Effect of Postural Ergonomics and Static Gluteus Exercise Along with Bridging on Quality of Life in Individual with Mechanical Low Back Pain

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Abstract

Background: This study is to improve the posture of the patient to reduce the excessive stress on the joint and muscular structure It can reduce the mechanical low back pain in the patient .To enhance the performance and productivity of the job and prevent muscle fatigue .It can improve the posture and controls the health of the patient. So we need to study effect of static gluteus exercise along with bridging in patient with mechanical low back pain.

Objectives: To find out the effect of static gluteus exercise along with bridging in patient with mechanical low back pain. To find out the effect postural ergonomic who have low back pain.

Methodology: The study was carried out in karad area. The subjects were selected according to inclusion and exclusion criteria. Total 26 subjects were participated in this study. Prior consent and assent form was taken. Aim and procedure were explained to the subjects in their preferred language before data collection. The subjects were given static gluteal exercise along with pelvic bridging and postural ergonomic advise also given. Pre and post assessment was done before treatment and after 6 weeks of treatment respectively with the help of Visual analogue scale and the data was analysed with help of appropriate stastical analysis.

Result: In conducted study, Visual analogue scale showed statistically significant difference between pre and post treatment values. Pain decreases in individuals.

Conclusion: On the basis of the result of the study, it can be concluded that postural ergonomics and static glutes exercise along with pelvic bridging helps in reducing mechanical low back pain and improving quality of life.

Key words: *static gluteus exercise along with pelvic bridging individual with low back pain.*

Introduction

Low back pain is mostly nonspecific or mechanical. Mechanical low back pain arises from the spine, intervertebral disks and surrounding soft tissues. This comprises lumbosacral muscle strain, disk herniation, lumbar spondylosis, spondylolisthesis, spondylolysis, vertebral compression fractures, and acute or chronic traumatic injury.(1)Common causes of chronic mechanical low back pain are repetitive trauma and overuse which is often secondary to workplace injury. Most patients who experience activity-limiting low back pain suffer from recurrent episodes. Chronic low back pain affects up to 23% of the worldwide population, with 24% to 80% of patients having a recurrence at one year. (2)

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The low back pain in active workers is associated with occupational exposure.[3] Individuals in jobs which includes manual materials handling, repeated heavy lifting and lifting while twisting, are at risk of back pain leading to work absence.Exposure to job requirements for static postures are associated with back pain.[4]

The pelvic bridge pose helps to reduce excessive shortening of the hip flexors from prolonged sitting. It helpsto stretch tight hips and also helps to strengthen the gluteus. In supine position keep hips and knees bent to 90 degrees with feet flat on the floor and arms palm down by sides. Take a deep breath in, and breathe out while lifting hips off the floor until shoulders, hips, and knees are in a straight line. Hold this position for 10 seconds and repeat 3-5 times.[5]

Bend elbows to 90 degrees so that upper arm will be on the ground. Press lower back down into the ground which will create a posterior pelvic tilt. This will help to protect lower back and engager abdominals as well as your gluteus muscles.Then drive up through heels and upper back to lift your pelvis up off the ground. Lift hips up as high as possible . Focus on squeezing gluteus muscles.[6]

Pelvic bridging can be recommended as an effective method to selectively facilitate gluteus muscle activity [7]. lumbar segmental stabilization exercise and exercise to strengthen the muscles of the gluteus resulted in a greater decrease in low back pain and increase in lumbar muscle strength.[8]

Ergonomic interventions are used to prevent or reduce low back pain.[9] There is high rates of low back pain in office workers, the association between low back pain and sitting posture in the occupational setting has been infrequently studied. Tthere is association between prolonged sitting and an increased risk in low back pain[10].

