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An Ayurvedic approach to Low Back Pain

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ABSTRACT

Low back pain is the leading cause of activity limitation and work absence throughout much of the world, imposing a high economic burden on individuals, families, communities, industry and governments. It is a prevalent condition that afflicts about 70% of people in developing countries at some point in their lifetime. Ayurvedic classical terms such as *Katishoola*, *Kati Graha*, *Trika Shoola* and *Gridhrasi* are used for describing the low back pain. The pain localized to low back can be considered under *Katishoola* and pain along with stiffness are included under *Katigraha* and Pain radiating to lower limb are considered under *Gridhrasi*. Treatment modalities which are beneficial for pacifying *Vata* such as *Vatasaya Upakrama* and *Vatavyadhi Chikitsa* are used in treating conditions of low back pain. Specific *Chikitsa Sutras* mentioned for the *Katishoola*, *Katigraha*, *Trikashoola* and *Gridhrasi* are to be followed in low back pain. To prevent the reoccurrence, lifestyle modification and low back strengthening exercise are to be advised.

Key words: Ayurveda, Low back pain, *Katishoola*, *Katigraha*, *Trikashoola*, *Gridhrasi*

INTRODUCTION

Many of the people experience Low back pain at certain point of time in their lifetime. Low back pain is a very common health issue worldwide and it is a major cause of disability. Low back pain affects population of all ages and it is the fifth most common reason for physician visits. Low Back pain occurrence is increasing day by day due to sedentary life style and

unhealthy work patterns; Low back pain usually originates from the nerves, muscles, bones, joints and other structures in the spine. It is the pain localized to lumbar spine or pain radiating from lumbar spine to lower limbs. The lumbar region is the work house of our spine and it bears most of body weight and support the entire body. Hence the vertebrae of this region are stronger and heavier compared to other regions of spine and also more prone for pain and discomfort.

Ayurvedic literatures explain different diseases affecting the *Kati* region. They mainly present with pain (local or radiating) or stiffness as one of the prominent symptoms in the *Kati Pradesh*. Ayurvedic classic terms such as *Katishoola*, *Kati Graha*, *Trika Shoola* and *Gridhrasi* are used for describing the low back pain.

Incidence of first-ever episodes of low back pain is already high by early adulthood and symptoms tend to recur over time. The lifetime prevalence of non-specific (common) low back pain is estimated at 60%

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to 70% in industrialized countries (one-year prevalence 15% to 45%, adult incidence 5% per year). The prevalence rate for children and adolescents is lower than that seen in adults but is rising. Prevalence increases and peaks between the ages of 35 and 55. As the world population ages, low back pain will increase substantially due to the deterioration of the intervertebral discs in older people.^[1]

Definition of Low Back Pain

Low Back Pain is defined as, Pain and discomfort localized below the costal margin and above the inferior gluteal folds, with or without leg pain.^[2]

Pain which occurs posteriorly in the region between the lower rib margin and the proximal thighs is considered as Low Back Pain.^[3]

AIMS AND OBJECTIVES

1. To study, discuss and elaborate the different Ayurvedic concepts related with low back pain.
2. To study different Ayurvedic treatment modalities of low back pain.

Risk Factors^[4]

Age

The first attack of low back pain typically occurs between the ages of 30 and 50, and back pain becomes more common with advancing age.

Weight Gain

Being overweight, obese or quickly gaining significant amounts of weight can put stress on the back and lead to low back pain.

Genetics

Some causes of back pain, such as Ankylosing Spondylitis, a form of arthritis that involves fusion of the spinal joints leading to some immobility of the spine, have a genetic component.

Occupational Risk Factor

Having a job that requires heavy lifting, pushing, or pulling, particularly when it involves twisting or vibrating the spine, can lead to injury and back pain.

Pregnancy

commonly accompanied by low back pain, which results from pelvic changes and alterations in weight loading.

