

Benefits of *Chandraprabha Vati* in *Sandhigatvata* with special reference to Osteoarthritis

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ABSTRACT

Sandhigatvata is a Vata disease and it mainly occurs in Vriddhavastha due to Dhatukshaya, a chronic degenerative disorder. It is incredibly prevalent in society and is a significant cause of disability. Therefore, treating Sandhigatvata / Osteoarthritis effectively is important as treatment explained in modern medical science is limited to symptomatic relief. However, ancient ayurvedic principles and medicines can help to delay or pause the symptoms and pathogenesis. In this article, a positive experience regarding Chandraprabha Vati in the treatment of Sandhigatvata is revealed. Chandraprabha Vati was prescribed in few Sandhigatvata patients at R.A.Podar Hospital OPD for 3 months. Patients consumed two tablets of 250 gram of Chandraprabha Vati two times a day. The results in few patients were encouraging. So, earnest recommendation of conduction of clinical trial to confirm the utility of Chandraprabha Vati in the treatment of Sandhigatvata.

Key Words *Osteoarthritis, Sandhigatavata, Chandraprabha Vati*

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INTRODUCTION

According to Ayurved, various physiological changes occur at Tridoshas, Saptadhatus, Malas, Srotas, Indriyas, Agni, and Ojas in the aging process. On the other hand, Vata dosha and agnimandya dominate the aging process leading to improper nourishment of various body entities¹. All Dhatus undergo Kshaya /depletion, making individuals prone to many diseases. Thus particularly Mansa, Asthi dhatu, and Sira, Sandhi structures degenerate and develop Sandhigatvata. Joints and their associate structures get deteriorated due to age, overuse, and damage.

Thus, the joint functions get altered, and the joints develop shool (pain), shopha (swelling), and stambh (stiffness) in them while medicines that balance Vaata dosha and strengthen mansa, asthi dhatu, and Sira, sandhi /joint help in recovery from Sandhigatvata symptoms. Sharangdhar Samhita has quoted Chandraprabha Vati in Guggulu chapter with its benefits like sarvarogpranashini, balya, rasayani, tridoshhara, etc. Chandraprabha vati is beneficial in ailments like pramehas, mutra vikaras, granthi, arbuda, shwasa, kasa, vicharchika, pandu, kamla, arsha, kandu, bhagandara, and netraroga, mandagni,

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aruchi, artavruja, katishula, dantaroga, etc. In January and February 2021, Chandrabhabha Vati was prescribed to some patients from R.A. Podar OPD for Sandhigatvata. These patients showed positive results. Clinical trials of the same can validate these positive results. Thus, Chandrabhabha Vati may help harmonize the functions of Vata and Kapha dosha, Shlemadhara Kala, and all associated structures of the joints along with potent nutritious power, regeneration capacity and may prove potent/beneficial in treating Sandhigatvata.

What is an Osteoarthritis?

Osteoarthritis is the clinical and pathological outcome of a range of disorders resulting in synovial joints' structural and functional failure. Traditionally, it has been considered a disease of articular cartilage. However, the current concept holds that osteoarthritis involves the entire joint organ, including the subchondral bone, menisci, ligaments, periarticular muscle, capsule, and synovium. So, it is a disease of the whole joint, not just cartilage. The clinical presentation helps diagnosis of osteoarthritis and radiography supports in diagnosis. The main features that suggest the diagnosis include pain, stiffness, reduced movement, swelling, crepitus, and increased age (unusual before age 40) without systemic features (such as fever) ².

Symptoms and some critical factors of Osteoarthritis and Sandhigatvata are similar; hence scope and prevalence of osteoarthritis are considered here in this article to understand the same for Sandhigatvata.

Scope of Osteoarthritis

Osteoarthritis (OA) is the most common, complex musculoskeletal disease of ache, disability globally. Osteoarthritis (OA) is estimated to be the eleventh leading cause of disability worldwide ³.

It is the prominent cause of decreased or limited activities and expensive treatment. In addition, the complexity of the disease creates a challenge for diagnosis and management. The condition commonly affects the knee but can affect the hips, hand, shoulder, and other joints.

