



ISSN 2456-3110

Vol 7 · Issue 6

July 2022

Journal of  
**Ayurveda and Integrated  
Medical Sciences**

*www.jaims.in*

**JAIMS**

An International Journal for Researches in Ayurveda and Allied Sciences



**Maharshi Charaka**  
Ayurveda

**Indexed**

# Understanding the etiopathogenesis of *Katigraha* - An Observational Study

Kavya Krishnan C<sup>1</sup>, Geetha B Markande<sup>2</sup>, Prashanth Jain<sup>3</sup>

<sup>1</sup>Final Year Post Graduate Scholar, Dept. of PG Studies in Roga Nidana Evam Vikriti Vigyan, Alva's Ayurveda Medical College, Moodbidri, Karnataka, India.

<sup>2</sup>Professor, Dept. of PG Studies in Roga Nidana Evam Vikriti Vigyan, Alva's Ayurveda Medical College, Moodbidri, Karnataka, India.

<sup>3</sup>Professor & HOD, Dept. of PG Studies in Roga Nidana Evam Vikriti Vigyan, Alva's Ayurveda Medical College, Moodbidri, Karnataka, India.

## ABSTRACT

*Katigraha* is one among the *Vataja Nanatmaja Vyadhi* which simulates with the signs and symptoms of Low Back pain. It continues to be the most common health concern for which patients seek primary care therapy. Our *Acharyas* explains *Katigraha* as a *Lakshana* in various *Vatavyadhi* and in other diseases. Here, *Katigraha* indicates a disease condition of the back associated with pain and stiff movements. As *Gada Nigraha* clearly states pain is produced due to stiffness produced by *Saama* or *Niraama Vayu* movement in to *Kati* hence this suggests of presence of *Dhatu Kshayatmaka* and *Marga Avarodhaka* type of *Samprapti*. Hence in this context *Katigraha* denotes a group of symptoms characterized by the restriction of movements of *Kati* region in which pain would be a main feature as *Graha* alternatively means pain as restriction is said to produce pain in the particular region. The backache or lumbago is one of conditions which results from violation of bio mechanics of spine as it results when the physical and mental strain and faulty postures alter anthropometrical precision. The 70-80% of world population suffers from backache at some point of their life. As the back pain is very subjective in nature, there are very few objectives finding in history, clinical examination and even on extensive radiological or laboratory investigation.

**Key words:** *Katigraha*, Low back pain, *Ahara*, *Vihara*

## INTRODUCTION

Ayurveda is an ancient health science that focuses on overall wellness rather than curing of disease. People are fed up with the side effects and aftereffects of today's most potent and fast acting medications, which reduce human immunity while suppressing disease. People are now turning away from synthetics and returning to nature. As a result, Ayurveda will become

the world's future medicinal science, not only in India, but globally.

In our classics, there are 80 types of *Vataja Nanatmaja Vyadhis* and *Katigraha* is one among them.<sup>[1-3]</sup> The word *Katigraha* having pain and restricted movements or stiffness.<sup>[4]</sup> The vitiated *Vata* gets lodged in *Katipradesha* and produces this condition. Hence, etiological factors of *Vata Vyadhi* enlisted in literature, *Ativyayama*, *Ativicheshtita*, *Dukkha Shayyasana*, *Ati Adhwa*, *Sheeghrayana*,<sup>[5]</sup> etc. may have a definite relation with *Katigraha*.

The lumbar region is a common site of a number of developmental deformities, causing symptoms ranging from simple backache to serious paralytic manifestations. The backache or lumbago is one of the conditions which results from violation of bio mechanics of spine as it results when the physical and mental strain and faulty postures alter anthropometrical precision. Low back pain is the leading cause of disability. Therefore, this condition remains a diagnostic and therapeutic challenge for the

### Address for correspondence:

Dr. Kavya Krishnan C

Final Year Post Graduate Scholar, Dept. of PG Studies in Roga Nidana Evam Vikriti Vigyan, Alva's Ayurveda Medical College, Moodbidri, Karnataka, India.

E-mail: kavyakrishnan986@gmail.com

Submission Date: 08/05/2022 Accepted Date: 17/06/2022

### Access this article online

Quick Response Code



Website: [www.jaims.in](http://www.jaims.in)

DOI: 10.21760/jaims.7.6.12

clinician as well as rheumatologist<sup>6</sup>. Low back pain affects 80% of individuals and degenerative changes of the spine is the most common cause. The aids which act as a causative factor for the low back pain in the present era are divergents of the classical explanations of *Katigraha*.

Majority of patients with acute low back pain have a good prognosis and most episodes resolving spontaneously in a few weeks and do not require any radiological or laboratory tests. However, while dealing with acute low back pain may require to diagnose some of the serious illnesses such as cauda equina syndrome, epidural haemorrhage, epidural abscess, etc. The psychological factors (Anxiety, stress, depression, etc.) and occupational factors (manual material handling, bending and twisting, etc.) may also play an important role in the occurrence of chronic Low back pain.<sup>[7]</sup>

Musculoskeletal disorders are included one among the occupational health problems in both developed and developing countries. Most of the musculoskeletal disease causes local ache or pain and restriction of motion. The low back pain usually arises from one of the pain sensitive spinal structures but in majority of cases this pain is isolated without any localisation and without any neurologic deficits.

The investigations are important to realise that the evident radiologic abnormalities may not be always responsible for back pain as it may be age related or incidental. Among patients with chronic LBP, imaging studies can be helpful to surgical or medical treatment. Radiology plays a huge role in disease prognosis by giving physicians more options, tools and techniques for the proper diagnosis and treatment. Plain radiography may detect vertebral compression fracture, degenerative changes or structural abnormalities. The number and severity of osteophytes and back pain exist, the prevalence of degenerative changes among asymptomatic patients underlies the difficulty assigning clinical relevance to observed radiographic changes in patients with LBP.

