



## **PATHOLOGICAL ASPECT OF MUSCULOSKELETAL DISORDERS**

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### **ABSTRACT**

In order to understand concept of musculoskeletal disease one should first understand the anatomical and physiological aspects of joints. The structure of our body is combined with fluid strength of our muscles, ligaments and tendons that put the skeletal system together. Likewise multiple references regarding musculoskeletal diseases have been found in our ayurvedic texts. Ayurveda considers these musculoskeletal disorders to be dominated by the dosha vata. There are many consecutive diseases in our body which are the complications of musculoskeletal disorders like osteoporosis, constipation, degenerative arthritis, low back pain, insomnia, bladder and kidney weakness, frequent urination and dental problems. The knowledge about joints and pathology affecting it is necessary in order to arrive at a proper and accurate diagnosis for a patient of Musculoskeletal Disorders (MSD). Sandhishool is an important clinical manifestation seen in many musculoskeletal diseases. So to make a differential between these disorders we need to find out there pathological aspects. This article is an effort to find out the pathologies of different musculoskeletal disorders.

**KEYWORDS-** MSD, Ayurveda, Dosha, Vata, Sandhishool.

### **INTRODUCTION**

The musculoskeletal system consists of bones, joints and the skeletal muscles, and provides form, support, stability and movement to the body. Tendons and ligaments help bone to connect with each other. Bones provides stability to the body, whereas muscles hold the bones in place and contract the bones attached at the joints to help in their movement. Joints connect different bones and help in producing motion and the rubbing of two joints is prevented by cartilage. Function of musculoskeletal system includes supporting the body, helping in body motion, protecting vital organs, acting as the storage system for calcium and phosphorus and contains important components of the haematopoietic system.<sup>[1]</sup>

Musculoskeletal disorders are the degenerative diseases and the inflammatory conditions that cause injuries or pain in the joints, ligaments, muscles, nerves, tendons and the structure that support the human body and impair body's normal activities. There are numbers of musculoskeletal disorders explained in Ayurveda texts by different Acharyas; here I have tried to explain the causative factor and the pathogenesis of some of them.

When the vitiated Vata Dosha and Ama simultaneously enters in the Kostha, Trika and Sandhi leading to Gatrasabdhata and Trika Sandhi vedana, it is termed as Amavata.<sup>[2]</sup>

In modern science, Amavata can be correlated with Rheumatoid arthritis.

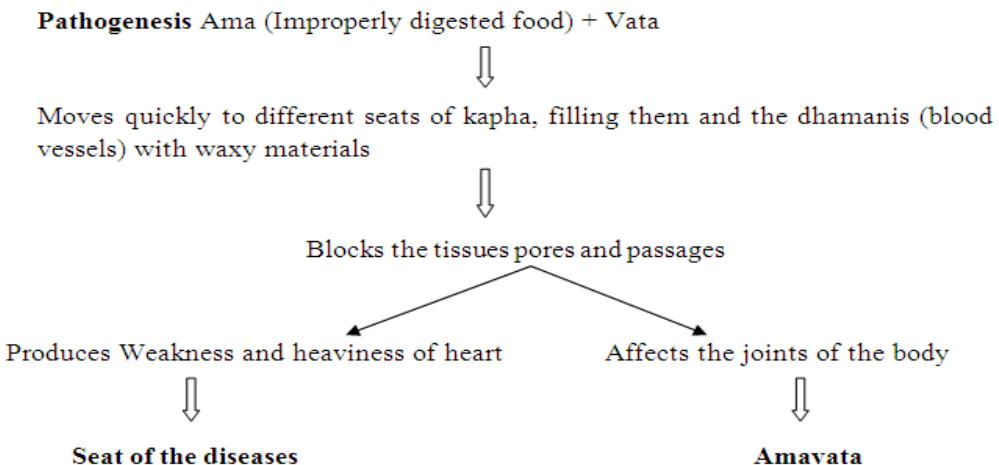
Rheumatoid arthritis (RA) is a chronic inflammatory disorder of autoimmune origin that may affect many tissues and organs but principally attacks the joints, producing a nonsupparative proliferative and inflammatory synovitis. RA often progresses to destruction of articular cartilage and ankylosis.<sup>[3]</sup> It is the most form of chronic inflammatory arthritis and often results in joint damage and physical disability. Because it is a systemic disease, RA may result in a variety of extraarticular manifestations, including fatigue, subcutaneous nodules, lung involvement, pericarditis, peripheral neuropathy, vasculitis, and hematologic abnormalities. The incidence of RA increases between 25 and 55 years of age, after which it plateaus until the age of 75 and then decreases. The presenting symptoms of RA typically result from inflammation of the joints, tendons, and bursae. Patients often complain of early morning stiffness lasting more than 1 hour and

