



LUMBAR DISC HERNIATION; DEMOGRAPHIC CHARACTERISTIC AND ETIOLOGY OF PATIENTS PRESENTED IN A TEACHING INSTITUTE

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ABSTRACT... Objectives: To determine Demographic characteristic and etiology of patients presenting with lumbar disc herniation. **Study Design:** Descriptive cross sectional study. **Setting:** Department of Neurosurgery, Naseer Teaching Hospital Peshawar. **Period:** September 2013 to February 2015. **Material and Methods:** We evaluated two hundred and eleven patients. All patients with either gender and age who presented through outpatient department, with clinically and radiological diagnosed lumbar disc prolapsed were included in the study. Patient profile like name, age, sex, occupation like driver, barber, carpenter, labourer, office worker and those with systemic diseases were documented on predesigned Proforma. MRI Lumbo-sacral spine done in all patients. Data was analyzed using SPSS version 20.02015. **Results:** 211 patients were recruited in this study. Out of which 145(69%) were male and 66(31%) were female. In our study 97(46%) were in age ranges of 31-40 years, followed by 63(30%) in 21-30years, followed by 29(14%) in age group. Long route drivers on bad roads had common disc herniation 66(31%) followed by labour (moderate to heavy weight lifting) 42(20%), carpenters 27(13%), barbers 23(11%) and office workers 19(9%). **Conclusion:** Middle age working male was more prone to develop Lumbar disc herniation, more commonly at L4-L5 and L5-S1 level. Long distance driver, labourer, carpenter, barber and office worker have strong association with lumbar disc herniation.

Key words: Lumbar Disc Herniation, Demography, Occupation.

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INTRODUCTION

The most common cause of lower back pain and leg pain in young adult is a lumbar ruptured disc or herniated disc.^{1,2,3,4} and account for 5% of all patients presenting with low back pain.⁵ It is a common pathological condition in which there is out pouching of nucleus pulposus through tear in outer fibrous ring (annulus fibrosus) in to extradural space causing compression on the nerve root.⁶

The exact etiology of LDH is not known however the identifiable risk factors are young age, male gender, family history, physically demanding jobs, trauma or patient with co-morbidities like Diabetes Mellitus and smoking.⁷ In various studies the most common location of LDH is at L4-L5 (40%), followed by L5-S1 (36.8%), whereas L2-L3, and L1-L2 accounts for(13.2%)each.⁸

Patient with LDH usually present with low back pain radiating to posterior aspect of thigh and leg also associated with numbness and paraesthesia in respective dermatome and weakness, depressed reflexes in corresponding myotome.⁹ Straight leg raising test (SLR-t) is usually used for diagnosis this condition.¹⁰ Gold standard investigation is MRI due to its visualization of soft tissue better than CT Scan.¹¹

The aim of this study is to collect a data regarding underlying cause of LDH in young adult. This will help Neurophysician and Neurosurgeon to order appropriate investigation which ultimately leads to early intervention and achieving favorable outcome.

MATERIAL AND METHODS

This descriptive cross-section study was conducted in the Department of Neurosurgery

Naseer Teaching Hospital, Peshawar from September 2013 to February 2015.

Two hundred and eleven patients were recruited in study. All patients of either gender and age presenting through outpatient department or referred from other hospital clinically and radiologically diagnosed lumbar disc prolapsed were included in the study. While patients with recurrent disc prolapse, discitis, lumbar stenosis, spinal tuberculosis, spinal metastatic disease, previous history of spine surgery, were excluded from our study.

Patient profile like name, age, sex, occupation like driver, barber, carpenter, labourer, office worker and those with systemic diseases were documented. MRI Lumbosacral spine done in all patients. Finding such as focal Protrusion of disc material compressing the nerve root, and iso to hyperintense disc material on T1 Weighted images was considered as Lumbar disc herniation. Level of disc herniation also documented Data analyze using SPSS version 20.0 and presented in form of tables.

RESULT

A total two hundred and eleven 211 patients were recruited in this study. Out of which 145(69%) were male and 66(31%) were female. In our study 97(46%) were in age ranges from 31-40 years followed by 63(30%) in 21-30years, followed by 29(14%) more than 40 years and 22(10%) had age < 20 years. The mean age was 52.7 years with standard deviation ± 2.54 .