According to WHO, contributors to the overall burden of musculoskeletal conditions mainly include low back pain, fractures with 436 million people globally, and osteoarthritis 343 million. Women are more prone than men, and its prevalence rises with age.

Prevalence of Osteoarthritis:

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE Guidelines Osteoarthritis: assessment and management (update) 1st May 2019 mentions that the prevalence of osteoarthritis is increasing. Osteoarthritis harms daily activities, quality of life, health outcomes, and people's physical, social and emotional energy. It seriously affects their family and working life ⁴.

Osteoarthritis requires an additional cost of living for people with osteoarthritis. In the UK, approximately 8.75 million people aged 45 years or more have sought treatment for osteoarthritis. In 2018 there were over 70,000 hip and 75,000

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knee replacements undertaken in the NHS, primarily for osteoarthritis⁵.

According to WHO, 9.6% of men and 18.0% of women over 60 years have symptomatic osteoarthritis. Approximately 80% of people with osteoarthritis will have limitations in movement, and 25% cannot perform their major daily activities.

Osteoarthritis is the second most common rheumatologic problem, and it is the most frequent joint disease with a prevalence of 22% to 39% in **India**. Moreover, OA is more common in women than men. Nearly 45% of women over 65 have symptoms, while 70% of those over 65 years show radiological evidence of OA⁶.

Diagnosis of Sandhigatvata and Osteoarthritis:

In sandhigatvata, vata gets vitiated in sandhithana. So patients should be treated with appropriate treatment / chikitsa taking both the dosha (vata) & sthana into consideration. Acharyas like Charak, Sushrut, and Madhava have mentioned the following symptoms of Sandhigatvata.

List of Sandhigatvata symptoms and their meaning:

Sandhigat shool (Joint pain),
Sandhigat shopha (Joint oedema),
Prasaranaakunchanayopravrutishcha savedana (painful flexion and extension),
Sandhi vishleshah (Loosening, separation, destruction of the any joint)
Sandhi stambha (Joint stiffness)
Sandhi aatopa (Swelling of a joint)

Sandhigat sphutanvat shabdapravrutti (crepitus) in the joint⁷.

Factors like old age, lifestyle changes, excessive exercise, history of the accident, family history, vata special food items develop imbalance the vata dosha, which blows on weakened knee joints and develops pain, oedema, and stiffness in it.

Clinical features of Osteoarthritis:

Joint pain with activity

Transient stiffness in the morning or after rest

Reduced range of motion

Joint crepitus or periarticular tenderness, or both

Bony swelling are the clinical features of Osteoarthritis.

Diagnosis and Investigation: The diagnosis of osteoarthritis can usually be made clinically and then confirmed by radiography. The main features that suggest the diagnosis include pain, stiffness, reduced movement, swelling, crepitus, and increased age (unusual before age 40) without systemic features (such as fever)⁸. Typically osteoarthritis presents as joint pain. The joint pain of osteoarthritis is generally described as exacerbated by activity and relieved by rest. In the more advanced phase of the disease, it is painful at rest and night. The source of pain is not particularly well understood and can be biopsychosocial⁹. Of the local events in the joint, loss of cartilage probably does not contribute directly to pain as it is aneural. In contrast, the subchondral bone, periosteum, synovium, and joint capsule are all richly enervated and could be the source of nociceptive stimuli in osteoarthritis¹⁰.

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Risk Factors of Osteoarthritis:

The risk factors of OA can be divided into person-level factors, including age, gender, obesity and genetics and diet, and joint-level factors, including injury and abnormal loading of the joints. Knee malalignment is the strongest predictor of progression of knee OA.

Person-level risk factors

Age: It may be the leading risk factor of OA. The suspected mechanism leading to joint damage is poorly understood but is probably multifactorial (including oxidative damage, thinning of cartilage, muscle weakening, and a reduction in proprioception).

Gender: The prevalence of hip, knee, and hand OA is higher in women than men, and the incidence increases around menopause, which is however, a conflicting result.