## OBJECTIVES

1. To study the etiological factors and pathogenesis of *Katigraha* according to classics.

2. In depth study of available classical etiological factors in causation of Low back pain in the current era.
3. To study the variants of the causative factors in relation to Low back pain under the etiological aspects of *Katigraha*.

## MATERIALS AND METHODS

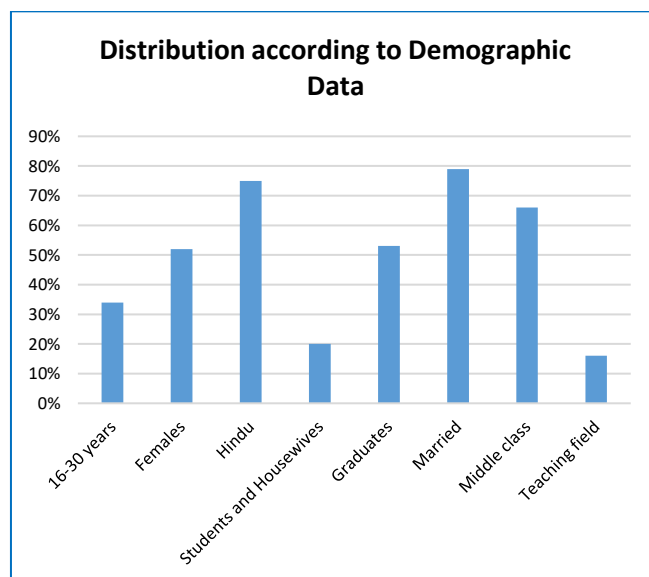
A minimum of 100 patients suffering from *Katigraha* between age group of 16-70 years with the help of case proforma with the details of *Lakshanas* and *Nidanas* as mentioned in our classics and allied science were selected.

Patients were analyzed and selected accordingly who fulfils the diagnostic and inclusion criteria. Values obtained were assessed on the basis of percentage specially *Aharaja*, *Vihara*, *Mansika* and *Kalaja Nidana*.

## OBSERVATIONS AND RESULTS

### On demographic data

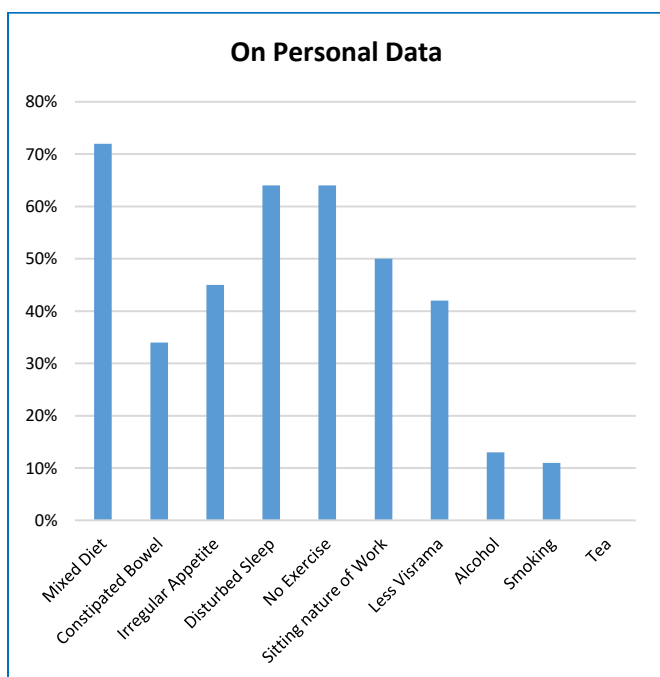
Majority of patients, 34% belongs to the age group of 16-30 years, 52% were females, 75% were Hindu, 20% were students and housewives, 53% were graduates, 79% were married, 66% were middle class, 16% belongs to teaching field.



### On Personal Data

Among 100 patients taken for the study, 72% were habituated to Mixed diet, 34% patients were having

constipated bowel, 45% were having Irregular appetite, 64% patients were having a disturbed sleep, 64% patients were not habituated to doing any exercise, 50% were having sitting nature of work, 42% were getting less *Visrama*, 13% addicted to Alcohol, 11% addicted to Smoking and 10% addicted to Tea.



#### On Data related to Disease

#### On Chief complaints

Among 100 patients selected for the study, 100% patients were having pain in Low back, 98% patients were having Stiffness in Low back, 59% patients were having Aching nature of pain, 70% patients were having pain is Gradual in onset, 57% patients were having Progressive nature of pain, 55% patients were having Sub acute in chronicity, 86% were getting pain in the evening and 92% patients were getting more pain in Winter season.

#### On Treatment history

50% patients underwent for Allopathic treatment.

#### On Dashavidha Pareeksha

Majority of the patients in the study belonged to *Vata Kapha Prakriti*, 85% were having *Madhyama Sara*, 77% were having *Madhyama Samhanana*, 95% were having *Madhyama Satwa*, 92% were having *Madhyama Satmya*, 83% patients were having *Madhyama*

*Pramana*, 61% patients were having *Madhyama Abhyavaharanashakti*, 88% patients were having *Madhyama Jaranashakti*, 73% patients were having *Madhyama* 68% were coming under *Madhyama Vaya Vyayamashakti* and 68% patients were having *Vishamagni*.

#### On Examination and Investigations

Among 100 patients, 64% patients were having Tenderness in L3-L4 region, 32% patients were having tenderness in L4-L5 region, 92% patients were having restricted movement in Forward bending, 78% were having restriction in Rotation, 70% were having restriction in Lateral bending and 57% were having restriction in Backward bending, 22% patients were having Scoliotic changes, 71% patients were presenting with a positive Schober's test and 57% patients were presenting with Degenerative changes in Lumbar spine.

