



ADOPTION OF AYURVEDA IN OSTEOARTHRITIS: NEED OF THE HOUR

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ABSTRACT

Osteoarthritis (OA) is a disorder involving movable joints characterized by joint pain, swelling and stiffness that lead to activity limitations, participation restrictions, sleep interruption, fatigue and depressed or anxious mood, and ultimately loss of independence and compromised quality of life. The global impact of OA constitutes a major challenge for health systems in the twenty-first century. OA, with a 75% increase in years lived with disability (YLDs) has ranked as the third most rapidly rising condition associated with disability. OA is also associated with increased comorbidity like cardiovascular disease, heart failure or ischemic heart disease. One more alarming feature of this disease entity is that it is associated with increased mortality, both directly as well as indirectly. Although numerous therapeutic agents are available in conventional medicine, they are not only associated with a risk of morbidity and mortality due to adverse effects of the interventions, but also incapable of reducing progression from early to end-stage OA. Hence, to effectively address the rising burden of OA, there is an urgent need for the exploration of treatment/management strategy that might intervene in the pathophysiology and progression of OA. This article advocates the adoption of Ayurvedic management, which can serve these purposes since it is, in addition of being effective, friendly, safe and cheap, capable of preventing disease progression, minimizing disability, improving the quality of life and also setting right the causative factors which lead to formation of OA.

KEYWORDS: Osteoarthritis, Ayurveda, Sandhivata, Abhyanga, Yograja Guggulu.

INTRODUCTION

Osteoarthritis (OA) is a disorder involving movable joints characterized by cell stress and extracellular matrix degradation initiated by micro- and macro-injury that activates maladaptive repair responses. The disease manifests first as a molecular derangement followed by anatomic, and/or physiologic derangements that can culminate in illness.^[1] The illness is characterized by joint pain, swelling and stiffness that lead to activity limitations, participation restrictions, sleep interruption, fatigue and depressed or anxious mood, and ultimately loss of independence and compromised quality of life.

The global impact of OA constitutes a major challenge for health systems in the twenty-first century and in the coming years. OA affects 240 million people globally. Worldwide estimates are that 9.6% of men and 18.0% of women aged over 60 years have symptomatic OA.^[2] The global prevalence of combined symptomatic and radiographic OA of the knee and hip from the GBD 2013 Study was 3.8%, ranging from 2.3% in males to 4.5% in females.^[3] This is the most frequent joint disease with a prevalence of 22% to 39% in India.^[4]

The trends in years lived with disability (YLDs) from 1990 to 2013 depict that OA, with a 75% increase in YLDs, ranked as the third most rapidly rising condition associated with disability (just behind diabetes at 135% and dementia at 84%). In the recent update of Global Burden of Disease, (GBD 2013), figures estimated that 242 million people were living in the world with symptomatic and activity limiting OA of the hip and /or knee, accounting for 13 million YLDs.^[3] Yet it is also recognized that these figures are likely to be an underestimate of the true global burden of OA,^[6] in particular as these rates only consider hip and knee OA, not OA at other sites. Obviously, the economic burden on patients and society is high in every country owing to this disease.

OA is associated with a range of levels of severity of disability from mild impact, when it may cause intermittent pain with only minimal difficulty performing daily activities, to severely disabling chronic pain and loss of function, often with associated decline in mental health when a person is no longer able to walk or live independently.^[7-10] The pain and loss of mobility associated with OA becomes more apparent as people

age and hence people with OA are denied the right to healthy ageing.

It is also a fact that OA is associated with increased comorbidity. A recent systematic review found people living with OA had a pooled prevalence for overall cardiovascular disease pathology of 38.4% and were almost three times as likely to have heart failure or ischemic heart disease compared with matched non-OA cohorts. In addition, OA significantly limits a person's ability to self-manage other conditions, such as diabetes, hypertension and coronary heart disease given that OA related pain is associated with reduced physical activity. Further, the presence of these comorbidities may present contraindications to the use of existing OA therapies such as NSAIDs.

One more alarming feature of this disease entity is that it is associated with increased mortality, both directly as well as due to its associated comorbidities. Compared with the general population, people with OA had a 55% increase in all cause mortality.

Although, there are numerous non-pharmacologic and pharmacologic interventions,^[11] that have been shown to reduce pain and improve function and quality of life among patients with OA,^[12] the curative treatment/strategy is lacking till today. We are not even in a position of reducing the progression from early to end-stage OA. Moreover, the available medications carry a risk of morbidity and mortality due to adverse effects of the interventions. Non-steroidal anti-inflammatory drugs (NSAIDs) have been associated with a clinically relevant twofold to fourfold increases in the risk of myocardial infarction or cardiovascular death compared with placebo.^[13,14] Total joint replacement surgery (TJR), a treatment for end-stage OA, also does not offer persistent hope owing to its limitations, complications, co morbidities etc.

In this way, to effectively address the rising burden of OA, there is an urgent need for the exploration of treatment/management strategy that might intervene in the pathophysiology and progression of OA.