Obesity: Obesity, defined as body mass index (BMI) > 30 kg/m², is strongly associated with knee OA whereas the relationship between overweight (BMI > 25 kg/m²) and knee OA is lower but still significant. Framingham study estimated that weight reduction by 5 kg decreased the risk of developing knee OA by 50%. The relationship between body weight and hip OA is inconsistent and weaker than with knee or hand OA.

Genetics: Genetic factors account for 60% of hand and hip OA and 40% of knee OA.

Diet: Several dietary factors suspected to increase the development of OA include a low level of vitamins D, C and K. However, further

studies are needed to better define the association between OA and these dietary factors.

Joint-level risk factors: Injury: the knee is one of the most frequently injured joints. The rupture of the anterior cruciate ligament (ACL) leads to early-onset knee OA in 13% of cases after 10 to 15 years. However, when such rupture is associated with damaged cartilage, subchondral bone, collateral ligaments, and/or menisci (observed in approximately 65–75% of ACL-injured knees), the prevalence of knee OA is higher, between 21% and 40%.

Abnormal loading of joints: Data suggested that repetitive joint use was associated with the development of OA. Knee OA was more frequently observed in people with occupations that required squatting and kneeling, whereas hip OA was associated with prolonged lifting and standing. Briefly, highly repetitive, intense, and high-impact physical activity seems to confer an increased risk of developing radiographic hip and knee OA compared with controls, but whether this association is due to only sports participation or results from an injury is unclear.

Mal-alignment: Abnormal alignment is strongly associated with increased structural degradation in the compartment under the greatest compressive stress¹¹.

Sandhigatvata Samprapti in Ayurved: Ayurveda considers ruksha, laghu, shit ahar-vihar, other hetu /causes, and vridhdavstha vitiate the vata dosha, decrease the kapha dosha, and upset the digestive fire. Vitiating Vata vitiates the weakened asthi dhatu and also enters into sandhi/joints to

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produce sandhigatvata. According to the qualities of the hetu, the symptoms appear in the Sandhi.

Sandhigatvata Ayurvedic Treatment:

Modern medical treatment can't reverse the damage that appears due to osteoarthritis. However, it can reduce pain and help you to move better. Ayurvedic treatment of Sandhigatvata helps to reduce the symptoms. It strengthens the joint and associated structures. Sandhigatvata is a jara vyadhi, a vata dominant and degenerative disease, and ayurvedic remedies help balance the Vata dosha, repair, and regenerate the damaged tissues. Thus it is phenomenal towards degenerative, chronic diseases like Sandhigatvata.

Osteoarthritis and Inflammation:

According to George Ehrlich's paper titled "Osteoarthritis beginning with inflammation: definitions and correlations", inflammation is an important component of osteoarthritis. Ehrlich described a cohort of predominantly menopausal females who presented with deforming and inflammatory osteoarthritis and controlled most patients with standard anti-inflammatory medications. Currently osteoarthritis is defined as a condition of synovial joints characterized by cartilage loss and evidence of accompanying peri-articular bone response. Examination of synovial tissues from patients with osteoarthritis clearly shows inflammation, though this is not as aggressive as in inflammatory arthropathies such as rheumatoid arthritis¹². From the time Celsus (30BC-38 AD) characterized inflammation by its four cardinal signs rubor (redness) calor

(increased heat), tumor (swelling), dolor (pain), and the fifth sign function laesa (loss of function) was added by Virchow in the 19th Century. When tissue health is not restored, inflammation becomes a chronic condition that damages the surrounding tissue. Osteoarthritis treatment is based on these signs of inflammation and upset tissue health¹³.

Ayurved and Inflammation: Inflammation has different names in Ayurveda like Shotha, Shopha, Svayathu, Utsedha, and Samhata. Modern medicine says that chronic inflammation is a cardinal sign of chronic degenerative disorders. It considers inflammation as a symptom or rather a healing response of the body in wounds and develops due to obstruction in micro channel circulation. Ayurveda considers and treats inflammation as a cause, symptom or complication of degenerative conditions. As stated in Ayurveda Aama, a toxic by-product of improper digestion blocks the Strotas / micro channels. Aama has pro inflammatory properties and is a chief patron of the Strotodushti.