easing with physical activity. The earliest involved joints are typically the small joints of the hands and feet.<sup>[4]</sup>

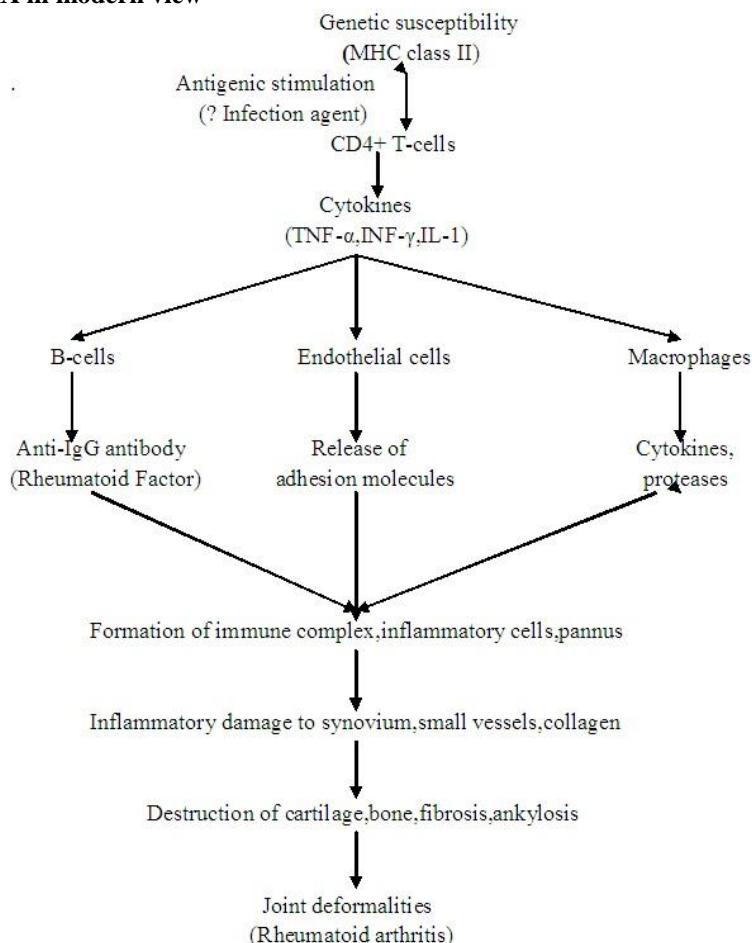
**Causative factor:** Indulgence in incompatible foods and habits, lack of physical activity, or doing exercise after

taking fatty foods and those who have poor digestive capacity. Immunogenic factors Hormonal factors.<sup>[5]</sup>

### Genetic predisposal



### Pathogenesis of RA in modern view



### Sandhigatavata

Sandhigatavata is the commonest form of articular disorders and a type of Vatavyadi which mainly occur due to Dhatushaya or Avarana in Vriddhavastha and

