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RESEARCH ARTICLE

"EXPLORING AYURVEDIC APPROACHES TO LOW BACK PAIN: A COMPREHENSIVE REVIEW"

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Abstract

Introduction: Low back pain (LBP) is a common musculoskeletal disorder affecting individuals worldwide, causing significant disability and healthcare burden. While conventional treatments focus on symptomatic relief, Ayurveda, the ancient Indian system of medicine, offers a holistic approach that addresses the root cause of LBP. This comprehensive review aims to explore Ayurvedic perspectives, diagnostic methods, therapeutic interventions, and herbal formulations for managing LBP.

Ayurvedic Perspective: Ayurveda views LBP as a manifestation of imbalances in the Tridosha (Vata, Pitta, and Kapha) and the Saptadhatus (seven body tissues). Vata dosha vitiation is predominantly implicated in LBP, leading to symptoms such as stiffness, spasms, and radiating pain. Pitta and Kapha imbalances may exacerbate inflammation and structural degeneration, respectively. Ayurvedic diagnosis of LBP involves assessing the individual's Prakriti (constitutional type), Vikriti (current imbalance), Agni (digestive fire), and Srotas (channels of circulation).

Diagnostic Methods: Ayurvedic physicians employ a combination of clinical examination, palpation, and pulse diagnosis (Nadi Pariksha) to assess the underlying doshic imbalances and identify the specific etiology of LBP. Various factors such as lifestyle habits, occupation, dietary patterns, and psychological stressors are taken into account during the assessment.

Therapeutic Interventions: Ayurvedic management of LBP is multifaceted, aiming to alleviate pain, reduce inflammation, restore musculoskeletal integrity, and prevent recurrence. Therapeutic interventions include:

Panchakarma: Detoxification therapies such as Basti (medicated enema), Abhyanga (oil massage), and Swedana (herbal steam therapy) are utilized to eliminate ama (toxins) and pacify aggravated doshas.

Ayurvedic Medications: Herbal formulations containing anti-inflammatory, analgesic, and muscle-relaxant herbs like Ashwagandha (*Withania somnifera*), Guggulu (*Commiphora wightii*), and Shallaki (*Boswellia serrata*) are prescribed to manage pain and inflammation.

Yoga and Pranayama: Specific yoga asanas (postures) and pranayama (breathing exercises) are recommended to improve flexibility, strengthen the back muscles, and enhance prana (vital energy) flow to the affected area.

Dietary Modifications: Dietary recommendations include consuming warm, light, and easily digestible foods, emphasizing anti-inflammatory spices like turmeric, ginger, and cinnamon, and avoiding cold, heavy, and processed foods that may aggravate Vata dosha.

Lifestyle Management: Adopting a balanced daily routine (Dinacharya), practicing stress-reduction techniques such as meditation and mindfulness, and maintaining proper posture and ergonomics are crucial for long-term management of LBP.

Clinical Evidence: Several clinical studies have investigated the efficacy of Ayurvedic interventions in LBP management. A randomized controlled trial comparing Ayurvedic treatment with conventional therapy demonstrated significant improvements in pain relief, functional disability, and quality of life among participants receiving Ayurvedic intervention. Furthermore, observational studies have reported favorable outcomes with Panchakarma therapies and herbal formulations in reducing pain intensity and enhancing mobility in patients with chronic LBP.

Safety and Considerations: While Ayurvedic interventions are generally considered safe when administered under the guidance of a qualified practitioner, certain precautions should be observed. Individualized treatment plans based on the patient's constitution, doshic imbalance, and overall health status are essential to optimize therapeutic outcomes and minimize potential adverse effects. Additionally, close monitoring and periodic reassessment are necessary to track progress and adjust treatment as needed.

Conclusion: Ayurveda offers a holistic and individualized approach to managing low back pain, addressing not only the symptoms but also the underlying imbalances contributing to the condition. By incorporating Panchakarma therapies, herbal formulations, dietary modifications, and lifestyle interventions, Ayurvedic treatment aims to restore harmony within the body, promote self-healing, and prevent recurrence of LBP. Further research and collaboration between Ayurvedic and conventional healthcare systems are warranted to validate the efficacy and safety of Ayurvedic interventions and enhance their integration into mainstream healthcare for comprehensive LBP management.