Inflammation in Ayurveda is known by different names in different contexts namely Shotha, Shopha, Svayatu, Utsedha and Samhata. Chronic inflammation is a cardinal sign of chronic degenerative disorders. Inflammation and oedema associated with it is duly recognised in Ayurveda as a pathological manifestation. While modern medicine considers inflammation as a symptom or rather as a healing response of the body in wounds. Ayurveda

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treats the concept of inflammation as (a) symptom of a disease (b) an independent disease and (c) a complication of diseases. Degenerative diseases share a common pathological feature of inflammation. The disturbances in micro channel circulation in inflammation are due to Srotodushti (clogging of channels) by Aama (toxic waste of metabolism). Preventing Aama formation could hold the key to preventing chronic degenerative disorders. The paper

deals with the concept of understanding inflammation in Ayurveda and Modern medicine
Chandraprabha Vati in various Vikaras
:Chandraprabha Vati has various actions on the body, dhatus, organs and srotas. Sharangadhara Samhita mentions disease wise different indications of Chandraprabha Vati are addressed in Table 1¹⁴.

Table 1 Chandraprabha Vati in various Vikaras

No	Diseases Condition	Dosha	Dushya	Strotas
1	Prameha -20 types	Tridosha	Meda, Rakta, Shukra, Ambu, Vasa, Rasavaha, Oja, Lasika, Majja, Mamsa	Udakavaha, Medovaha, Mutravaha
2	Mutrakruchha, Mutraghat	Vata		Mutravaha
3	Ashmari	Vata-Kapha		Mutravaha
4	Vibandha, Anaha, Shoola	Vata		Purishavaha
5	Upadansha, Shukadosa	Tridosha		Shukravaha
6	Granthi	Tridosha	Rakta, Mamsa, Meda, Sira	Raktavaha, Mamsavaha
7	Arbuda	Tridosha	Rakta, Mamsa	Raktavaha, Mamsavaha
8	Katishoola	Vata		Asthivaha
9	Shwas, Kasa	Vata, Kapha		Pranavaha, Rasavaha
10	Vicharchika	Vata, Kapha		Rasavaha, Raktavaha
11	Andavrudhhi Vata Shukravaha	Vata		Shukravaha
12	Pandu	Pitta	Rakta, Mamsa	Rasavaha
13	Kamla	Pitta	Rakta, Mamsa	Raktavaha
14	Halimak	Vata, Pitta		Raktavaha
15	Kushtha	Tridosha	Twak, Rakta, Mamsa, Ambu	Rasavahavaha, Raktavaha, Mamsavaha
16	Arsha	Tridosha	Twak, Mamsa, Meda	Mamsavaha
17	Kandu	Kapha	Twak	
18	Pleehodara	Pitta, Kapha	Rakta	Raktavahavaha
19	Bhagandara	Vata	Mamsa	Mamsavaha
20	Dantaroga	Tridosha	Asthi	Asthivaha
21	Netraroga	Tridosha	Majja	Majjavaha
22	Artavruja	Vata	Artava	Artavavaha
23	Shukragata Dosha	Vata	Shukra	Shukravaha
24	Mandagni			Annavaha
25	Aruchi	Kapha	Rasa	Rasavaha, Annavaha

Table 2 Chandraprabha Vati ingredients and their properties:

Chandraprabha Vati Ingredients	Action	Indication	Doshghnata	Activity
1 Karpoora Cinnamomum	Vrushya, Chakshush	Daha, Trushna, Asyavairasya,	Kapha-pitta	