#### On Aharaaja Nidana

Among 100 patients selected for study, 56% consumes *Katurasa* daily, 57% occasionally consumes *Tiktarasa*, 34% consumes *Rukshanna* daily, 64% patients consumes *Shitanna* occasionally, 41% patients consumes *Alpanna* occasionally, 68% patients follows *Laghuannasevana* occasionally, 68% patients consumes *Kharahara* occasionally, 69% patients follows *Vishamasana* occasionally, 67% patients consume *Shushkamamsa* occasionally, 47% consumes *Nivara* occasionally, 81% consumes *Mudga* occasionally and 80% consumes *Masura* occasionally.

#### On Viharaaja Nidana

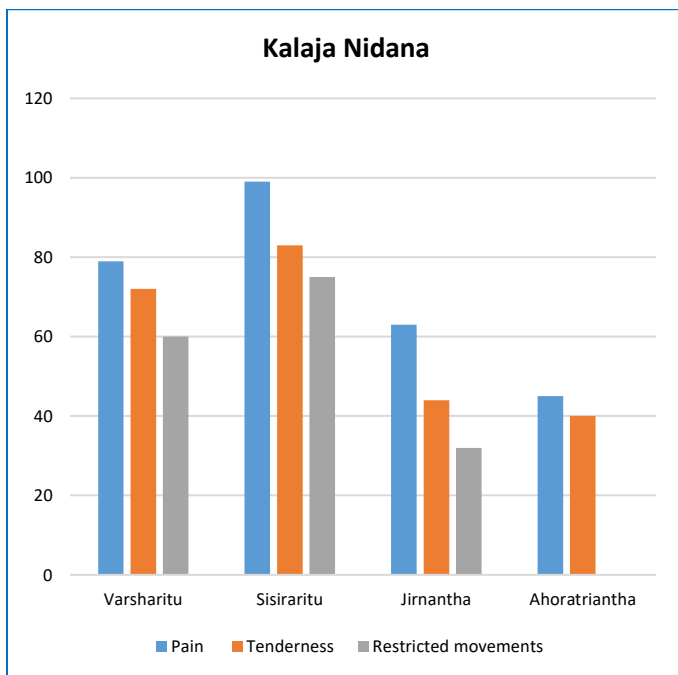
Data obtained pertaining to *Ativyayama*, 39% patients were following *Ativyayama* occasionally, 61% were doing *Langhana* occasionally, 60% were doing *Atyadhwa* daily, 45% were having the history of *Abhigata*, 47% have the habit of *Bharavahana* occasionally, 52% patients were having the habit of *Dukhashayyasana* daily, 75% were having the habit of *Dukhasana* daily, 35% have the habit of *Shighrayana* daily, 28% have the habit of *Atiadhayana* daily, 35% patients were doing *Ratrijagarana* daily, 65% were doing *Vegadharana* occasionally and 51% were doing *Divaswapna* occasionally.

### On Manasika Nidana

Among 100 patients, 60% patients were doing *Atichintana* occasionally, 36% have worries occasionally, 41% were getting short temper daily and 46% were getting fear occasionally.

### On Kalaja Nidana

Among 100 patients, most of the patients getting pain, tenderness and stiffness in *Varsharitu*, *Sisiraritu*, *Jirnantha* and *Ahoratriantha*.



## DISCUSSION

In the present era, human society is dominated by mechanical life, frequent changes in lifestyle, environmental factors and climate. The major somatic disorders include a regular work schedule in improper posture, continuous and over exertion, a lengthy travelling in various vehicles in faster and lack of exercises can lead to undue more pressure on spinal cord to create Low back pain. In the present era, unwholesome food, a sedentary lifestyle, a lack of relaxation and excessive activity create a variety of problems, among them most of the diseases belongs to *Vatavyadhi*. *Katigraha* is one among the *Vata Vyadhi* and it is produced by the *Prakupita Vata* which is moved out from the *Pakwashaya* and get localized in the *Katipradesha*, thereby vitiates *Snayu* and *Kandara* in the *Katipradesha*. Due to various *Aharaja* and

*Viharaja Nidanas*, *Samprapti* of *Katigraha* occurs in three ways. They are *Dhatukshayajanya*, *Margavarajanya* and *Abhighatajanya Katigraha*. In this study, most of the patients are having *Dhatukshayajanya Katigraha* which happened after prolonged period.

### Discussions on Observations

#### Discussion on demographic data

Major part of the population involved in the study belonged to 16-30 years followed by 31-45 years of age group (23%). this may be due to the reason that most of the patients were youngsters and middle aged and others belonged to the working class. The degenerative changes develop over time; increased prevalence of degenerative spine pathology with age. Majority of patients were Females. this may be due to the middle aged and older women are more susceptible to osteoporosis than men and younger women because of a perimenopausal increase in the rate of bone resorption. The sex difference could be related to gonadal steroid hormones such as estradiol and testosterone modulate sensitivity to pain and analgesia. Other variables such as lifestyle habits of females, diet, parity and use of contraceptive may be relevant. Data obtained pertaining to Religion of the patients shows highest incidence of Low back pain in Hindu Community and the selected area has a projection of Hindu community. Most of the patients were married in the obtained data. The marriage increases the responsibilities, increased household works, taking care of children and increased emotional stress causes the higher risk of Low back pain. In the present study, 82% patients were having normal delivery and 11% were having caesarean section. In women, the postpartum back pain may occur and it lasts up to 6 months or might continue up to a decade. This type of back pain mostly occurs by performing activities such as bodily movements, such as walking, lifting, bending or carrying new born babies continuously. Pregnancy related changes happen in the musculoskeletal system that persist after delivery. During childbirth, the women may undergo bodily trauma that directly involves the low back, pelvic bone,