Mental health

Pre-existing mental health issues such as anxiety and depression can influence how closely one focuses on their pain as well as their perception of its severity.

Causes of Low Back Pain^[5]

The causes of low back pain can be classified into common causes and uncommon causes.

Uncommon causes (direct causes)

- Causes related to spine-these include condition like infection, Tumors, IVDP, lumbar spondylosis, Lumbar canal stenosis.
- Causes not related to spine these include problems in other system like genitourinary tract, gastrointestinal tract, prolapsed of uterus, etc.

Common cause of Low back pain (indirect cause)

These account for 8 out of 10 cases. The common varieties of low back pain are muscular strains, ligament sprains and disk diseases. The causes for these maladies are,

- Poor posture habits
- Heavy physical work: prolonged periods of static work postures, heavy lifting, twisting, and vibration of spine.
- Psychosocial factors: stress, depression, work related factors such as dissatisfaction and monotonous work
- Unaccustomed lifting of weight
- Improper work culture and work habits
- Smoking and Drug abuse
- Osteoporosis
- Obesity (body mass index greater than 30 kg/m²)

Low Back Pain in Ayurveda

In *Ayurveda* LBP can be correlated to following conditions such as, *Kati Shoola*, *Kati Graha*, *Trika Shoola* and *Gridhrasi* etc.

Katishoola^[6]

Shoola in *Kati Pradesha* is *Pratyatma Lakshana* of *Kati Shoola*. The *Shoola* may be of various types, which occurs by provoked *Vata Dosha*. In *Katishoola*, pain is confined to the *Kati Pradesha* or the Lumbo-sacral and sacroiliac region only.

Kati Graha^[7]

The word '*Katigraha*' combination of two words '*Kati*' + '*Graha*'

"*Kati*" is derived from the root "*Kat in*" meaning *Shareera Avayava Vishesham*.

"*Graha*" means catch or hold. It is formed by "*Graha Upadane*" *Dhatu* means – one which gives support.

Thus "*Katigraha*" is a condition of the Low back associated with pain and stiff movements. When Vitiated *Vata* alone or along with *Ama* makes *Sthana Samsharya* in *Kati Pradesha*, produces pain and stiffness is considered as *Kati Graha*.

Trika Shoola^[8]

The union of 2 *Sphikasthi* and 1 *Prustavamsha* is considered as *Trika*. *Vata Janita Pida* or *Vedana* in this area is considered as *Trikashoola*.

Trika Shoola is mentioned in *Charaka Samhita* under the context of *Apatarpana Janya Vyadhi*, *Gudagata Vata* and *Tritiyaka Jwara*^[9]

Gridhrasi^[10]

Gridhrasi is a *Vataja Nanatamaja Vyadhi* characterized by *Stambha*, *Ruk*, *Toda* and *Spandana*. These symptoms initially affect *Sphik* as well as posterior aspect of *Kati* and then gradually radiates to posterior aspects of *Uru*, *Janu*, *Jangha* and *Pada*.

Table 1: Partial correlation of Conditions of Low back pain with Ayurvedic terminology

Ayurvedic terminology	<i>Kati Shoola</i> and <i>Trika Shoola</i>	<i>Kati Graha</i>	<i>Gridhrasi</i>
Character of pain	Pain localized to low back	Pain localized to low back pain associated with stiffness	Low back pain radiating to lower limbs

Modern correlation	Lumbar Spondylosis	Lumbar spondylosis Lumbar Sprain or Strain	Lumbar Canal Stenosis IVDP Lumbar Spondylolisthesis
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Ayurvedic Management of Low Back Pain

Acharyas have mentioned that there is no *Shoola* without the vitiation of *Vata*.^[11] Hence the treatment modalities which are mentioned for pacifying *Vata* can also be adopted in low back pain such as *Vatasaya Upakrama*, *Vatavyadhi Chikitsa* and other treatments which are beneficial in pacifying *Vata*.