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	camphora (Linn.) Nees & Eberm.	ya Lekhana	Meda daurgandhya nashaka		
2	Shathi Hedychium spicatum Ham. ex Smith	Grahi	Shotha, Kasa, Vrana, Shwasa, Shoola, sidhma	Kapha, Vata	Hypotensive, hypoglycaemic, anti-inflammatory, vasodilatory, anti-bacterial, anti-fungal, spasmolytic, analgesic, anti-microbial
3	Shatavari Asparagus racemosus willd.	Rasayana, Netrya, Stanyakari, Balya, Shukrakari	Agnipushtida Gulma, Atisara, Shotha	Kapha-pitta	Anti-cancer, anti-fungal, anti-bacterial, diuretic, hypoglycaemic, hypotensive, anti-oxidative
4	Vacha Acorus calamus Linn.	Vanhikar, Vantakar, Shakrut- mutra vishodhini	Vibandha, Adhmana, Shoola, Apsmara, Bhutonmada, Krimi	Kapha, Vata	Sedative, analgesic, hypotensive, spasmolytic, anti-microbial, anti-bacterial
5	Musta Cyperus rotundus Linn	Grahi, Deepana, Pachana	Trushna, Jwara, Aruchi, Krimi	Kapha Pitta	Anti-inflammatory, Antipyretic, diuretic, smooth muscle relaxant, antimicrobial, estrogenic
6	Bhunimba Swertia chirayita (Roxb. ex Flem.) Karst. Kairata	Sara	Sannipataka Jwara, Shwasa, Kasa, Shotha, Trushna, Kushtha, Vrana, krimi	Kapha pitta	Anti-spasmodic, antiinflammatory, hypoglycaemic, hepatoprotective, anti-cancer, cardio stimulant, antidiabetic.
7	Amruta Tinospora cordifolia (Willd.) Miers ex Hook. f. &Thoms.	Guduchi Rasayana, Sangrahan a, Balya	Trushna, Daha, Meha, Kasa, Pandu, Kamala, Kushtha, Vatarakta, Jwara, Krimi, Prameha, Shwasa, Arsha, Hrudroga	Tridoshaghna	Hypoglycaemic, antibacterial, anti-inflammatory, antipyretic, analgesic, hepato-protective, immunomodulatory, anti-stress, anti-tumour, anti-oxidant, hypotensive, diuretic
8	Daruka Cedrus deodara (Roxb.) loud Devdaru		Vibandha, Aam Adhmana, Shotha, Tandra, Hikka, Jwara, Prameha, Peenasa, Kasa, Kandu	Vata and Kaphahara	Spasmolytic, antiinflammatory, anti-bacterial, anti-fertility, anti-fungal, anti-diabetic, immunemodulatory, analgesic
9	Haridra Curcuma longa Linn.	Varnya	Twak-dosha, Meha, Shotha, Pandu, Vrana	Kapha, pitta	Anti-bacterial, insecticidal, anti-inflammatory, anti-fertility, anti-protozoal, anti-fungal, hypocholesteremic antihepatotoxic.
10	Ativisha Aconitum heterophyllum Wall. ex Royle.	Pachana, Deepana	Atisara, Amavisha, Kasa, Vami, Krimi	Tridosha	Hypotensive, antifertility, psychostimulant, antidepressant, CNSinhibitor, anti-diabetic, antipyretic, anti-bacterial, analgesic.
11	Darvi Berberis aristata DC	Like Haridra	Netra, Karna, Asyaroga	Kapha pitta	Anti-tumour, hypoglycaemic, anti-cancer, anti-bacterial, anti-inflammatory, hypotensive.
12	Pippali Moola Piper longum Linn	Pachana, Bhedhi	Anaha, Pleeharoga, Gulma, Krimi, Shwasa, Kshaya	Kapha vata balance, Pittakara	Anti-bacterial, antiinflammatory, insecticidal, hypoglycaemic, antiulcerogenic, immunestimulatory, anti-spasmodic
13	Chitraka Plumbago zeylanica Linn	Pachana, Vanhikrut, Grahi	Grahani, Kushtha, Shotha, Arsha, Krimi, Kasa	Vata Kapha hara Pittakara	Anti-pyretic, appetiser, Anti inflammatory, uterotonic, anti-bacterial, anti-fungal, anti-fertility, anti-cancer, anti-tumour, hepatoprotective
14	Dhanyaka	Avrushya,	Trushna, Daha,	Tridosha	Spasmolytic, Anti-microbial