joints and soft tissues causing pain and discomfort in the low back area. The type of delivery such as vaginal, instrumental or caesarean section may also have a role in the pathogenesis of Low back pain. 53% patients were graduates and most of the patients belongs to Middle class family. Well educated people more likely to be affected by disabling back pain due to their nature of work. The graduation and LBA may not have direct relation. But, well graduation make the people to do a good job, where the physical and mental stress will be more. In present study, majority of patients were working in teaching field and software engineers. In which the mental and physical stress were there and the graduated people are more aware about their health and there is a faster approach to the doctors which is not observed in lower educated people. This may be due to their work related or life style modifications. The common causes are irregular food habits, lack of exercise, etc. Most of the study areas were Rural locality, so data showed highest incidence in Rural habitat. Most of the patients were students and housewives followed by Teachers, Business, Labourers, Office work and Drivers. The Housewives who work a lot at home are more likely to suffer from mechanical strain. Both recent and yearly prevalence of Low back pain is more in rural Housewives. The vulnerability of students due to stress and numerous hours of studying and training makes them at risk of Low back pain. In the teaching field the risk of low back pain is due to continuous standing and walking during sessions, bending over students at their desks, sitting in improper posture and physical inactivity. In Business and Office workers the prevalence of Low back pain may be due to defective sitting postures and travelling may be the reason. The works related Low back pain is associated with exposure to ergonomic stressors at work, environmental(physical), psychosocial and personal risk factors. Among these lifting and carrying heavy objects, awkward posture, psychosocial job demands and job dissatisfaction, repetitive movement, static workload, bed making were reported as a major risk factor for Low back pain. In drivers, due to overuse of ligaments and muscles, the soft tissues become strained and inflamed, potentially leading to muscle spasms and pain.

### Discussion on Personal History

Most of the patients were following a mixed diet especially red meat, burger and processed meats are associated with high inflammation. The red meat may be a great source of protein, because it increases the pain in low back. Red meat contains a substance in it called as neu5gc. This substance promotes inflammation. Dominant part of the patients having Constipated bowel habit. Often, constipation swells the intestines with the faecal matter and leads to discomfort in both the abdomen and back. This type of back pain is typically having the nature of dull and aching. The constipated bowel may lead to *Vilomagati* of *Apana Vayu* and it causes pain in the Lower back. Most of the patients were having aa Irregular appetite. Irregular appetite is linked to the gastrointestinal symptoms like gas, bloating, etc. which are having a relation with the back pain. The irregular nature of appetite is mainly due to the *Vata Dosha Prakopa*. This will cause *Dushti* of *Kapha* and thereby *Sanga* or *Vilomagati* of *Vayu*. So, it will get aggravated in the later stages of *Sroto Avarodha*. Due to pain in the lower back, majority of the patients were having a disturbed sleep. The pain caused due to *Dukkhashayyasana* i.e., improper sleeping posture and *Ratrijagarana* or delayed sleeping habit are the observed causative factors for the occurrence of disease in this study. Proper rest and sound sleep needed for maintaining nourishment especially for lower lumbar spine, because these spines are always under pressure while sitting, standing, heavy lifting, etc. The stiffening of spine and muscles in the low back occurs due to lack of exercise by majority of patients. Most of the patients engaged their work in sitting position. Sitting down for long periods or in improper manner causes the discs in the vertebrae to lose their cushioning, which cause back pain. Long sitting cause extensive pressure on the back, so the nerves get pinched due to continuous rubbing of intervertebral discs. It can also lead to muscular atrophy due to weight gain. Some of the patients were not getting proper *Visrama* after their heavy workload. Proper *Visrama* helps to get rid of low back pain. These patients were pre occupied with their work and their personal lives. As a result, no one was

getting time to take proper rest even though they are having back pain. Excessive alcohol use has been found to worsen back pain and contribute to additional complications. Alcohol decreases circulation which may lead to pain and inflammation. Higher rate of alcohol abuse seen in people living with pain to get relax from pain. In several studies, smoking has been associated with the occurrence of spinal pain, mostly low back pain. Exposure to second hand smoke during childhood may increase the risk of developing back and neck problems in later life. The tea act as diuretics and there will be excess water elimination, so there is a reduced transportation of nutrients to the nucleus pulposus of the vertebrae. This may the reason to increase pain in people who are addicted to tea.

#### Discussion on data related to disease

In *Katigraha*, pain is the cardinal feature. So, in the present study, all patients were having pain in Low back and majority of patients were having Stiffness (*Stambha*) in the Low back as it is the cardinal feature of *Katigraha* due to movement of *Saama* and *Niraama* Vayu in the *Kati*. The *Sthabdhtata* is due to *Ruksha*, *Khara* and *Shita Guna* of *Vata* in case of *Niramaja Katishoola*. In *Samaja Katishoola*, vitiation of *Vyana Vayu* may occur by the aggravation of *Apana* and *Ama* due to *Nidanasevana*. Thus, the *Graha* occur due to reduction of *Chala* and *Ruksha Guna* of *Vyana Vayu* due to *Anyonya Avarana* either by *Apana* or due to *Ama*. When the vitiated *Vata* takes *Ashraya* in the *Katipradesha*, it leads to *Shoshana* of *Shleshaka Kapha* present in the *Sandhis*. So, there will be a hampered functioning of joints and thus, leading to prevention in the movements at the *Katipradesha*. The movements in the Lumbosacral region get restricted either completely or partially. Majority of patients were having Aching nature of pain is present. Most of the patients had gradual in onset. The degenerative changes associated with disturbance of water content and actual sequestration starts in the nucleus pulposus, spreads to the posterior annulus and ends with annulus rupture. The changes in the structure of spinal vertebrae will happen gradually except in case of *Abhigataja* and sudden heavy lifting. The progressive nature of pain is mainly due to the unawareness about

their illness. Most patients unaware that, their illness is progressing until they begin treatment, at which point avoiding causative factors, a modified diet and an altered lifestyle play a significant impact. Most of the patients were having *Katigraha* which was subacute in nature. The main reasons for chronicity lack of awareness towards gravity and unwillingness to avoid causative factors. Majority of patients were more back pain in the evening time and in Winter season. This may be due to the heavy workload in the daytime. Due to the cold nature, the *Shitatwa* will increase *Vata Prakopa* in our body and produces Various *Vataja* disorders.