Worldwide increasing prevalence, bad impact on quality and productivity of life and insufficient outcome of available Allopathic treatment modalities coupled with their substantial risk for serious adverse effects are necessitating the other health systems to provide a remedial treatment.

Role of Ayurveda

Ayurveda is not only free from the consequence of these treatment-related adverse events, but it is also effective, friendly, safe and cheap. Additionally, it is also helpful to prevent disease progression, minimize disability, improve the quality of life and also to set right the causative factors which lead to formation of OA. Hence,

the adoption of Ayurveda must be considered as the need of the hour for the management of this disorder.

On the basis of similarities in etiological factors and clinical features, Osteoarthritis may be correlated with **Sandhigata Vata** described in Ayurveda and should be treated accordingly. Such treatment should incorporate a holistic approach.

Under the chapter of Vata Vyadhi, Acharya Charaka has mentioned the disease by the name of "*Sandhigata Anila*" having the symptoms of Sotha (swelling), which is palpable as an air-filled bag (*Vata Purna Driti Sparsha*) and pain on flexion and extension of the joints (*Akunchane Prasarane Vedana*).^[15]

Pathophysiology of Sandhigata Vata

Sandhigatavata denotes aggravation of Vata-Dosha affecting articular structures leading to joint failure. Increase of Vata-Dosha is known with the aging process besides diet and lifestyle complementary to Vata-Dosha properties. However, in the human system aggravation of Vata-Dosha in general may occur either due to Dhātu-Kshaya (degenerative tissue changes) or due to Margavarodha (obstructive pathogenesis). In the context of Sandhigatavata; Asthi-Dhātu-Kshaya (loss of bone and cartilage structure) is impeded due to hypo-functioning and derangement of Asthi-Dhatvagni (bone and cartilage related assimilative process). This adversely affected homeostasis at the level of Asthi-Dhatvagni coupled with independently aggravated Vata-Dosha; increases catabolic process leading to degenerative changes in the joint structure (Sandhi-Hanana). Margavarodha (obstructive pathogenesis) often is caused due to Ama (unassimilated toxic residue) and association of which often leads to immunoinflammatory pathology.

Management of Sandhigata Vata (Osteoarthritis)

Ayurveda has various treatment modalities in treating OA. Type of treatment and its duration depends purely on the basis of severity of the disease. In general, the treatment/management of OA can be presented as follows:

1. **Snehana i.e.** Internal administration of ghee or oil: This includes oral administration of ghee or oil processed with bitter and astringent herbs.
2. **Abhyanga** (oleation therapy) –Anointing of the body with medicated oils. Mahanarayana taila, Laghu Vishagarbha Taila, Mahamasha Taila are some of the names effective in this disorder.
3. **Svedana**- It implies steaming and other heating procedures capable of producing sudation in the body.

Following are some examples of Svedana effective in the disease under discussion:

- *Vashpa Svedana* (fomentation therapy with evaporation).

- *Patrapinda sveda* (fomentation therapy with bolus of various medicinal herbs)
- *Shasitka Shali Pinda* (fomentation therapy with special rice along with various medicinal herbs)
- *Upanaha Sweda* (fomentation therapy with application of Herbal paste)

3. Mridu Virechana (Medicated purgation): It is a cleansing method, performed by giving some herbal purgatives which helps to regain power of fire principle.

4. Basti– (Therapeutic Enema)- This is a procedure designed to clean the lower alimentary canal and bring about cleansing of Srotasa (subtle channels) spread all over the body. This is very effective in removing abnormally increased Vatha principle. Special ingredients may be added to it making it a Brimhana Basti which can cause regeneration of affected joints. Janu Basti is useful in the treatment for OA in Knee joint, while Greeva Basti shows its efficacy in OA in cervical area. Niruha Basti and Matra Basti may also be used as per the need.

5. Lepa-This is the external application of paste of various herbal powder to reduce pain, oedema and burning sensation etc. by virtue of its ingredients.

6. Dhara (Pouring of medicinal liquids): Dhara or pouring of warm herbal decoction, medicated milk (Ksheera kashaya) over affected joints for 45-50 minutes is useful. This procedure can reduce pain and oedema within hours, this has been observed by innumerable users.

7. Rasayana (Immunomodulatory and rejuvenation therapy) - This is the consumption of Ayurvedic medicines having known property of immunomodulation and rejuvenation inherent in it. This is relevant and potentially useful in the treatment of OA. Pippali Rasayana Triphala Rasayana Shilajeet Rasayana Bhallataka Rasayana are some of the effective examples.

8. Agnikarma (therapeutic heat burn)-It is an effective non-pharmacological, parasurgical procedure for pain management in *Sandhigata Vata*. It is mostly carried out with the help of *Rajata* and *Loha Dhatu Shalaka*.

9. Jalaukavacharana (leech therapy): This is a type of *Raktamokshana* i.e., bloodletting which is one of the ancient and important parasurgical procedures described in *Ayurveda* for treatment of various diseases. The beneficial effect of this procedure revolves around the saliva of leech containing numerous biologically active substances, which have anti-inflammatory as well as anaesthetic properties.