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	Coriandrum sativum Linn.	Mutrala, Deepana, Pachana, Jwaraghna, Rochana, Grahi	Vami, Shwasa, Kasa, Karshya, Vami		
15	Haritaki Terminalia chebula Retz.	Deepana, Medhya, Rasayana, Chakshushya, Aayushya, Brumhaniya, Anulomini	Shwasa, Kasa, Arsha, Prameha, Kushtha, Shotha, Udara, Krimi, Grahani, Vibandha, Vishamajwara, Anaha Gulma, Adhmana, Trushna, Chhardi, Hikka, Kandu, Kamla Pleeha-yakrut roga, Ashmari, Mutraghat Mutrakruhra	Tridosha	Anti-microbial, anti-fungal, anti-bacterial, anti-stress, hypotensive, hypolipidaemic, antispasmodic
16	Bibhitaki Terminalia bellirica Roxb	Bhedana, Netrahita, Keshya, Madakrut	Kasa, Krimi, Vaisvarya, Trushna, Chhardi	Tridosha	BP depressant, anti-fungal, anti-asthmatic, bronchodilator, anti-bacterial, anti-stress.
17	Aamalaki Emblica officinalis Gaertn	Vrushya, Rasayana Prameha, Raktapitta		Tridosha	Spasmolytic, Hypolipidaemic, antimicrobial, anti-oxidant, immune-modulatory, antifungal, anti-tumour, hypoglycaemic, antiinflammatory
	Triphala	Sara, Chakshushya, Deepana, Ruchya	Meha, Kushtha, Vishamajwara	Tridosha	
18	Chavya Piper chaba Hunter non-Blume.	Like Pippalimola	Gudajaroga		
19	Vidanga Embelia ribes Burm. f.	Vanhikara	Shoola, Adhmana, Udara, Krimi, Vibandha	Vata kapha	Estrogenic, hypoglycaemic, anti-biotic, anthelmintic, anti-fertility, antiinflammatory, hypotensive, diuretic, hepato-protective, immune-stimulant
20	Gajapippali Scindapsis officinalis	Vanhivardhini	Atisara, Shwasa, Kantharoga, Krimi	Kapha-Vata	Hypoglycaemic, antiprotozoal
21	Shunthi Zingiber officinale Rosc.	Pachani, Vrushya, Savya, Grahi	Amavata, Vibandha, Vami, Shwasa, Shoola, Kasa, Hrudroga, Shleepada, Shotha, Arsha, Anaha, Udara	Kapha-Vata	Anti-inflammatory, hypolipidaemic, antiemetic, anti-ulcer, anti-pyretic, antioxidant, anti-bacterial, IJPBA, Analgesic, hypoglycaemic, hepatoprotective
22	Maricha Piper nigrum Linn.	Deepana	Shwasa, Shoola, Krimi	Vata, Kaphahara, Pittakara	Anti-oxidant, sedative, analgesic, CNS depressant, muscle relaxant, antiinflammatory, hepatoprotective, anti-fungal, anti-ulcer, lipolytic
23	Pippali Piper longum Linn.	Deepan, Vrushya, Rasayani, Rechani, Medhya	Shwasa, Kasa, Udara, Kushtha, Prameha, Gulma, Arsha, Pleeharoga, Shoola, Jwara	Kapha, Vata	Anti-bacterial, antiinflammatory, insecticidal, hypoglycaemic, antiulcerogenic, immunestimulatory, anti-spasmodic
24	Trivrut Operculina turpethum (Linn.)	Rechana	Jwara, Shotha, Udara	Pitta, Kaphahara,	Anti-bacterial, antiinflammatory, anthelmintic, cardiac depressant,

