



Review Article

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THERAPEUTIC USE OF ASHWAGANDHA ON SANDHIVATA: A LITERARY REVIEW

Dharmendra Mondal ^{1*}, Ajay Kumar ¹, Alok Ranjan ², Ganesh Prasad Gupta ³

¹ PG Scholar, Dravyaguna Department Government Ayurvedic College, Kadamkuan, Patna, Bihar, India

² Assistant Professor, Dravyaguna Department Government Ayurvedic College, Kadamkuan, Patna, Bihar, India

³ Associate Professor, Dravyaguna Department Government Ayurvedic College, Kadamkuan, Patna, Bihar, India

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*Corresponding author

E-mail: drdharmendra292012@gmail.com

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ABSTRACT

Today's fastest, struggling, vigorous hard-working, and stressful lifestyle makes us more susceptible to geriatric diseases and is now a day common in the young generation. One of the most common diseases associated with age is osteoarthritis, with symptoms of joints pain and loss of natural joint form due to degeneration of cartilage, decrease in synovial fluid and abnormal remodelling of bones. In Ayurveda, osteoarthritis is correlated with sandhivata. With age, all Dhatus undergo Kshaya, thus leading to Vataprakopa and making individuals prone to many diseases in old age. Among them, Sandhivata is the most common. Etiopathology of osteoarthritis is not well known yet, but many studies give an idea about osteoblast, osteoclast, osteocyte, synovial inflammation and macrophages in cartilage degeneration and bone remodelling. Ashwagandha is an essential plant discussed in Ayurveda as an immunomodulator, anti-inflammatory and Rasayana property. Rasayana is described in Ayurveda as ojavardhak, which means boosting Ojas or enhancing the body's immune system and imparting Vyadhikshamatva.

Keywords: Ashwagandha, Rasayana, sandhivata, osteoarthritis, osteoblast cell, osteoclast cell.

INTRODUCTION

Ayurveda is the oldest system of medicine globally and gaining popularity in treating chronic diseases. Ayurvedic Herbal Treatment is mainly accepted as safe and effective in the treatment of osteoarthritis. Osteoarthritis is the most common disease found in old age, and in Ayurvedic Samhita, osteoarthritis is considered sandhivata. According to different Acharya, sandhivata is a kshaya roga and thought Jaragat Vyadhi due to dhatu kshaya in older age and Nidansevan.

Many plants in Ayurvedic texts have anti-inflammatory properties, but Ashwagandha has specific anti-inflammatory, anti-tumour, antistress, antioxidant, immunomodulatory, Haemopoietic, rejuvenating and Rasayana properties. It also positively influences the endocrine, cardiopulmonary, and central nervous systems.

The association between Osteoarthritis and ageing is nonlinear. The prevalence increases exponentially beyond 50. About 80 to 90 % of individuals of both sexes have evidence of osteoarthritis by reaching 65 years old.

Osteoarthritis is a cartilage degeneration and abnormal bone remodelling disease where osteoblast, osteoclast, osteocyte and macrophages play a significant role. Osteoclasts are derived from the same stem cells that produce macrophages.¹

Sandhivata: In Ayurveda osteoarthritis is correlated with Sandhivata. In vridhavastha, all dhatu undergo kshaya means degeneration, thus leading to vataprakopa that develops the symptoms like sandhishula (joint pain), Sandhishoth (swelling), Akunchan prasaranjanya vedana (pain on movement), sandhivishlesh / stambhan (kriyahani), sandhisphutan (crepitation sound) and sparshashayanta (tenderness on touching)².

Osteoarthritis: Osteoarthritis (OA) is also called degenerative joint disease. It is the most common type of disease prevalent in society and a significant cause of disability in old age. Osteoarthritis is a condition where a pathological imbalance of regeneration, degeneration of bone cartilage and secondary inflammatory changes are seen in synovial joint³.

Literature Review

In classical texts, sandhivata is not mentioned. Acharya Charaka cited sandhivata as sandhigata anila⁴ and said about symptoms but not the treatment. Acharya Sushruta displays symptoms and line of therapy in vatavyadhi adhyaya⁵. Acharya Vagbhata and Vagbhata follow statements of Acharya Charaka and Acharya Sushruta on signs and line of treatment of sandhivata⁶. Acharya Bhela mentioned about Asthi-Majjagata Vatavyadhi, whom he described as Sandhi Vicyuti. Madhavakara mentioned Atopa (crepitus in joint)⁷ Bhava Mishra in Bhavaprakasa said as Sandhivata in Vata Vyadhi adhyaya⁸.