The treatment of low back pain should be aimed at reducing pain and stiffness and arresting the process of degeneration and reoccurrence. Specific *Chikitsa Sutras* mentioned for the *Katishoola Katigraha*, *Trikashoola* and *Gridharsi* are also to be followed, Such as

- *Snehana* and *Swedana*
- *Mrudu Samshodana / Anulomana*
- *Basti*
- *Shaman Aushadhi*

Snehana

Snehana should be done only in *Nirupastambhita Vata*^[12] by the word *Snehana* both external and internal *Snehana* are considered. For internal *Snehapana Chaturvidha Mahasneha* are indicated. External *Snehana* is done by *Abhyanga*, *Snehadhara / Parisheka*, *Avagaha* and *Kati Basti* etc. It is contraindicated in *Ama*, *Avrita Vata*, *Ajeerna*, *Aruchi* etc. In case of associated *Ama* or *Kapha Dosha*, *Langhana* and *Pachana* are the first line of treatment preceding *Snehapana* to facilitate the *Niraamaavasta*.

Swedana

Snehanapurvak Swedana is indicated in *Nirama Vatavyadhis* while only *Swedana* is indicated in *Samavatavyadhis*. *Nadi*, *Prastara* and *Sankara* etc, are the various types of *Sweda*.^[13] *Kati Shoola* is a *Sweda Sadhya Vyadhi*. Among the different forms of *Sweda* procedures, *Nadi Sweda*, *Patra Pinda Sweda*,

Parisheka Sweda, *Avagaha Sweda*, and *Upanaha Sweda* are used. *Swedana* is useful in relieving pain, restricted movement in *Kati Pradesha*.

Mrudu Samshodana

The *Doshas* which are not pacified by *Snehana* and *Swedana* should be removed from the body. Hence *Mrudu Virechana* is advised for this purpose. *Snigdha Virechana* is advised for *Vatavyadhi*. *Virechana* has an important role in chronic LBP. *Eranda Taila* is recommended for *Nitya Virechana* in *Katishoola*.^[14] For *Mrudu Virechana* *Tilvaka Sidha Ghrita*, *Satala Sidha Ghrita* and *Erandabeeja Payasa* etc are used.

Basti

Basti is the best treatment for *Vata*. *Basti* has got a major role in the treatment of *Gridhrasi*, *Kati Shoola* and *Trikashoola*. In *Kevala Vataja – Vataghna Basti* like *Dashamoola Niruha Basti*, *Erandamoola Niruha Basti* and *Balaamoola Niruha Basti* are given. In *Kapha Pradhana* or *Saama/Avarana* condition, *Tikshna Basti* likes *Kshara Basti*, *Vaitarana Basti*. *Erandamoola Kshaara Basti* with *Avaapa Dravyas* like *Gomutra*, *Chincha Rasa* and *Amla Kanji* are used. In *Marmabhighaata*, *Yapana Basti* like *Raja Yapana Basti* is selected. In *Asthi Pradoshaja Vikaara*, *Tikta Rasa Ksheera Basti* with *Tikta Sarpi* as *Sneha* is selected. *Matrabasti* or *Nitya Snehana* is indicated in those who are actively involved in such stressful activities which cause strain to the *Kati Pradesha*.

Shamana Aushadi

Table 2: Commonly used Shamana Aushadis in Low back pain

<i>Churna</i>	<i>Ashvagandhadi Churna</i> <i>Ajamodadi Churna</i> <i>Chopachini Churna</i> <i>Abhadhya Churna</i> <i>Rasanadi Churna</i> <i>Krishanadi Churna</i> <i>Ajamodadi Churna</i>
<i>Kashaya</i>	<i>Sahacharadi Kashaya</i> <i>Dashamoola Katutrayadi Kashaya</i> <i>Rasna-Erandadi Kashaya</i>