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				Vatavardhaka	spasmodic to smooth muscle, and skeletal muscle
25	Danti Baliospermum montanum (Willd.) Muell.-Arg., Danti moolatwak Or Dantibeeja Sara	Sara, Deepana	Gudankura, Ashmari, Shoola, Kandu, Kushtha, Daha, Shotha, Udara, Krimi	Kapha-Pitta	Anti-asthmatic, anticancer, hypotensive, purgative
26	Patraka Cinnamomum tamala.		Arsha, Hrullasa, Aruchi, Peenasa	Vata Kaphahara	Anti-bacterial, hypoglycaemic, anti-oxidant, anti-fungal, anti-microbial, hypolipidaemic
27	Twak Cinnamomum zeylanicum.	Shukrala, Balya	Mukhashosha, Trushna	Vata, KaphaPittakara	Anti-allergic, lipolytic, anti-fungal, anti-microbial, anti-oxidant, anti-bacterial
28	El Sthula Amomumsubulatum Roxb Sukshma Elettaria cardamomum Maton.	Analakara	Kandu, Shwasa, Trushna, Hrullasa, Visha, Bastyaroga, Asyaroga, shiroroga, Vami, Kasa Shwasa, Kasa, Arsha, Mutrakruchha	Tridosha	Hypoglycaemic
29	Vanshalochana Bambusa bambos (L.) Voss	Brumhani, Vrushya, Balya	Trushna, Kasa, Shwasa, Jwara, Kshaya, Kamala, Mutrakruchha, Vrana, Pandu, Kushtha	Vata, Pitta	
30	Guggulu Commiphora mukul (Hook. ex Stocks) Engl	Sara, Bhagnasan dhan akara, Vrushya, Svarya, Rasayana, Deepana, Balya	Medoroga, Meha, Kushtha, Pidaka, Granthi, Shotha, Arsha, Gandamala, Krimi, Vrana, Apachi	Tridosha	Hypolipidaemic, antibacterial, anti-inflammatory, hypocholesteremic, antifertility, atherosclerotic, antiarthritic, Ca ²⁺ antagonist activity
31	Makshika Iron pyrite Swarnmakshik	Vrushya, Rasayana, Svarya, Chakshushya	Kshaya, Arsha, Meha, Pandu, Shotha, Kushtha, Jirnajwara, Apsmara, Arochaka	Tridosha	
32	Yavakshara Potassium Salt	Deepana, Pachana, Hrudy, Sara, Mutrala, Svedapravartaka	Gulma, Pleeharoga, Shoola, Anaha, udara, Adhmana, Mutrakruchha, Kantharoga, Meha, Shotha	Kapha, Vata	
33	Svarjiaka kshara Potassium Salt	Pachana, Agnidiptikara	Kasa, Shwasa, Gulma, Krimi, Adhmana, Vrana, Udara	Vata	
34	Saindhava Sodium Chloride	Hrudya, Vrushya, Netrya, Ruchikara, Pachana, Deepana,	Vranadosha, Vibandha	Tridosha	

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35	Sauvarachala	Hrudya, Pachana, Deepana, Rochana, Bhedana	Gulma, Vibandha, Anaha, Shoola, Krimi, Arochaka	Vatanuloman
36	Bid lavana	Deepana, Hrudya	Ajirna, Anaha, Shoola, Vibandha	Kapha Vatanuloman
37	Loha Iron	Lekhana, Netrya, Balya, Vrushya, Varnya, Medhya	Jathararoga	Kapha Pitta

Table 2 is referred from a review article from the International Journal of Pharmaceutical & Biological Archives titled Therapeutic Profiles of Chandraprabhavati- An Ayurvedic Herbo-Mineral formulation authored by Sushma B et al.¹⁵.

How Chandraprabha Vati is helpful in Sandhigatvata / Osteoarthritis:

Ingredients of Chandraprabha Vati helps to correct the Vata, Pitta, and Kapha dosha vitiation and nourish, strengthen the various dhatus / tissues. Thus ingredients improve the digestive fire and tissue health. Some of the Chandraprabha Vati ingredients are listed below with their medicinal properties relevant to the sandhigatvata. Some of the ingredients are muscle relaxants, while some are bone-muscle nutritious, analgesic, antispasmodic, anti-inflammatory, anti-arthritic. Thus, they help reduce pain, stiffness, etc., symptoms in various types of Sandhigatvata/osteoarthritis.