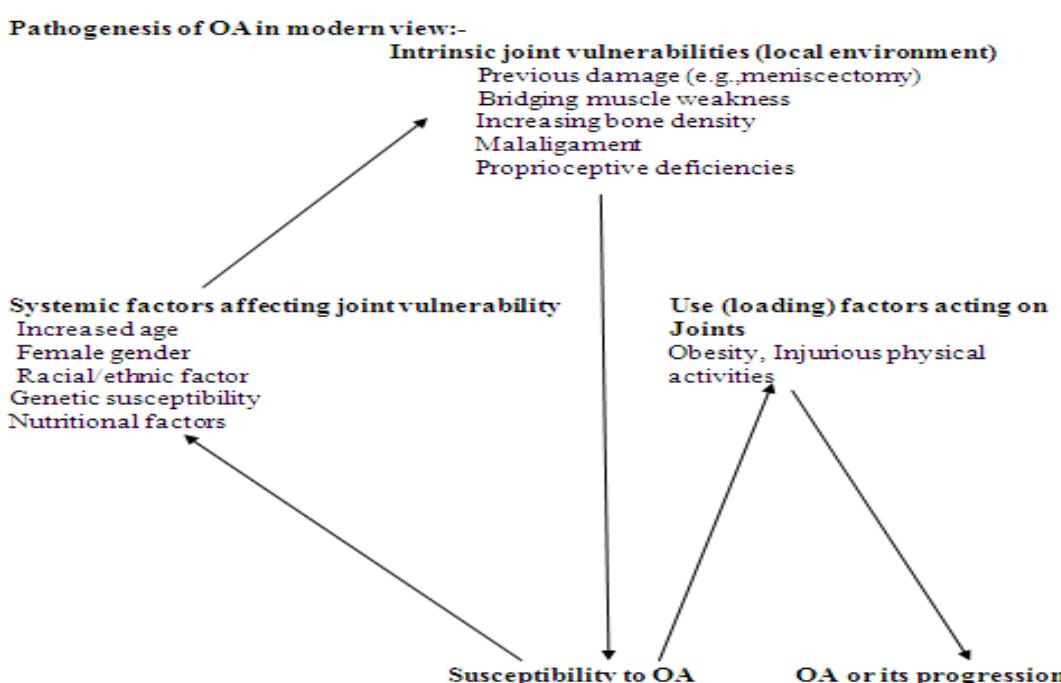
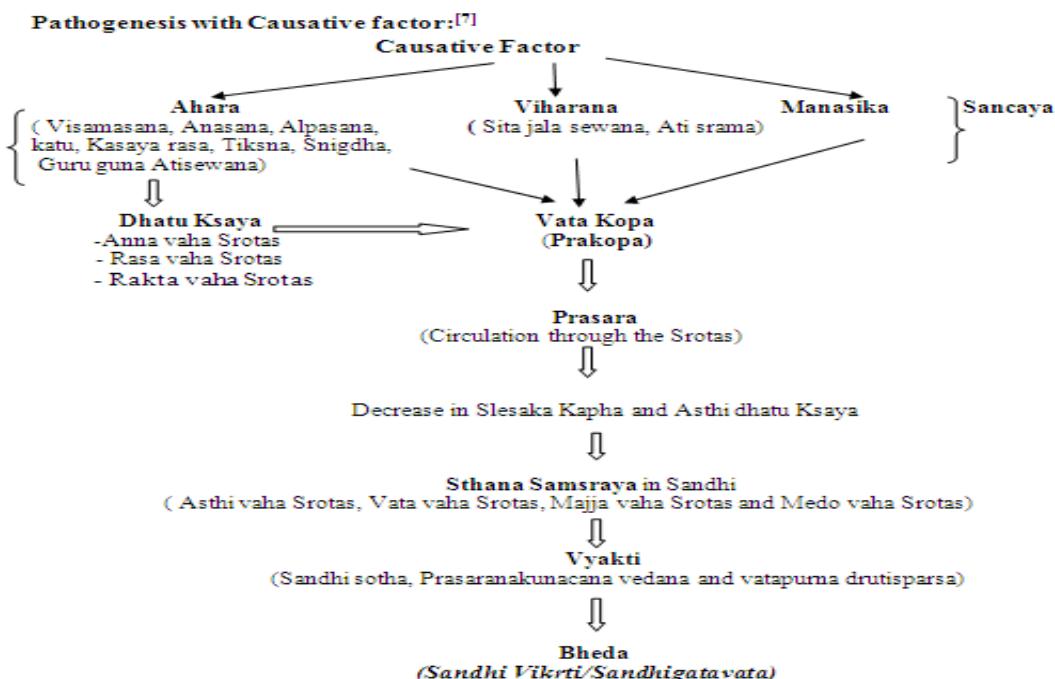
limits everyday activities. Pain is a cardinal feature of the disease.