#### Discussion on *Dashavidha Pareeksha*

*Dwandwaja prakriti* is more prevalent in society, so majority of patients presents with *Vata Kapha Prakriti*. As the disease is mainly caused due to the involvement of *Vata Dosha*, there will be more chances of getting *Katigraha*. As the disease itself is produced due to *Vata Vriddhi* and *Kapha Avarana*, *Vata* and *Kapha* related *Prakriti* are more prone to get early degenerative changes. Dominant was showed with *Madhyama Sara*, which has apparently no effect on this study. *Madhyama Samhanana* predominancy may due to ageing, the compactness of bone decreases mainly in case of osteoporosis by the reduced bone mineral density. Also, due to *Dhatukshaya*, *Vataprakopa* happens. Dominant was showed with *Madhyama Satwa*. The psychological disturbances lead to contraction of skeletal muscles due to release of certain neurotransmitters like adrenalin. Due to recurrent emotional disturbances, the muscles and soft tissues present in the back will get continuous contraction, as these muscles which helps for the maintenance of body postures. Then there will be a decreased nutrition to these structures and thus leading to early degeneration. Most of the patients were having *Madhyama Satmya* and which has no effect on this study. Dominant were showed with *Madhyama pramana*. Most of the women have increased height as compared to the normal. Some of the recent studies shows that, there is a relation between height and back pain in females. The BMI and height are linked to the pathogenesis of low back pain.

The taller people are more likely to suffer with Low back ache. This is because taller people have a greater tendency to slouch. Unfortunately, when they slouch, the back ligaments are overstretched which leads aches and pains. Predominancy of *Madhyama Abhyavaharana Shakti* and *Madhyama Jarana Shakti*. Majority of patients consumes rich in protein and starches together results into absorption of one being delayed by the other. Similarly, eating sugars and acid fruits hinder the action of ptyalin and pepsin, reducing the secretion of saliva and delaying digestion. Intake of *Viruddha Ahara* like bakery items usually fermented foods, artificial flavourings, etc consumers are more in the present study and it creates Ama. Consuming aerated drinks or soft drinks are having carbon dioxide which creates a vacuum inside the body and it can be correlated with direct explanation for aggravation of *Vata* and a reduced appetite. Most of the patients were having *Madhyama Vyayamashakti*. Due to pain and stiffness, the patients are unable to do the normal movements of the low back, such as forward bending, backward bending, lateral flexion and rotation. Regular joint movements, such as aerobic or yogic asanas will promote blood supply to the disc, surrounding muscles and the vertebra itself. Most of the patients in the present study were belongs to *Madhyama Vaya*. This may be due to the working age is mainly in *Madhyama Vaya* people. Dominant patients showed *Vishamagni* due to the predominance of *Vata Prakriti*. If there is any impairment in the *Vata*, it will produce disturbances in the *Agni*. *Vishamagni* is influenced by *Vata Dosha*. The impaired *Vishamagni* causes *Vilomagati* of *Vayu*. This *Vayu* gets lodged in *Katipradesha* and lead to *Katigraha*.

#### Discussion on examinations

Most of the patients were having tenderness in their low back. Maximum patients were having tenderness in L3-L4 region (64%) and followed by tenderness in L2-L3 (47%) region. And in some patients, the tenderness present in two intervertebral discs. The aggravated *Vata Dosha* might have provoked, there is a disturbed function of *Katisandhi* at the onset and started process of *Asthikshaya*. This may be reason to cause tenderness in *Katipradesha*. Majority of patients were

having restricted movements during Forward bending, Backward bending, lateral bending and rotation. This may be due to, in chronic stages of *Katishoola*, aggravation of *Vatadosha* due to *Dhatukshaya* leads to improper joint nourishment to joints, compression of nerve roots and due to stretching of muscles. Some patients showed Scoliotic changes in their Spine. Typically, the pain that experience with adult onset, scoliosis is the result of pressure on spinal discs, facet joints and muscle pain. But scoliosis can cause pain for other reasons. The curvature of the spine can stretch or irritate nerves and also strain joints, causing them to become inflamed. In present study, only few patients got other deformities like Lordosis, Disc prolapse and Disc compression. In the present study, Schober's test is used as a diagnostic tool. Maximum number of patients were having moderate range of flexion. Schober's test is the simple and noninvasive screening method for lumbar mobility. It is classically used to determine, if there is a decrease in lumbar spine range of motion especially in flexion. It helps to understand the severity in the restriction of lumbar spine mobility. In chronic low back pain, due to stiffness there is a difficulty in bending. For example; those who are showing negligence of pain in the lower back or due to the increased use of analgesics while getting pain. Analgesics give immediate relief but, the condition get worsen in the lumbar spine due to the *Prakupita Vata* which is located in the low back. Majority of patients showed with degenerative changes, that is observed through the radiological examination. The prevalence of degeneration increases with age. It is an age-related wear and tear on spinal disc causes low back pain. Many studies have been undergone about disc degeneration, where ageing remains the identifying risk factor for this condition. Factors such as smoking, obesity, diabetes mellitus, hypertension and physical activity such as driving and lifting weight might enhance disc degeneration. Present study showing changes in the X-ray, formation of osteophytes, sclerotic changes and reduced disc space were more found in L2-L3, L3-L4 and L4-L5 segments. Along with Degenerative changes, patients showed with Osteophytic changes, Sclerotic changes and reduction in intervertebral disc space. Osteophytic changes



observed in patients having Lumbar spondylosis, Scoliosis, and compression. The osteophytes or bone spurs usually developing after a long period along with the process of disc degeneration. The disc or the cartilage in between the bones of spine breaks down and rub against other bones or tissues. It also put pressure on nearby nerves. Thereby produces more friction and inflammation. The inflammation can lead to pain and stiffness in the lumbar spine. Patients suffering from Severe degeneration and disc compression showed sclerotic changes. These sclerotic changes caused either by primary or secondary to arthritis, trauma or degenerative changes. The narrowing of intervertebral disc space due to severe disc degeneration, disc compression and due to disc prolapse.