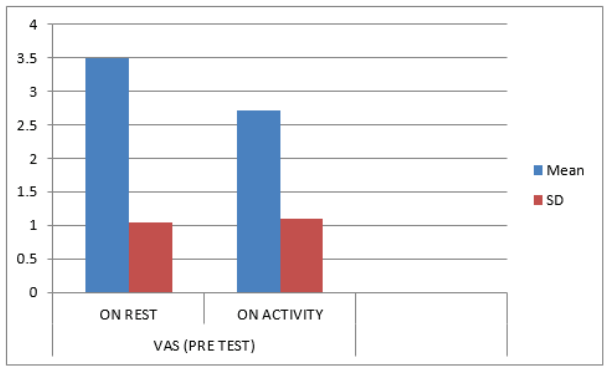
Material and Methodology

This was a study to find the effect of postural ergonomics and static gluteus exercise along with pelvic bridging exercises on quality of life in individuals with mechanical low back pain. The study was carried out in and around karad area. The subjects were selected according to inclusion and exclusion criteria. Total 26 subjects were taken according to inclusion criteria. The inclusion criteria were subjects with age group between 40 to 60 years and subjects having mechanical low back pain. The exclusion criteria were subjects who had gone through Spinal operation, Patients with bone Fracture, Patient who had bone malignancies and spinal deformity. Demographic data of the subjects was taken. Prior consent and assent form was taken. Aim and procedure were explained to the subjects in their preferred language before data collection. The subjects undergone pelvic bridging along with static gluteus exercises and back isometric exercises for 6 weeks and postural ergonomics also tought. Pre and post assessment was done visual analogue scale (VAS). The experimental results were statistically analyzed.

Statistical Anlysis

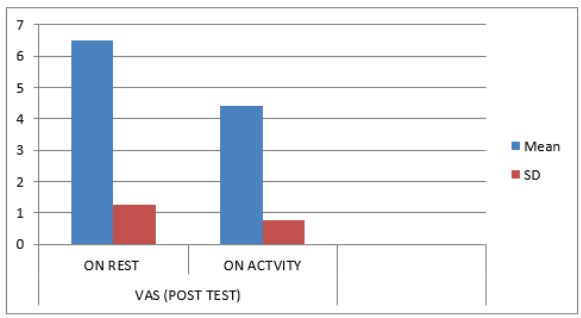
The unpaired t test was used for analysis of data. Statistical analysis of recorded data was done using the software SPSS version 20.

Findings



Graph no: 1 (pre test)

Interpretation: In the present study pre interventional mean and standard deviation of VAS scale on rest of group A is 3.5 ±1.047 and group B is 2.707±1.098 and p value is 0.0104, whereas t value is 2.663 with 50 degree of fredom. It concluded that interference was considered extremely significant.



Graph no : 2 (post test)

Interpretation: In the present study post interventional mean and standard deviation of VAS scale on activity of group A is 6.488±1.257 and group B 4.411±0.7612 is and p value is < 0.0001, whereas t value is 7.205 with 50 degree of fredom. It concluded that interference was considered extremely significant.

Discussion

This research was undertaken with the aim to study the effect of postural ergonomics and ststic gluteus exercise along with bridging individual with mechanical low back pain.The study was carried out and the result was drawn by postural ergonomic advice and static gluteus exercise along with bridging by using visual analogue scale. The study was carried out in karad area. Subjects with a sample of 50 were screened for inclusion and exclusion criteria. Subjects fulfilling inclusion criteria were recruited in the study with a sample of 26. Total 26 Prior consent and assent form was taken. Aim and procedure were explained to the subjects in their preferred language before data collection.Treatment started with warm up exercises .Pre and post assessment was done by using visual analogue scale to find whether the pain is reduced or not.mean. Included participants started Exercise protocol will start with stretches and warm up exercise.Static gluteus exercise with bridging – 10 times repetition and 3 set Back isometric exercise – 5 times repetition . Participants will also receive postural ergonomic advice.For pre treatment mean is 3.5 on rest and on activity is 2.707. Standard devation(SD) of pre treatment on rest is 1.047 and on activity is 1.098. P value of pre treatment is 0.0104.This is considered significant. Mean difference of pre treatment is -0.7923. t value of pre treatment is 2.663 with 50 degree of freedom.For post treatment mean is 6.488 on rest and on activity is 4.411. Standard deviation of post treatment on rest is 1.257 and on activity is 7612. The result shows p value of is <0.0001. It considered extremely significant .Mean difference post treatment is – 2.077. t value of post treatment is 7.205 with 50 degree of freedom.Included participants started Exercise protocol will start with stretches and warm up exercise.Static gluteus exercise with bridging – 10 times repetition and 3 set Back isometric exercise – 5 times repetition . Participants will also receive postural ergonomic advice.

Conclusion

On the basis of the result of the study, it can be concluded that postural ergonomics static gluteus exercises with pelvic bridging helps in reducing mechanical low back pain.

Conflicts of Interest: There is no conflict of interest in this study.

Source of Funding: The study was funded by Krishna institute of medical sciences deemed to be university, karad.

Ethical Clearance: This study is undergone ethical clearance through the university level ethical committee. Protocol number is 0104/2019-21.

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