In modern science Sandhigatavata can be correlated with Osteoarthritis.

Osteoarthritis (OA) is a the most common type of arthritis. OA is joint Failure, a disease in which all structures of the joint have undergone change. The pathologic sine qua non of disease is hyline articular cartilage loss, present in a focal and initially, nonuniform manner.

OA affects certain joints, commonly affected joints include the cervical and lumbosacral spine, hip, knee, and first metatarsal phalangeal joint(MTP).<sup>[6]</sup>

Osteoarthritis (OA), also called osteoarthrosis or degenerative joint disease (DJD),is the most common form of chronic disorder of synovial joints.It is characterized by progressive degenerative changes in the articular cartilages over the years,particularly in weight-bearing joints.Primary OA occurs in the elderly,more commonly in women than in men. Secondary OA may appear at any age and is the result of any previous wear and tear phenomenon involving the joint.



### Vata Rakta

Vatarakta is the disorder where both Vata and Rakta are afflicted by distinct etiological factors, and is an illness where pain is a predominant symptom.

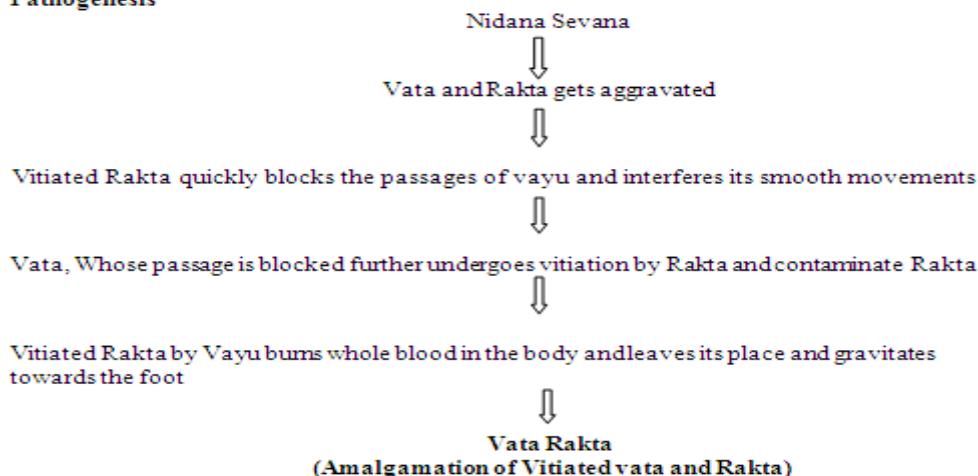
In Modern science, the Vata Rakta called as Gout. Gout is a metabolic disease that most often affects middle-aged to elderly men and postmenopausal women.<sup>[8]</sup>

Gout is marked by transient attacks of acute arthritis initiated by crystallization of monosodium urate within and around joints. Gout can be divided into primary and secondary forms, both sharing the common feature of hyperuricemia.<sup>[9]</sup>