10. Internal medications

Ayurveda offers “safe and effective treatment alternatives” for OA. Following are some of the

Ayurvedic medicines (with their dosage forms) to be taken internally by the OA sufferers:

- Kwatha: Dashamula Kwatha, Rasnadi Kwatha etc.
- Guggulu: Yogaraja Guggulu, Punarnavadi Guggulu, Panchatikta Ghrita Guggulu etc.
- Churna: Ashwagandha Churna, Guduchi Churna, Shallaki Churna etc.
- Ghrita: Ashwagandha Ghrita, Amritaprash Ghrita etc.

11. Diet and lifestyle modification

Following diet and lifestyle modification may play a pivotal role in the management of the disease:

- Avoiding diet with Tikta (bitter), Kashaya (astringent), Katu (pungent) Rasa and Sheeta Veerya (cold potency).
- Regular practice of Abhyanga (massage).
- Avoiding long standing, walking long distance etc.
- Maintaining a healthy weight
- Avoiding joint injury
- Proper and regular exercise
- Intensive education related to joint health
- Social awareness via different media.

Preventive measures

Avoiding or minimizing the use of Tikta, Kashya, Katu rasa and sheeta virya ahara especially Rasayan Sevana (intake of rejuvenation medicine) before 45 years Regular practice of Abhyanga (massage) Navarakhizi (Rice pudding massage) or Phizichil (Oil pouring) once in year after 40 years of age Avoiding jerky movements Avoiding continuous and excessive use of one joint Avoid long standing, walking long distance Maintaining a healthy weight may be the single most important thing you can do to prevent osteoarthritis Protect your joints from serious injury or repeated minor injuries to decrease your risk of damaging cartilage. Exercise can help reduce joint pain and stiffness. Light- to moderate-intensity physical activity may prevent a decline in, and may even restore, health and function. Lifestyle Changes-Many physicians suggest first trying lifestyle changes to reduce stress on affected joints. Physical therapy and supportive devices can be helpful. Intensive education on how to protect and care for an osteoarthritic joint may help patients avoid multiple visits to their doctor and translate into substantial long-term savings. Occupational Changes-Once osteoarthritis has been diagnosed, patients should reduce shock to the affected joint. Hammering away at deteriorating cartilage is likely to speed up the degeneration. People in occupations requiring repetitive and stressful movement should explore ways to reduce trauma. Adjusting the work area or substituting tasks that produce less stress on joints helps reduce shock Preventive measures: Avoiding or minimizing the use of Tikta, Kashya, Katu rasa and sheeta virya ahara especially Rasayan Sevana (intake of rejuvenation medicine) before 45 years Regular practice of Abhyanga (massage) Navarakhizi (Rice pudding massage) or Phizichil (Oil pouring) once in year after 40 years of age

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DISCUSSION

The role of Ayurveda in the management of OA cannot be overemphasized, since it takes into account the holistic approach comprising of detection and subsequent avoidance of etiological factors as well as breakdown of pathogenesis by the use of therapeutic agents supplied with ingredients capable of producing the desired results.

Ayurveda recommends use of Panchakarma therapy for getting rid of the symptoms of the disease. Snehana and Swedana (with Dashamoola taila and Dashamoola kwatha) help in Sandhigata vata with their inherent Vatashamaka, Balya and Anulomana properties. In other words, the Snehana and Swedana help to maintain body tonicity therefore strengthening muscle, ligament and tendon flexibility. The Abhyanga process prevents the wear and tear phenomenon or the degenerative changes of the body akin to that by the use of proper application of oil in the axel of a wooden wheel¹⁶. On the other hand, Janu basti lubricates fluid in joint and maintains integrity of the bony frame, boost blood circulation, nourishes knee joints and enhances mobility of knee joints.

Drugs used for *Virechana* are *Ushna* (hot), *Tikshna* (sharp), *Sukshma* (penetrating), *Vyavayi* (pervading) and *Vikashi* (loosening). By virtue of their own potency, they reach the heart and by circulating through the various vessels, affect the toxin mass in the body. Because of the *Agneya* (fiery) nature they liquefy the adhered toxin-mass, disjoin it due to sharpness and consequently the disjoined toxic mass floating in the uncted body like honey in uncted vessel reaches the stomach owing to the penetrating nature to be propelled out¹⁷.

The benefits of Jalaukavacharana in OA sufferers may be credited to the various pharmacologically active substances like hirudin, hyaluronidase, kallikrein, and tryptase inhibitors, various other proteinase inhibitors, and anaesthetics etc present in the leech. Anti nociceptive effects and counter irritation by leech may also contribute up to some extent. Additionally, placebo effect might be responsible for the same.^[18-22]

Agnikarma abolishes the joint pain of OA by virtue of its *Ushna* guna,^[23] (hotness) which is also capable of removing the *Avarana* effectively and substantiating the effect. The superiority of *Agnikarma* is in treating *Stambha* (stiffness) is well established from the very beginning.^[24] As per the conventional medicine, therapeutic heat increases blood circulation at knee joint leading to the proper nutrition of the tissue. This induced circulation helps to flush away pain producing substances from affected site and ultimately reduces the local inflammation.^[25]

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