	<i>Rasnadi Kashaya</i> <i>Maharasnadi Kashaya</i> <i>Mashabaladi Kashaya</i>
<i>Guggulu</i>	<i>Mahayogaraj Guggulu</i> <i>Trayodashanga Guggulu</i> <i>Lakshadi Guggulu</i> <i>Rasnadi Guggulu</i> <i>Abhadi Guggulu</i>
<i>Ghrita</i>	<i>Chagaladya Ghrita</i> <i>Guggulu tiktakam Ghritam</i> <i>Panchatiktakam Ghritam</i> <i>Pippalyadi Ghrita</i>
<i>Taila</i>	<i>Sahacharadhi Taila</i> <i>Mahamasha Taila</i> <i>Prasarini Taila</i> <i>Bala Taila</i> <i>Eranda Taila</i> <i>Vishagrabha Taila</i> <i>Gandha Taila</i> <i>Lakshadi Taila</i> <i>Balalakshadi Taila</i> <i>Mahanarayana Taila</i> <i>Panchaguna Taila</i> <i>Pinda Taila</i>
<i>Rasa Aushadi</i>	<i>Vatari Rasa</i> <i>BrihataVata Chintamani Rasa</i> <i>VataGajankusha Rasa</i> <i>MahaVata Vidhwansa Rasa</i> <i>Rasaraja Rasa</i> <i>Vishamusti Vati</i>

Pathya- Apathya

Table 3: Pathya Ahara and Vihara

Ahara		
1.	<i>Rasas</i>	<i>Madhura-Amla-Lavana</i>
2.	<i>Shukadhanya</i>	<i>Nava Godhuma, Nava Shali, Rakta Shali, Shashtika Shali</i>
3.	<i>Shimbi Varga</i>	<i>Nava Tila, Masha, Kulatha</i>

4.	<i>Shaka Varga</i>	<i>Patola, Shigru, Vartaka, Lashuna</i>
5.	<i>Mamsa Varga</i>	<i>Ushtra, Varaha, Mahisha, Magura, Bheka, Nakula, Chataka, Kukkuta, Tittira, Kurma</i>
6.	<i>Jala Varga</i>	<i>Ushnajala, Shrithasheetajala, Narikelajala</i>
7.	<i>Dugdhavarga</i>	<i>Go, Aja, Dadhi, Ghritha, Kilata, Kurchika</i>
8.	<i>Madyavarga</i>	<i>Dhanyamla, Sura</i>
9.	<i>Snehavarga</i>	<i>Ghritha, Tila, Vasa, Majja</i>
10.	Present day food stuffs	Orange juice, carrot, all fibrous fruits and Vegetables
Vihara		
1.	<i>Veshtana, Trasana, Mardana, Snana, Bhushayya</i>	
2.	Present day & activities: Physiotherapy exercise, Yoga Asana, Steam bath	

Apathya

Table 4: Apathya Ahara and Vihara

Ahara		
1.	<i>Rasas</i>	<i>Katu, Kashaya</i>
2.	<i>Shukadhanya</i>	<i>Truna, Kangu, Koradusha, Neevara, Shyamaka</i>
3.	<i>Shimbivarga</i>	<i>Rajamasha, Nishpava, Kalaya</i>
4.	<i>Phalavarga</i>	<i>Jambu, Udumbura, Kramuka, Tinduka</i>
5.	<i>Mamsa varga</i>	<i>Sushka mamsa, Kapota, ParaVata</i>
6.	<i>Jala varga</i>	<i>Sheetajala</i>
7.	<i>Dugdhavarga</i>	<i>Gardabha</i>
8.	Present day food stuffs	Fast food, cold beverages, liquor
Vihara		
1.	<i>Manasika:</i>	<i>Chinta, Shoka, Bhaya</i>

2.	Daily activities	Long standing sitting, driving, staying in AC etc.
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Measures to prevent the recurrence of low back pain

To prevent the recurrence, following are advised

Nidana Parivarjana

Nidana Parivarjana i.e., is avoiding the causes which are responsible for causation of low back pain should be the first line of treatment, excess travelling, *Bharavahana* (heavy weight lifting), *Vega Dharana*, *Dukha Shaya* (Bad postures) are to be strictly avoided, which may worsen the condition or predispose the second episode. The *Ahara Vihara* which aggravates *Vata* is to be avoided.