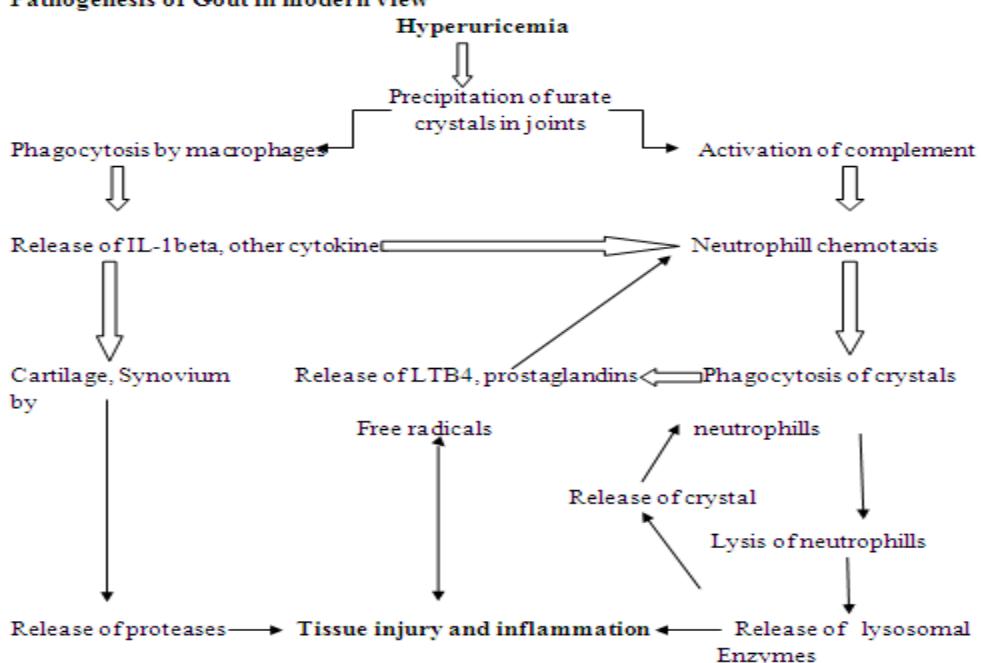
### Causative Factor

- Excessive consumption of salty, sour, pungent, unctuous, hot food
- Consumption of food in presence of indigestion or when the previously taken food has not been digested.<sup>[10]</sup>
- Excessive consumption of moist, dry food, radish, horse gram, black gram, flat beans, sugarcane, curds, buttermilk, different form of fermented drinks
- Excessive consumption of meat of aquatic animals, animals living in marshy areas, dry meat, food prepared with the paste of sesame, green leafy vegetables
- Viruddha ahara, Adhyashana, Krodha, Divaswapna, Prajaagaraihi, Mithya ahara,
- Mithya vihara, Sukumara, Sthula, sukha.<sup>[11]</sup>
- Heavy alcohol consumption, Obesity, Drugs (like thiazides), Lead toxicity, Genetic predisposition.<sup>[12]</sup>

### Pathogenesis



### Pathogenesis of Gout in modern view



## CONCLUSION

As per the slogation, there is an intimate relationship between vata and asthi. In other words, vata is situated in asthi and if vata is vitiated, firstly it harms its sitting place (asthi). Later it deteriorates other parts related to asthi, i.e whole musculoskeletal system. Vata vitiated by factors like; Viruddha ahara, Adhyashana, Krodha, Divaswapna, Prajaagara, Mithya ahara, Mithya vihara, Sukumara, Sthula, and sukha fill the whole empty strotas of the body and develop a disease in the body or some specific organ of the body. It can be assumed that the main factor to cause a musculoskeletal disorder is vitiated vata and vata itself is vitiated by inappropriate dietary habits, lifestyle, daily routine and sedentary lifestyle. To get rid of musculoskeletal disorders and maintain healthy bones, joints, and cartilages, previously mentioned unhealthy habits should be avoided.

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