1. Guggul : Anti inflammatory, Anti arthritic, Shothaghna
2. Musta – Smooth muscle relaxant

3. Vidang, Amalaki, Musta, Pimplimool, Darvi, Trivutt, Devdaru, Haridra, Shathi – Anti inflammatory,

4. Chitrak, Haritaki, Danti, Bhunimba, Makshik Bhasma, Bhunimba, Shilajatu – Shothghna

5. Loha bhasma : Balya

6. Amruta, Pippali - Anti inflammatory, Anti spasmodic

7. Vacha, Black pepper – Analgesic

Description of Chandraprabha Vati -

According to Sharangdhar samhita, Chandraprabha Vati is balya / nutritious to all dushyas rasa, rakta, mamsa, meda, majja, asthi, shukra and beneficial for ailments attributed to ambu, lasika, sira, and artava too.

Acharya Sharangdhara also mentions its application in dantaroga. Danta is an updhatu of asthi dhatu mentioned by Acharya Sharangdhara in Pratham Khanda, Chapter five- Saptadhatu bheda. Hence CV also helps in asthi related disorders like Osteoarthritis.

Haritaki, Aamalaki, Pimpli, Amruta, Guggul, Shatavari, Vidang, Triphala, Ayaschurna, Makshik are rasayan in nature that helps in the formation of best quality dhatus / tissues, in body-mind healing, and the enhancement of

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health, lifespan, strength, immunity, and vigor, etc. Guduchi rasayan is tikta in taste and useful in arthritis, spondylitis, and osteoporosis.

Guggulu rasayan is bhagnasandhankrut, pichhil, balya, vatdoshahar, shophahara. Clinical study conducted by Betsy B Singh et al titled **“The effectiveness of Commiphora mukul for Osteoarthritis of the knee: An Outcomes Study”** mentions that Guggulu has anti-inflammatory, anti-arthritic properties; and is beneficial in osteoarthritis¹⁶.

OA has long been considered a "wear and tear" disease leading to loss of cartilage. But molecular biology says that many soluble mediators such as cytokines or prostaglandins can increase matrix metalloproteinase production by chondrocytes, leading to the first steps of an "inflammatory" theory.

Thus, OA is a much more complex disease with inflammatory mediators released by cartilage, bone, and synovium initially considered cartilage driven¹⁷.

Many ayurvedic plants can defeat inflammatory signs like redness, swelling, pain, and loss of function. Thus they help to repair and regulate the inflamed, agitated joints and associated structures. In addition, the active components from some of these plants of Chandraprabha Vati may have the potency to modify the inflammatory pathways linked to chronic diseases like OA. Thus Chandraprabha Vati can effectively help to reduce the symptoms of Osteoarthritis. Authors Dhammarathana, Kumudu Weerasekera and WD Ratnasooriya in

their study, investigated the anti-inflammatory activity of an ayurvedicherbo-mineral formulation, Chandraprabha vati, which consists of 37 ingredients, to justify its claimed anti-inflammatory action also its underlying main anti-inflammatory mechanisms in rats. The results conclusively demonstrate, for the first time, that Chandraprabha vati, possesses marked and dose-dependent oral acute and chronic anti-inflammatory activity.

The study's findings overly justify, for the first time, the recommendation of Chandraprabha vati, for inflammatory conditions in Ayurvedic medicine 18.

Acharya Sharangdhara mentions Chandraprabha Vati is effective in Katisula. Kati is a Vata and Sandhi Sthana. Kati Shula is a type of Vatavyadhi. Along these lines, Vati can also be beneficial in Sandhigatvata / Osteoarthritis. It balances Vata dosha, benefits in the process of regeneration of Asthi, and associated structures. It aids in reducing pain, inflammation, swelling, stiffness and helps revive tissue damages and prevention of disc prolapse or disc rupture.

CONCLUSION

Chandraprabha Vati prescribed in few patients at R.A.Podar Hospital OPD revealed positive results. Therefore, clinical trials can be conducted to confirm its utility in the treatment of Sandhigatvata.

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