#### Discussion on Aharaja Nidana

Speaking about the *Gunas* of *Ahara* that is commonly seen as a habit; Excessive consumption of chilly, pepper and spicy foods increases the *Katu rasa* and finally *Vataprakopa* due to *Ruksha* and *Laghu Guna*. Frequent consumption of spicy foods could trigger upper GIT and may end up in indigestion, thereby produce *Ama* and it can lead to *Katigraha*. Very spicy foods can cause heartburn, making pain worse. The heartburn is another digestive disorder, if it is not treated properly causes pain in chest, throat and can radiate to lower back. The consumption of coffee, cocoa, beer, bitter melon, broccoli, leafy spinach, etc increases *Tikta rasa* in the body. Excess bitter taste may produce toxicity leading to loss of appetite, lowers blood sugar, etc. This may be due to the *Ruksha*, *Laghu* and *Shita Guna* of *Tikta Rasa* will cause *Prakopa* of *Vata Dosh*. The continuous usage of *Tikta Rasa* causes *Sarva Dhatu Shoshana* and finally *Vata Dosh* *Prakopa*. More patients were habituated to consume *Yava*, *Laja*, etc. that increases *Ruksha Guna* and *Shitatwa* in the body and causes fainting, depletion and destruction of tissues and also produce *Vatavyadhis*. The *Ruksha Guna* produces *Rukshata*, *Katinya*, *Stambhana* and *Shoshana* of *Dhatu*, thereby leading to *Vatavridhi*. It produces dehydration in our body. Mainly it includes degenerative changes, musculoskeletal and neuromuscular diseases. Most of

the patients were using refrigerated food items in their home. Because refrigerating food items helps to prevent them from getting damaged and it preserves things for a long period. In the present era, refrigerator is one thing that they cannot live without. Cold food items cause various gut related problems like bloating, puffiness, cramps and also lowers body temperature. Thereby, reducing the flow and circulation of blood all over the body. The *Shitanna* produces *Stambhata* in the body and it is *Vata Vardhaka* by consuming ice creams, refrigerated food items such as vegetables, fruits, soft drinks, instant products, etc. This may have an impact on muscles and bones in the low back. The patients consume less food leads to weight loss and a significant loss of water and minerals in the body which in turn decreases bone density. Weaker bones produce spinal misalignments. Some patients were having a reduced appetite also consume less *Ahara*, thereby produces *Vataprakopa*. The less intake of food is not capable of promoting *Bala* and *Upachaya* to the person, thereby produces *Vatapradhana Vyadhis* due to its vitiation. Patients were having light meals, juices in night time, and as a part of *Upavasa*, they were not consuming proper amount of food as they need. Daily consumption of light food might be not enough for the bodily activities. The *Laghuanna* will also provide *Ropana* and gives *Laghutwa* in the body. Intake of light food indicates quantity wise consumption of *Ahara*. It may lead to mental, physical and emotional health problems. The symptoms like reduced nourishments, sleep disturbances, constantly feeling cold, constipation, anxiety and weight loss. All these may have direct or indirect impact on low back pain. Majority of patients were habituated with excessive consumption of food items such as Pasta, Pizza, instant noodles, spicy chicken tenders, beverages, coffee produces *Kharatwa* in the body. The *Khara Guna* produces *Parushya*, *Karkashata*, *Rukshana*, *Apatarpana* and *Lekhana* of *Dhatu*, thereby *Dhatu* getting *Kshaya*. Due to *Dhatukshaya*, the *Prakopa* of *Vata Dosh* happens. Roughness quality is also increased in the body through administration of certain medicines, food or activities having roughness quality predominantly. Similarly, it causes dryness in excreta, thereby produces constipation and difficulty to pass

the stools. The patients were habituated to have food in improper timings. The *Apraptakala Bhojana* produces *Ama* which aggravates all the *Tridoshas*. The aggravated *Doshas* produce *Agnivaishmya* followed by *Ajirna*. *Atitakala Bhojana* were also seen in some patients as they do the suppression of hunger resulting into *Karshya*, *Vaivarnya*, body ache, etc. The *Karshya* and body ache are caused due to the improper nourishment to all body parts and this may lead to pain in low back. Patients were habituated to take Chipped beef (partially dried beef), *Idiyirachi* (traditional Kerala style), *Kawaab* (air dried, spiced meat), dried boneless salted mutton, etc and unhygienic meat. This increases dryness in the body. The dried meats are kept after processing and preserved by curing, salting, smoking, drying or canning. People who are following unhealthy lifestyle are more prone to consume this type of meat. By the consumption of *Nivara* which belongs to *Shukadhanya* aggravates *Vata* due to its *Shitavirya*, *Laghutwa*. It is a wild variety of rice that produces dryness and lightness to the body. *Mudga* is having the properties of *Kashaya*, *Rukshta*, *Shitavirya* and *Laghutwa*, thereby causes *Vataprakopa*. It helps to reduce the food intake, thereby lowers the weight. The oxalates which are present in the green gram accumulate in the body fluids and they may worsen the kidney and gall bladder disorder. So, this hampers the calcium absorption. The reduced calcium causes osteopenia, a reduction in the bone density. Over a period of time, osteoporosis develops and the bones become thin and more prone for fractures. The excess consumption of *Masura* increases tannins, phytosterols, phenolics and phytic acid. Thereby, causes constipation, stomach upset, heart burn, flatulence, muscle aches and pain, weight loss and impairment in the mineral absorption by the presence of these chemical constituents. It is having the property of *Laghu*, *Shitavirya*, *Kashaya* and *Rukshata*.

