Time Bound Acute Lumbar Disc Lesion - Physiotherapy, How Much Can be Effective?

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Abstract: Long hours of sitting and standing with high levels of professional demands resulting in high stress and musculoskeletal disorders at productive age from 30-50 are globally recorded. Early rehabilitation with non pharmacological intervention using evaluation based, structured exercises can be with in a time frame. Also further follow-ups with physiotherapy to avoid recurrence. This research on acute lumbar disc lesion was conducted in Chennai from 06.09.2019 to 30.09.2019. Proper physiotherapy techniques, clinical prognosis on a time frame for lumbar disc lesions were presented (P<.01) and discussed with evidence in this original research. Aims & Objective of this research was to analyse with evidence how time framed exercises can be effective in lowback rehabilitation in acute lumbar disc lesion subject.

Keywords: LDH - Lumbar Herniation, LBA – Lowback Ache, Mckenzies Exercises Lumbar Stabilization

1. Introduction

1) Lumbar disc herniation is the most common spinal degenerative disorders causing LBA (Yang et al 2015) among middle aged adults (Schoenfeld et al 2010) and occurs at the L4-L5 and L5-S1 spinal levels (Jordon et al 2009) with cardinal symptoms including LBP, radicular leg pain, muscle weakness and incontinence (Rajagopal et al 2014) bed rest, physical therapy, manipulation, NSAID are the most used non invasive treatment active exercise therapy is usually preferred to passive modalities (Franco et al 2015)

2) IVD provide a measure of shock absorbing protection to the spinal column and appropriate stability for the spine during load bearing activities. Cadaveric studies evidence suggest the disc degeneration relationship with instability is growing (Zhao et al 2007)

3) Mechanism of healing of a herniated IVD and the influence of exercise, where homeostasis of both bony and soft tissues is maintained through the appropriate balance activity and rest. Reversing disc degeneration and effecting healing involves the inner annulus and NP apperats to be an extremely slow process (Lachlan et al 2011). With NP, a vascular structure, homeostasis is largely managed by diffusion and bulk fluid flow, the extent of flow a cross NP is influenced by patients physical activity level. Guehiring et al 2009 have demonstrated that distraction of the disc promotes its rehydration, stimulates extra cellular matrix gene expression and increases the number of protein expressing cells in rabbits.

4) Conservative non surgical management of a herniated lumbar intervertebral disc is a complex task, with exercise rehabilitation to pre injury level (Vangel Der et al 2013). As few patient centric, shorter time bound researches were less available for acute lumbar disc lesion, this original research strives to analyse the effectiveness of stabilization exercises on acute lumbar disc lesion.

2. Aims & Objectives

Background in Information
Male aged 44 years mesomorph, non vegetarian, with sedentary, long hours of sitting, from nature of profession non DM/ HT gives recurrent episodes of lowback ache, since two years this physical condition as on 04.09.2019

C/o
Acute LBA with difficulty in walking and daily routines

O/e
- SLR 40° - 60° procedures disc symptoms
- Bilateral hamstring tightness – Positive
- Obliterated lumbar lordosis
- Abdominal muscles – III / V
- Hip motor power abdomen – 3/5, extremities – 3/5
- Fibrosis noted generally
- Cervical lordosis with no radicular symptoms
- Waist circumference – 108 Cm
- An increased urinary incontinence, NMRI revealed L4, L5 disc lesion as on 03.09.2019

Methodology & Clinical Prognosis from 06.09.2019 to 30.09.2019

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<tr>
<th>Session</th>
<th>Techniques &amp; Procedure</th>
<th>Clinical Prognosis</th>
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| 1st Day | 1) Isometric abdominal contractions  
2) unilateral, then bilateral lumbar stretch  
3) Prone position, MC kenzies exercises, hot pac | Pain as on day one VAS -8/10 |
|         |                         | After 6th session VAS 2/10 |
|         |                         | Functional activities such as professional work, travelling |
|         |                         | social activities were painful and restricted. Has low |
|         |                         | confidence with LBA prior to starting this therapy sessions |
| 2nd Day | 4) Hamstrings stretching in side lying  
5) Core strengthening with physioball mainly pelvic stabilization | Gait: Ambulant with antalgic gait with severe lowback ache |

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3. Results

Table of results on Oswestry score

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Critical Research Questions Arising Were:
1) How shorter low back ache can be rehabilitated
2) Does follow-up helps in disc lesions
3) Factors, variables influencing prognosis in acute disc lesions

1) Jeong etal 2017 have among 30 patients with LDH (Lumbar Disc Herniation) in 12 sessions of lumbar stabilization exercises to improve function KODI. This research has shown in 6 sessions an adequate prognosis could be due to added Mckenzie concept and closed kinematic exercises along with lumbar stabilization.

2) Lumbar stabilization exercise is used to retrain Proprioceptive senses of the tissues surrounding the joint (Kim etal 2011). Han etal 2010 have reported that LS exercise which eases the mental effort, decreases spinal movements, improve pelvic tilt, had positive effects in body balance. Pourahmadi etal 2016 in a meta analysis where motor control exercises among lumbar disc herniation were evidenced to be effective on pain and functional disability. This research subject was treated with lumbar stabilization and has shown good functional recovery as shown in table 1 and table2

3) Cho etal 2011 have analyzed the correlation between lumbar disc herniation and inter costal line height in 445 back pain subjects with ilio lumbar LG instability leading to disc herniation (Goudzuard etal 2003). Vangelder etal 2013 have recorded that individual assessment and prescription to be made among herniated lumbar disc lesions, which reviews and addresses movement in all planes of motion. Also segmental instability is related to degenerative disc degeneration. This hypothesis can support the rehabilitation protocol based on stabilization protocol. However adherence with further follow-up, home programme could influence on benefits clinically recorded here.

4. Conclusion

Proper evaluation, advocation of time bound exercises along with due clinical reevaluation can be more effective along with proper follow-up early roll back to work and avoidance of recurrent LBA, can be eliminated.

References