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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% 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.

Low back pain, known as *Katishoola* in Ayurveda, stands as a prevalent musculoskeletal ailment affecting individuals globally. According to Ayurvedic principles, *Katishoola* arises from imbalances in the Vata, Pitta, and Kapha doshas, the fundamental energies governing the body. Vata dosha, responsible for movement, is primarily implicated in this condition. Factors such as irregular lifestyle habits, prolonged sitting or standing, exposure to cold weather, and excessive physical exertion can disturb Vata dosha equilibrium, leading to symptoms like stiffness, spasms, and radiating pain in the lower back region. Additionally, aggravation of Pitta dosha may contribute to inflammation, while Kapha imbalance can lead to stiffness and reduced flexibility in the lumbar area. Ayurvedic diagnosis of *Katishoola* involves a comprehensive assessment of the individual's Prakriti (constitution) and Vikriti (current imbalance), along with evaluating Agni (digestive fire) and Srotas (channels of circulation). Clinical examination, pulse diagnosis (*Nadi Pariksha*), and imaging modalities are employed to assess the severity and underlying causes of low back pain.

The Ayurvedic approach to managing *Katishoola* is multifaceted, aiming to alleviate pain, reduce inflammation, restore musculoskeletal integrity, and prevent recurrence. Therapeutic interventions include pacifying aggravated Vata dosha through treatments like *Abhyanga* (herbal oil massage), *Swedana* (herbal steam therapy), and *Basti* (medicated enema). Anti-inflammatory herbal formulations containing *Ashwagandha*, *Guggulu*, and *Shallaki* are prescribed to alleviate pain and inflammation in the lumbar region. Strengthening exercises such as yoga asanas targeting the lumbar spine, dietary modifications, and lifestyle adjustments are also integral components of Ayurvedic treatment for low back pain. Dietary recommendations focus on consuming warm, light, and easily digestible foods, while lifestyle management emphasizes stress reduction techniques like meditation and proper posture maintenance.

Ayurvedic formulations tailored for *Katishoola* encompass a combination of herbs and minerals aimed at addressing the root cause of the condition and alleviating associated symptoms. These formulations may include *Maharasnadi Kwath*, *Trayodashanga Guggulu*, and *Yogaraja Guggulu*, which are known for their analgesic, anti-inflammatory, and muscle-relaxant properties. Additionally, herbal remedies like *Dashmoolarishta* and *Punarnavadi Kashayam* are utilized to improve circulation, reduce swelling, and promote tissue repair in the affected area.

While Ayurvedic interventions for *Katishoola* are generally safe, they should be administered under the guidance of a qualified practitioner to ensure optimal therapeutic outcomes and minimize potential adverse effects. Integrating Ayurvedic principles with conventional healthcare approaches can offer a comprehensive and holistic approach to managing low back pain, addressing both the symptoms and underlying imbalances contributing to the condition. Further research and collaborative efforts are warranted to validate the efficacy and safety of Ayurvedic interventions and promote their integration into mainstream healthcare for comprehensive management of *Katishoola*.

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.

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

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

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

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:

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:

The word 'Katigraham' combination of two words 'Kati' + 'Graham'

"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:

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

Gridhrasi :

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.

Management of pain in ayurveda

Detoxification (Shodhana):

Panchakarma begins with preparatory therapies like Snehana (oleation) and Swedana (sudation) to loosen toxins (ama) and mobilize them towards the gastrointestinal tract.

Main detoxification procedures like Vamana (therapeutic vomiting), Virechana (purgation), and Basti (medicated enema) are then administered to eliminate accumulated toxins from the body.

Balancing Doshas (Samana):

Panchakarma therapies help balance the doshas, particularly Vata, Pitta, and Kapha, which may be imbalanced in conditions causing pain.

Specific herbal formulations and oils used during Panchakarma procedures are selected to pacify aggravated doshas and alleviate pain and inflammation.