#### Discussion on Viharaja Nidana

Most of the patients were dominant with *Ativyayama*. Excessive exercise leads to *Shosha* and *Vataprakopa* leading to *Shoola*. *Ativyayama* gradually leads to *Krishata*, *Sarvadhatukshaya* and *Ojokshaya*, thereby *Vataprakopa* occurs. Excess physical activity causes

muscles and ligaments in the low back to stretch too much and tear. This results into pain, stiffness and even muscle spasms in the back. Majority of patients were belonging to Hindu religion as they are following the rituals of *Upavasa*. Due to that, the *Langhana* brings *Laghutwa* to the body and thereby *Vataprakopa* happens. The *Langhana* mainly done by *Upavasa* by *Anasana* and *Alpabhojana*. Among these *Alpabhojana* in *Upavasa* is more seen in patients and this leads to starvation. Thereby the person will get less nutrition to the body and reduce the body weight. Excessive walking causes *Vatavridhi*. Prolonged walking gives tear and strain to the muscles in the lower back, which leads to aches and pain. People who are having over weight are having high risk of muscle strain after prolonged walking. Dominant patients were having the history of *Abhighata*. It results into the affliction of *Asthi*, *Snayu*, *Mamsa* and *Sandhi* causes *Vataprakopa*. Acute low back pain is often caused by sudden injury to the muscles and ligaments supporting to back. The pain caused by the muscle spasms or strain or tear in the muscles and ligaments. In osteoporosis, compression fracture of the spine also may occur. *Bharavahana* gives more pressure on *Sandhi* and *Mamsa* of lumbar spine and it leads to structural deformities in the vertebra causes *Vataprakopa*. Attempting to lift and twist with heavy loads cause intervertebral rupture in lumbar region. It gives compression on nucleus pulposus and leads to disc degeneration. Majority of patients were getting pain in low back due to *Dukhashayyasana* and *Dukhasana*. This may be due to the improper posture during sitting and sleeping causes discomfort in the *Katipradesha* and leads to *Katigraha*. Prolonged sitting makes the muscles in the back to become strained and painful, reducing the blood supply, slowly developing stiffness and weakness in the back and trunk. Improper sleeping posture give more pressure on the spine and produce various disorders of spine. The patients were doing *Shighrayana* for reaching their destination causes pain in *Sphik*, *Prishta*, *Kati*, *Vamkshana*, etc. Overusing of muscles and ligaments in the back can cause low back pain. After a long period, the lumbar spine and soft tissues become strained and inflamed, potentially leading to muscle spasms and pain. Most of the

patients were students and they were doing *Atiadyayana*. While *Adhyayana*, the person does the strain their lower back for a longer duration by continuous sitting or in irregular sitting posture. This leads to *Vataprakopa*. The patients belong to students, software engineers and old age were doing *Ratrijagarana* produces *Rukshata* in the body. Due to *Ruksha Guna* predominance, *Vata* get aggravated. Recent studies showing that, inadequate or interrupted sleep may worsen back pain. The lack of sleep shuts down the release of growth hormone. The night time release of growth hormone is necessary for relieving pain and healing the body. A lack of sleep prevents this process. Most of the patients do the *Dharana* mainly *Mootra* and *Purisha* during their work. Suppression of forceful expulsion of urges mainly *Mootra* and *Purisha* leads to *Prakopa* of *Vatadosha* especially *Apanavata*. And some patients do the *Vegadharanas* like *Adhovegadharana*, *Kshudhavega*, *Nidravega*, and *Shukravega* *Dharana* leads to *Angabhanga* due to *Vataprakopa*. Majority of volunteers were found in housewives and office workers. In case of housewives, the *Divaswapna* is in the home itself in the form of lying position. Due to that, there is formation of *Ama*, and it obstruct the channels of *Vata*. In case of officeworkers, they were doing *Divaswapna* in sitting position and during travelling in vehicle due to their workload and stress. The sleeping during travelling and in sitting position give some discomforts in *Katipradesha*. Sleeping during daytime is *Abhishyandikara* which leads to *Margavarodha* in *Asthimajjavaha Srotas* in the *Katipradesha*.

#### Discussion on Manasika Nidanas

Majority of patients were having a stressful life due to their work related and family related problems. It affects their mental health either in the form of *Chinta*, *Krodha* or *Bhaya*. *Katigraha* occurs in these patients by *Vataprakopa*. The *Manasika Nidanas* make the person's body to lower the capacity to with strain the physical strain. Majority of volunteers were worried about their future during because of busy life schedule. That affects their mental health and it gives more pressure on their neck and back mainly, thereby

getting low back pain. And *Vataprokopa* also occurs due to its *Rajoguana*. Due to heavy stressful life, patients were getting anger very easily. Majority of patients had a disturbed sleep during night due to pain in low back. The sleeplessness might be also having a relation to get anger easily. Excessive *Krodha* gives *Shoshana* of *Dhatu*s and thereby *Vata* get aggravated. Dominant patients were having fear in their life due to various reasons and thinking about their future life. Thereby releasing of hormones such as cortisol and adrenaline that typically causes an involuntary tightening of muscles especially in neck, shoulders and down to the spine. Prolonged tension in these areas leads to back pain especially low back pain. Excessive *Bhaya* produces *Dhatukshaya* gradually and thereby *Vatavridhi* occurs.

#### Discussion on Kalaja Nidana

The *Kalaja Nidanas* or diurnal changes aggravate the severity of *Katigraha*. The muscles, tendons and ligaments that supports spine makes them tighten and contract when the cold season starts. In cold weather, the people were not doing the activities as compared to other seasons. This lack of activity leads to muscles in the back to weaken and results into back pain due to stiffness. The barometric pressure or the weight of air decreases during rainy days and increases during sunny days causing fluid in joints get thickened, making them stiffened and affects the spine and worsen pain in low back. In *Varsharitu*, *Prakopa* of *Vatadosha* occurs as diurnal changes. In cold winter, there is less blood flow to the muscles, tendons and ligaments that supports the spine. The decreased blood flow can cause tightening of surrounding tissues which gives more strain on spinal nerves and the pain aggravates. Majority of patients were having pain at the end of digestion. This might be due to the type of food they had. Patients habituated with food items like potato, refrigerated food, ice creams, spicy foods, meat produce pain in low back by the formation of gas, bloating after their digestion. *Ahoratriantha* means the end of the day and night. The end of the day these patients were having more physical and mental stress after the day work. Due to this the patients getting back pain worsen. At the end of night, the patients

have a history of back pain were getting a disturbed sleep due to pain and restricted movements. Due to pain, the patients unable to sleep continuously.