Life style modification

There is good evidence that lifestyle interventions are an important element in the prevention and management of LBP. Smoking cessation is an important lifestyle intervention for LBP.

While lifting any object squat and lift object, avoid bending while lifting, keeping spine straight and using back rest while sitting and driving, sleep sideways with knee and the hip bent and while sleeping on back put pillow behind knees.

Low back strengthening exercise

The Lumbar/Core Strength and Stability exercises which are aimed at strengthening all important anti gravity muscles like back, hip and leg muscles are advised in low back pain and it includes flexibility and strengthening exercises. Flexibility exercise includes Quadriceps Stretch, Hip Flexor Stretch, Adductor Stretch, Hamstring Stretch, Dynamic Hamstring Stretch, Gluteal Stretch and Camel-Cat stretch.

Yoga Asana in Low back pain

- **Pavanmuktasana** - help to stretch the muscles of lower back and thigh
- **Ardhakati Sarvangasana** - helps strengthen the lower anterior abdominal wall muscles
- **Paschimottasana** - helps to stretch the spinal and hamstring muscles

- **Ekapada Shalabhasana and Dwipada Shalabhasana** - help to develop back extensor muscles
- **Makarasana** - helps to develop the upper and lower back extensor muscles
- **Ardhakatibhujangasana** - helps to develop spinal muscles
- **Bhujangasana** - help to develop spinal extensor muscle
- **Shashankasana** - help to stretch side muscles of chest and abdomen

DISCUSSION

Low back pain is the most common type of back pain and is a prevalent condition that afflicts about 70% of people in developing countries at some point in their lifetime. *Kati Pradesh* is described as an important seat of *Vata Dosha*.^[15] *Kati* is an area where there is a conglomeration of various *Sandhi*, *Snayu* and *Peshi*. Therefore the vitiation of *Vata* can cause pathologies of these structures in the *Kati Pradesh* leading to their hampered functioning and pain and discomfort. In *Ayurveda* the *Samanya Vatavyadhi Nidana*^[16] can also be considered as *Nidana* for low back pain, Such as:

Table 5: Vatavyadhi Nidana and causes of low back pain

<i>Ativichesta, Palvana, Atiadhava Gamana</i>	Insult to spine
<i>Dukha Shaya</i>	Bad postures
<i>Chinta, Shoka, Krodha</i>	Mental hazards
<i>Dhatu Kshaya</i>	Degenerative cause
<i>Gaja Ushtra Ashwa Yana</i>	Excessive travelling
<i>Abhighata/ Marmaghata</i>	Fall or Trauma

Pressure on the intervertebral disc varies considerably during movements and various pressures. It seen that pressure is highest in sitting position, while 30% less in standing position and 50% less if the person is lying down. Hence sitting for long periods is more

uncomfortable than standing and walking. Jobs which include continuous sitting are more prone to get low back pain. Treatment of low back pain includes treatments which are mentioned for *Vatavyadhi*, *Katishoola*, *Katigraha*, *Trikashoola* and *Gridhrasi*. *Sneha* pacifies *Vata*, brings out softness in the body and removes *Malasanga*.^[17] *Bahya Warm Sneha* when applied enters through dilated capillaries & gets absorbed through the skin. *Sneha* helps in reducing inflammation and promoting mitochondrial biogenesis and stimulates skin mechanoreceptors inhibiting the stimulatory signal of muscle contraction at the spinal level, and reduces the synaptic release of acetylcholine, causing muscles to relax. It decreases muscle tension by reducing neuromuscular excitability. *Swedana* is useful in relieving pain, restricted movement in *Kati Pradesh*. It is mainly used in *Katishoola*, *Kati Graha* and *Gridhrasi*. *Swedana* acts as, *Stambhaghna*, *Gauravaghna*, *Shitaghna* and *Sweda Karaka*.^[18]