Strengthening Tissues (Brimhana):

Following detoxification, therapies aimed at nourishing and strengthening the tissues are administered. These may include rejuvenating treatments like Abhyanga (oil massage), Shirodhara (oil pouring on the forehead), and Pizhichil (oil bath).

These therapies help improve circulation, reduce muscle tension, and promote relaxation, which can alleviate pain and enhance overall well-being.

Herbal Support:

Herbal formulations prescribed during Panchakarma may include anti-inflammatory and analgesic herbs such as Ashwagandha, Guggulu, Shallaki, and Dashmool. These herbs support the detoxification process and help manage pain and inflammation.

Lifestyle and Diet Modifications:

Panchakarma is often accompanied by dietary modifications and lifestyle recommendations tailored to the individual's doshic constitution and specific condition.

Dietary guidelines may include consuming warm, easily digestible foods and avoiding cold, heavy, and processed foods that may exacerbate pain and inflammation.

Herbal Formulations:

Ayurvedic pharmacopoeia offers numerous herbal formulations specifically designed for LBP, such as:Maharasnadi Kwath: A decoction containing herbs like Rasna (*Pluchea lanceolata*) and Guduchi (*Tinospora cordifolia*) that possess analgesic and anti-inflammatory properties.

Trayodashanga Guggulu:

A classical formulation comprising Guggulu and other herbs like Shunthi (*Zingiber officinale*) and Triphala, effective in reducing pain and inflammation associated with LBP.

Yogaraja Guggulu:

Another Guggulu-based formulation enriched with anti-arthritis herbs like Rasna and Amalaki (*Emblica officinalis*), beneficial in managing chronic LBP and associated joint stiffness

Pathya –Apathya in low Back pain

Pathya (Beneficial):

Warmth:

Keeping the lower back area warm through appropriate clothing, blankets, or heating pads can help alleviate stiffness and discomfort associated with Kati Shoola.

Gentle Exercise:

Engaging in gentle exercises and stretches that target the muscles of the lower back can help improve flexibility, reduce muscle tension, and promote circulation to the affected area.

Postural Correction:

Maintaining proper posture while sitting, standing, and lifting objects can prevent strain on the lower back and reduce the risk of exacerbating Kati Shoola.

Weight Management:

Maintaining a healthy weight through balanced nutrition and regular exercise can reduce the strain on the lower back and alleviate pressure on the spine.

Ayurvedic Therapies:

Undergoing Ayurvedic treatments such as Abhyanga (oil massage), Swedana (herbal steam therapy), and Basti (medicated enema) under the guidance of a qualified practitioner can help alleviate pain and inflammation in the lower back region.

Stress Management:

Practicing stress-reduction techniques such as meditation, deep breathing exercises, and relaxation techniques can help reduce muscle tension and promote relaxation, which can alleviate symptoms of Kati Shoola.

Apathya (Harmful):

Cold Exposure:

Exposure to cold weather or cold drafts can exacerbate symptoms of Kati Shoola by increasing muscle stiffness and tension in the lower back.

Prolonged Sitting or Standing:

Maintaining a static posture for extended periods, whether sitting or standing, can strain the muscles and ligaments of the lower back, leading to increased pain and discomfort.

Heavy Lifting:

Lifting heavy objects without proper body mechanics can strain the muscles and structures of the lower back, leading to acute exacerbations of Kati Shoola.

Sedentary Lifestyle:

Lack of physical activity and sedentary behaviors can weaken the muscles supporting the lower back and increase the risk of developing or worsening Kati Shoola.

Improper Diet:

Consuming foods that are heavy, oily, spicy, or difficult to digest can exacerbate digestive issues and increase inflammation in the body, potentially worsening symptoms of Kati Shoola.

Stress and Anxiety:

Emotional stress and anxiety can exacerbate muscle tension and increase pain perception in individuals with Kati Shoola, making it essential to manage stress through relaxation techniques and stress-reduction strategies.

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 Dosh. [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 can also be considered as Nidana for low back pain, Such as: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, Triakashoola and Gridhrasi. Sneha pacifies Vata, brings out softness in the body and removes Malasanga. 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.

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. 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.

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. 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 Dosh 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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