In our study 146(69%) patients belong to rural areas while 65(31%) were urban citizens. Majority of patients 92(43.6%) had duration of illness between 1-3 months followed by 70(33.1%) more than one year and 49(23.2%) patients had duration of illness 4-6months.

In our study long route driver on bad roads had common disc herniation 66(31%) followed by labour (moderate to heavy weight lifting) 42(20%), carpenters 27(13%), barbers 23(11%) and office worker 19(9%). 30(14%) had systemic disease and 4(2%) had a positive family history indicating

genetic predisposition.

L4-L5 disc herniation was the most common 87(41.2%) of patients followed by 66(31.2%) L5-S1. Disc herniation at multiple level was found in 25(11.8%). L3-L4 level disc herniation was in 18(8.5%) and L1-L2 was found in 15(7.1%) cases.

Gender	Frequency	Percentage
Male	145	69%
Female	66	31%
AGE		
<20yrs	22	10%
21-30 yrs	63	30%
31-40 yrs	97	46%
>40yrs	29	14%
Residence		
Urban	65	31%
Rural	146	69%

Table-I. Demographic characteristic (n=211)

Aetiological Factor	Frequency	Percentage
Occupational	177	84%
Drivers	66	31%
Laborers	42	20%
Carpenters	27	13%
Barbers	23	11%
Office Worker	19	09%
Systemic Disorder	30	14%
Genetics	4	2%
Total	211	100%

Table-II. Aetiology (n=211)

DISCUSSION

Lumbar disc herniation is one of the most common cause of spinal degenerative disorder leading to lower back pain associated with radiculopathy.^{12,13} The exact cause is not fully known however, factors like mechanical loading, occupation, autoimmune, genetic have been associated with increased risk of LDH. The incidence is high in young individual (21-40) yrs because of heavy work and minor trauma.¹⁴

Magnetic resonance imaging (MRI) is used to diagnose lumbar disc herniation as it depicts soft tissue better than CT-Scan. LDH occur at any level of lumbar spine but the most common location at

L4-L5 and L5-S1 level.^{8,11}

We studied 211 patients among them 145(69%) were male and 66(31%) were female. similar results were found in study done by Khan et al. showing 51.9% male and 48.1% female.¹⁵ Another study done by Ali et al. concluded 57.4% male and 42.6% female.¹⁶ LDH is most common in male in our population because of heavy weight lifting, long distance driving, trauma and RTA.

In our study the most common age group was 31-40 yrs (46%) followed by 21-30yrs (30%). close results were obtained by Ansari et al. who studied 301 patients and found most common age group was 30-40 yrs (36.2%) with mean age being 42 years.¹⁷ Middle age patient was mostly affected as more stressful work, and physically demanding job in this age group resulting in continuous trival trauma to spine.

In our study L4-L5 disc herniation was the most common 87(41.2%) of patients followed by 66(31.2%) L5-S1. Multiple level disc herniation was found in 25(11.8%). L3-L4 level disc herniation was in 18(8.5%) and L1-L2 was found in 15(7.1%). Almost same results obtained by different national and multinational studies.^{16,18,19}

The etiological factor for LDH in our study were occupational, systemic disorder and genetics. Among these occupation like long distance driver (31%) followed by labourer (20%), carpenters (13%), barbers (11%) and office worker (09%). Systemic disorder and genetic constitute about (16%). Almost similar results were obtained by Wardak et al. who reported mechanical load (81.3%) followed by systemic disorders (16%) and genetics (2%). Another study done by Louma et al in Finland stated that majority of causative factor was long route driver (34%) followed by carpenters (29%) and office worker (29%).²⁰

There are several limitations in our study firstly patients were not followed to know whether they need conservative or surgical treatment for relief of pain and whether they improved or not with that treatment modality, secondly only Naseer teaching hospital was taken as the study place,

inclusion of other hospitals from the same locality could have given better idea about the prevalence of that condition in that place.

CONCLUSION

Middle age working male were more prone to develop Lumbar disc herniation which occur more commonly at L4-L5 and L5-S1 Level. Long distance driver, labourer, carpenter, barber and office worker have strong association with lumbar disc herniation. Complete history, detailed examination and proper investigation will help in early diagnosis and prompt treatment of disease.

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An obstacle is often a stepping stone.

– Prescott –

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Sohail Amir	Data analysis & collection + interpretation critical revision.	
2	Maimoona Qadir	Statistical expertise drafting of article.	