Yogaratanakara mentioned diagnostic and treatment aspects of disease without any specific addition to the knowledge⁹.

Samprapti of sandhivata

Samprapti of Sandhivata follows three ways according to the Nidana of Vata Prakopa.

- (1) Dhatu kshyajanya.
- (2) Avaranjanya.
- (3) Swa nidana Sevenajanya.¹⁰

According to Acharya Charaka, vyan, vayu disturb due to nidana sevana, and kshaya in old age enters into sandhi. Acharya Charaka mentions that the Khavaigunya is mainly due to Empty Srotas.

Prakupit vata disturbs the normal aetiology of sandhi's and causes sandishula, sandhisoth, Akunchan prasaranjanya vedana.

Etiopathology of osteoarthritis

Etiopathology of osteoarthritis is unknown, but many studies are done on the pathological imbalance of osteoblast¹¹, osteoclast¹², osteocyte, and macrophages¹³. The causes deregulation in degenerative and reparative processes of joints. The causes are decreased joint space, swelling of joints, and osteophytes formation.

Etiopathology of Diseases progression of osteoarthritis is as¹⁴

1st stage (minor) with pain, stiffness, and discomfort due to general wear and tear and small bony spur associated with nutritional deficiency and nidān sevān.

2nd stage (mild) knee joints will show more bone spur growth, but the space between the bones appears normal.

3rd stage (moderate) Symptoms of the 2nd stage are advanced with the cartilage of the affected area starting to erode and narrowing of joint space. The joints become inflamed and painful in general routing work.

4th stage (severe) In this stage, cartilage is severely destroyed, leading to an inflammatory response from the joints. Bony spurs (osteophytes) that develop in the early stage know multiplied, causing severe pain on walking and producing loud crepitation sounds.

The stages of OA are diagnosed by simple x-ray film. The differential diagnosis with Rheumatoid arthritis (Aam vata) and Gout (Rakta vata) by laboratory findings like ESR, CRP, RA-Factor, HLA 27, Uric acid, etc.

Ayurvedic management of sandhivata

Sandhivata is a disease of Asthivaha, Majjavaha, and Medovaha srotas janaya. Ayurvedic herbs and their preparation cure the diseases by establishing equilibrium between tridosh (vata, pitta and kapha) and maintaining sapta dhatu (Ras, rakta, mansa, meda, asthi, majja and shukra). According to study, abnormal activation of the immune system alters the balance between osteoblast and osteoclast, which result in deregulation in Bone remodelling and cause osteoporosis. Thus, these osteoblast and osteoclast have a vital role in the abnormal remodelling of bone by spur/osteophytes formation.¹⁵

Ayurvedic medicinal plants like Ashwagandha have remarkable biological effects, especially anti-inflammatory, chondroprotective, and immune-modulator activity that is relevant and potentially useful to treating kshayaj roga like sandhivata or osteoarthritis. Ashwagandha is a Rasayana Aushadhi, which Acharyas use to treat immune-modulator, inflammatory and degenerative disorders^{16,17}.

Drug Review

Ashwagandha is a plant giving power (gati) like a horse, and its leaves look like pigs' ears. The drugs promote sexual potency, complexion, and strength due to their Balya, Vrisya and Rasayana properties and representative drug of Astavarg (Kakoli and kshirkakoli). It is helpful in vata disorder.¹⁸

Scientific classification

Kingdom: Plantae
Family: Solanaceae
Genus: *Withania*
Species: *somnifera*

As Per Ayurveda

Kula - Kantkari

Gana

1. Charaka Samhita: Balya, brihaniya mahakashaya, Madhurskand
2. Bhavaprakasa Nighantu: Guduchyadi varga

Varieties

1. Ashwagandha (wild variety), Latin name - *Withania somnifera*, Family: Solanaceae
2. Nagauri Ashwagandha (cultivated variety), Latin name - *Withania ashwagandha*, Family: Solanaceae

Botanical Description

It is an erect shrub stem, 0.5-2 m high. Branches- Distributed in all directions and rounded. Leaves-Alternate, 5-10 cm long, rounded and hairy. Flower: - Inflorescence in the bunch, umbrella erupting from the base of the leaves, sessile flower, greenish or lurid yellow cyme are axillary, Fruit- small, round, juicy capsulated bright red like Gunja, so also called Dhorgunja. Seed- The seeds are small, slimy, and red. Root- Roots are 3-7 cm long and thick as a finger, grey from the outside and white from the inside. Tender wet roots smell like a horse, so it is called Ashwagandha.¹⁹

The flowering session is Sharad ritu {i.e., approximately October-November} and then plant fruits.