## CONCLUSION

The *Katigraha* is a *Shoola Pradhana Vyadhi* due to aggravated *Vata Dosha* in the *Katipradesha*. The pain in the *Katipradesha* mainly starts when the *Asthikshaya* process occurs. Due the predominance of *Vataprakopa* and *Kaphaprakopa Nidanas*, *Vyana Vayu* get obstructed in the *Katipradesha*, thereby *Shoshana* of *Shleshaka Kapha* happens and it leads to occurrence of *Katigraha*. In the chronic stage of *Katigraha*, the vitiated *Vata* hampers the normal circulation of *Rasa* and *Rakta Samvahana* in the *Katipradesha*. This will result into improper nourishment of the spine and *Akunchana Prasarana Pravritti Sa Vedana* due to *Sthambhana*. The works related Low back pain is associated with exposure to ergonomic stressors at work, physical, psychological and personal risk factors. The changed lifestyle, addictions, improper postures during their work, heavy lifting, reduced relaxation and food habits are also having an important role in the prevalence of Low back pain. The *Viharaja Nidanas* like *Langhana*, *Atyadhwa*, *Bharavahana*, *Dukhashayyasana*, *Dukhasana*, *Shighrayana*, *Atijagarana* and *Vegadhrana* plays a major role in the occurrence of *Katigraha*. The *Aharaja Nidanas* like *Katu Rasahara*, *Rukshanna*, *Shitanna*, *Laghuanna* and *Kharahara* were major supportive factors for the occurrence of low back pain, whereas *Tikta Rasahara*, *Vishamasana*, *Shushkamamsa*, *Mudga* and *Masura* were minor supportive factors. Mainly the *Manasika Nidanas* like *Chinta*, *Bhaya* and *Krodha* make the person's body to lower the capacity to with stand the physical stress to decrease the body healing capacity. The *Kalaja Nidanas*, mostly they help in the aggravation of the condition in the form of pain and restricted movements due to diurnal changes. In the present era changed food habits which includes less nutritious and more harmful foods like fast food, fermented foods, instant food preparation, cold items and junk foods are also giving support for the occurrence of the Low back pain. The changed busy life includes improper postures while sitting and lying

position, prolonged standing, heavy lifting, works related travelling gives more stress on the lumbar spine. This leads to reduced blood supply and nutrition to the vertebrae are more prone for the degeneration, disc herniation, fractures and stenosis. These causative factors can be considered under the *Nidanas* of *Katigraha* as explained in the *Samhitas*. Thus, the present study showed a relation of these causative factors towards *Dhatukshayajanya Katigraha*. Along with study of etiological factors, radiological examinations will also helpful for the proper diagnosis through changes in the structures of lumbar vertebrae and it helps to give a quality treatment. Most of the patients are having degenerative changes in the radiological examination. Thus, it supports the *Dhatukshayajanya Katigraha* as per Ayurveda.

## REFERENCES

1. Acharya Agnivesha's Charaka Samhita with English Translation and Critical Exposition Based on Chakrapani Dutta's Ayurveda Deepika Commentary by DR. Ram Karan Sharma & Vaidhya Bhagavan Dash, Reprint edition 2014, Published by Chowkamba Sansrit Series Office, Varanasi, Volume 1, Sutra Sthana Chapter 20, p. 364.
2. Acharya Agnivesha's Charaka Samhita with English Translation and Critical Exposition Based on Chakrapani Dutta's Ayurveda Deepika Commentary by DR. Ram Karan Sharma & Vaidhya Bhagavan Dash, Reprint edition 2015, Published by Chowkamba Sansrit Series Office, Varanasi, Volume 5, Chikitsa Sthana Chapter 20, Verse 11 p. 113.
3. Ashtanga Hridaya of Vagbhata with the Commentaries Sarvangasundara of Arunadatta & Ayurveda Rasayana of Hemadri Annotated by Dr. Anna Moreswar Kunte B.A., M.D. and Krsna Ramchandra Sastri Navre Edited by Pt. Hari Sadasiva Sastri Paradakara, Bhisagacarya, Published by Chaukhamba Sanskrit Sansthan, Varanasi, Nidana Sthana, Chapter 15, p. 531
4. Vangasena Samhita or Chikitsasara samgraha of Vangasena Text with English translation, Notes, Historical Introduction, Comments, Index and Appendices by Dr. Nirmal Saxena, Published by Chaukhamba Sanskrit Series Office, Varanasi, Volume I Nidanadhikara, Amavata Nidana.

5. Acharya Agnivesha's Charaka Samhita with English Translation and Critical Exposition Based on Chakrapani Dutta's Ayurveda Deepika Commentary by DR. Ram Karan Sharma & Vaidhya Bhagavan Dash, Reprint edition 2015, Published by Chowkamba Sansrit Series Office, Varanasi, Volume 5, Chikitsa Sthana Chapter 28, Verse 15-18 p. 617.
6. Y.P. Munjal, API Textbook of Medicine, Jaypee publications; Volume 2, 10<sup>th</sup> edition, Part 24, p. 2470

7. Y.P. Munjal, API Textbook of Medicine, Jaypee publications; Volume 2, 10<sup>th</sup> edition, Part 24, p. 2471

**How to cite this article:** Kavya Krishnan C, Geetha B Markande, Prashanth Jain. Understanding the etiopathogenesis of Katigraha - An Observational Study. J Ayurveda Integr Med Sci 2022;6:87-98. <http://dx.doi.org/10.21760/jaims.7.6.12>

**Source of Support:** Nil, **Conflict of Interest:** None declared.

\*\*\*\*\*