Stambhaghna: *Swedana* relieves *Stambha* (stiffness). *Vayu* by *Ruksha Guna* absorbs *Snigdha* and so causes *Stambha*. *Swedana* is *Snigdha* and *Ushna* so it relieves *Stambha*. *Ushna Guna* of *Swedana* does *Sroto Shodana* and *Amapachana* and it relieves stiffness. *Gouravaghna*: *Swedana* relieves heaviness in the body. It causes excretion of watery content of the body through *Sweda* or *Kleda*. Due to elimination of *Kleda*, lightness is achieved. *Shitaghna*: This is mainly due to *Ushna Guna*. *Ushnata* also reduces pain. *Swedakaraka*: *Swedana* promotes sweating. *Swedana* drugs by *Ushna* and *Tikshna Guans* are capable of penetrating the microcirculatory channels where they activate sweat glands to produce more sweat. After dilation of microchannels the circulation will become proper and helps in reducing the stiffness, pain and helps for easy movements.

Katibasti is the form of *Snigdha Sweda* and acts as both *Snehana* and *Swedana*. Thus, locally at *Kati Pradesh* it causes *Doshvilayan*, *Kledan* due to *Taila* application. Acts as *Srotovishodhana* and *Sweda Pravartan* by its warm temperature. It causes *Snehana*, *Vishyandan*, *Mardavata* and *Kledanakaraka*, Relieves Stiffness, Heaviness, and Coldness. Give

results to decrease cardinal symptoms of *Katishoola* and *Katigraha*. *Kati Basti* is a type of moist heat; it helps to increase in blood flow, reduces inflammation, decrease joint stiffness and relieve deep muscle pain & spasm.^[19]

Basti is considered as *Param Vatahara*, because it makes the *Vata* to move in its natural paths and channels. Also, it has systemic effect in eliminating *Doshas* from the body gradually by *Pakwashaya Shodhana*. *Niruha Basti* is *Srotovishodhan* and *Malapahara*, while *Anuvasana* performs the function of *Malashodhana* and *Vatashaman*.^[20] *Malasanga* (Constipated bowel) increases the pressure on the lumbar spine resulting in increased low back pain, enema helps to reduce the pressure there by decreases the pain.

CONCLUSION

Low Back pain is a standout amongst the most widely recognized reasons individuals go to the specialist or miss work and the main source of inability around the world. According to *Ayurveda*, Low back pain can be correlated to *Kati Shoola*, *Kati Graha*, *Trika Shoola* and *Gridhrasi*. The pain localized to low back can be considered under *Katishoola* and pain along with stiffness are included under *Katigraha* and Pain radiating to lower limb are considered under *Gridhrasi*. *Vata* is the main *Dosha* involved in Causation of Low Back Pain, treatment modalities or the drugs processing *Vatahara* property are helpful in treating LBP, Such as *Snehana*, *Swedana*, *Katibasti*, *Anulomana* or *Mrudhu Virechana* and *Basti*. *Snehana* and *Swedana* give a better result. *Snehana* helps in cure *Vata* disorders quickly and effectively due to the *Vatahara* as well as *Brihmana* properties and *Swedana* alleviates aggravated *Vata*, Softens the body and disintegrates the adhered morbid material. *Mrudhu Virechana* helps to relive pressure and reduces the burden over spine. *Basti* helps to eliminating accumulated *Doshas* from the entire body it alleviates disease. To prevent reoccurrence *Nidana Parivarjana*, lifestyle modification such as proper sitting, standing and sleeping postures which reduces burden over spine, reduction of weight & cessation

tobacco use and low back strengthening exercise and Yoga Asana are advised.

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