Origin and Distribution

India's North-western and central part is found in waste places or areas of upper Gangetic plain, West Bengal, Bihar, Orissa, Gujarat, Konkan coast, Deccan and Karnataka. It grows in the semitropical area receiving 500-700 mm rainfall. Commercially cultivated in Madhya Pradesh (Nagauri), Gujarat, Haryana, Maharashtra, Punjab, Rajasthan, and Uttar Pradesh are the leading producing state.²⁰

Synonyms

Gatrakari, Turagi, Balya, Vajkari, Vajigandha, Varahkarni, Turagnagnadha, Hayagandha, Kusthagandha.

Acharya Charaka and Vagbhata have called it a Hayagandha or Hayahvaya.

Vajigandha is the synonym used by Sushruta and Vagbhata but not by Charaka.

Vernacular Name

Hindi - Asgandh
Kannada - Hiremaddinagida
Tamil - Amukkaramkizangu
Malyalam - Ammukkuram
Telgu - Pennerugadda
English - Winter cherry^{21,22}.

Ayurvedic property

Rasa - Tikta, Kashaya
Guna - Laghu
Virya - Usna
Vipaka - Madhura
Karma - Vata-Kaphahara, Balya, Rasayana, Sukrala.²³

Indication - Sotha, Kshaya, Daurbalya, Vataroga, Klaihya.²⁴

Cultivation Method and Time of Collection

The root of Ashwagandha is mainly used in the Indian system of traditional medicine like Ayurveda and Unani. It grows in sandy loan, light red soil or black soil of PH approx. 7.5 to 8.0 with the sound Drainage system. Healthy seedlings are planted in 30 cm spacing for better yield in the late rainy season (month of July-August). The semitropical area receiving 500-700 mm and one or two rainfalls in the winter is suitable for better root development.

The temperature required for good production is 20 to 30 degrees centigrade. Flowering and bearing of fruits in December.^{25,26}

Harvesting: Maturity of the plant is judged by drying out of leaves and yellow, red Berries in approx. 150-180 days.

Quality of Root

Root piece can be graded in 3-4 grades as per its length and thickness.

A grade Root - Root pieces are up to 7 cm and diameter 1.0-1.5 cm, solid, Bright or pure white.

B grade Root - Root piece up to 5 cm and diameter 1 cm, bright and White.

C grade Root - Root piece up to 3-4 cm in length, diameter less than 1cm, solid and side branches.

Lower-grade Root - Small root piece, semi-solid, very thick, yellowish, Chopped root.

Cultivated variety - The presently cultivated varieties are poshita, WS-20, WS-27-7, WS-23-55, WS-10-28, WS -10-28, WS -27-58 etc.

The Jawaharlal Nehru Krishi Vishwa Vidyalaya, Madhya Pradesh, has released one high alkaloid variety, "JAWAHAR", short in status and most amenable for high-density planting. Total Withanolides content is 0.30 per cent in dry roots.

Formulations

Ashwagandhadi churna, Ashwagandha ghrita, Ashwagandha Rasayana, Ashwagandha-rishta, Saraswata churna, Nagabala ghrita.²⁷

CONCLUSION

It is found that sandhivata occurs mainly in old age due to kshaya in sapta dhatu, especially in Medovaha, Majjavaha, and Asthivaha dhatu. According to etiopathology, alterations in activation of the immune system are involved in inducing deregulation of osteoblast, osteoclast, osteocyte and macrophages functions, bone remodelling, and mineralisation, leading to osteoarthritis. Ashwagandha is a Rasayana Aushadhi, which Ayurvedic scholars use to treat immune-modulator, inflammatory and degenerative disorders by action on microenvironments of bone marrow. Understanding the osteoarthritis pathogenesis and samprapti of sandhivata, dhatu kshaya, dhatu poshan channel, and Rasayana therapy could develop new therapeutic strategies to treat this disease.

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