has been asked to bring the alternate knee joints in flexion towards the shoulder for 5 to 10 seconds. After the prescribed exercise session, they have been instructed to perform Double knee to chest, by pulling right knee to chest, pull left knee to chest and hold both knees for 5 to 10 seconds, then the patients were instructed to perform Partial sit up by slowly curling the hand and shoulders off the floor. Hold briefly. Return slowly to the starting position . after 10 seconds Hamstring stretch has been done by the subjects in long sitting with toes directed toward the ceiling and knees fully extended. Slowly lower the trunk forward over the legs, keeping knees extended, arms outstretched over the legs, and eyes focus ahead. Followed by hamstring stretch, Hip Flexor Stretch has been done, by instructing the subjects to Place one foot in front of the other with the left (front) knee flexed and the right (back) knee held rigidly straight. Flex forward through the trunk until the left knee

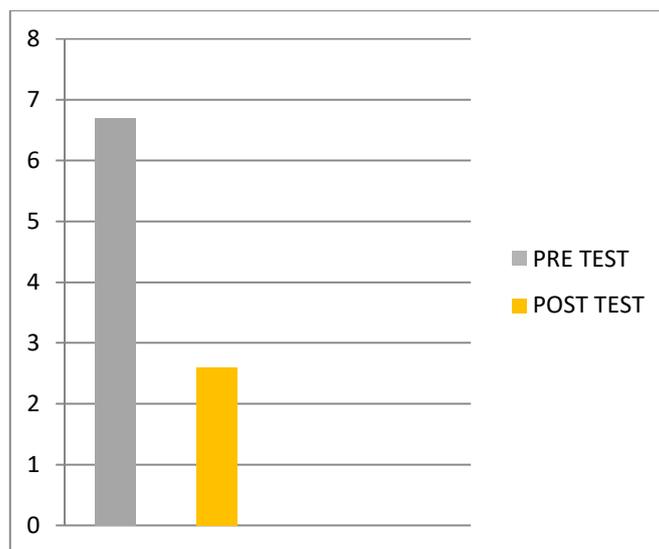
contacts the axillary fold (arm pit region). Repeat with right leg forward and left leg back and finally they have asked to perform Squat.

DATA ANALYSIS

Table 1: Pain intensity

S.NO	PRE TREATMENT VAS	POST-TREATMENT VAS
1	7	4
2	5	2
3	8	3
4	7	2
5	6	3
6	9	3
7	7	2
8	5	1
9	6	2
10	7	2

GRAPH 1: SHOWING MEAN OF THE PRE AND POST VAS MEASURES OF WILLIAMS EXERCISE



DISCUSSION

The current study was undertaken to investigate the effectiveness of the Williams's flexion exercises in mechanical low back pain. Treatment given for 1 week twice a day. Study was conducted in patients with mechanical low back pain. Results were statistically significant at the end of the week ($p=0.0001$) There was significant improvement in functional activity of patients. Statistical analysis shows that Williams exercises are more effective in relieving back pain.

CONCLUSION

Based on statistical analysis, its interpretation and evidence in the present study strongly emphasize that Williams flexion exercises are significantly effective in reducing mechanical low back pain.

LIMITATION OF STUDY

Long term follow up was not carried out. The study was conducted in a small group of population so cannot be generalized to whole population and larger study is required.

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