Evaluation of diet and life style in etiopathogenesis of Sandhivata Osteoarthritis

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ABSTRACT

Mental, physical and social entities are inseparable and influence each other throughout the life. Many factors such as, anxiety, depression, unhealthy life style, unhygienic diet disturb mental and physical wellbeing. Anxiety, depression and social support are an important determinant of symptomatic and functional outcome. Providing social support can ameliorate symptoms and reassurance and patient's education can bring about change in symptoms. *Sandhigata-vata* is described under *vatavyadhi* in all Ayurvedic texts. *Dhatukshya* is one of the main causes of *vatavyadhi*. This clinical condition is well comparable to osteoarthritis (O.A.), which is the second most common rheumatologic problem with prevalence of 22% to 39% in India. Demographic studies reveal that osteoarthritic changes commence between 4th- 5th decades of life. In present study, 56 patients fulfilling the diagnostic criteria of *sandhigata-vata* were subjected for the evaluation of dietary and life style related factors in the etiopathogenesis of the disease. It was observed that majority of patients followed *viruddhaashana* and *vishamaashana* food habits and had *krura* and *madhyama koshtha*. Females in the post menopausal age were observed in maximum and unwholesome diet, obesity, disturbed physical and mental health seemed to play an important role in etiopathogenesis of *sandhivata* (osteoarthritis).

Key words: *Sandhivata*, Osteoarthritis, *Vatavyadhi*, Life style, *Dhatu-kshaya*

INTRODUCTION

Osteoarthritis, degenerative in nature, is the most common form of arthritis. The clinical syndrome in which low-grade inflammation results in joint pain with leading cause of chronic disability, by abnormal wearing of the cartilage that covers and acts as a cushion inside joints and destruction or decrease of synovial fluid that lubricates those joints. In

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India 5.3% of males and 4.8% of females are above 65 years and it is estimated that 80% of the population will have radiographic evidence of O.A. by age 65yrs, although only 60% of those will show symptoms[1]. Old age cannot be prevented. However much can be done by health workers in helping the elderly to lead a normal life, which is necessary to perform their activities of daily living (ADL) smoothly. Osteoarthritis is clinically characterized by joint pain, tenderness, limitation of movements, crepitus, occasional effusion and variable degrees of inflammation without systemic effects[2]. O.A. strikes women more often than men and it increases in prevalence, incidence and severity after menopause[3]. The aetiology of OA is multifactorial. Various morphological as well as biochemical changes result in a softened, ulcerated and malfunctioning articular cartilage[4]. It has been postulated that age, gender, body weight, repetitive trauma and

genetic factors are risk factors, which play an important role in the manifestation of O.A[5].

In all *samhita, sandhivata* has been described under *vatavyadhi*. *Charaka* was the first to describe the disease separately named "*Sandhigata Anila*"[6]. *Sushruta* mentions a group of naturally occurring disease named as *svabhava bala pravritta*[7], which includes *kshudha* (hunger), *pipasa* (thirst), *nidra* (sleep), *jara* (old age) and *mrityu* (death). *Sandhigata vata* is one among the age associated diseases. It is very much essential to identify the patho-physiological elements involved in process of ageing. *Dosha* are highly unstable in living body, rise & fall in *dosha* occurs around the time cycle and by the nature of activities and food of individuals. *Vata* become predominant during old age and is the element which obeys biological clock and seemingly initiates the ageing process. On the basis of symptomatology and nature of the disease, *sandhivata* is much similar to osteo-arthritis

AIMS & OBJECTIVES

To evaluate the effect of dietary and life style related factors in etiopathogenesis of *sandhivata* (osteoarthritis)

MATERIALS & METHODS

Total 56 patients between 40-70 years attending the OPD of *Kayachikitsa*, I.P.G.T & R.A hospital, Jamnagar fulfilling the clinical criteria of osteoarthritis based on detailed history taking according to both *Ayurvedic* and modern parameters, were registered. The patients below 40 and above 70 years, suffering from uncontrolled diabetes, psoriatic arthritis, gouty arthritis, rheumatoid arthritis, systemic lupus erythematosus, bone TB and other serious systemic disorders were excluded from the study. For assessment of depression and anxiety in the patient, Zung self-rating depression scale and Zung self-rating anxiety scale were applied.

OBSERVATION & RESULTS

The demographic data revealed that majority of patients (35.71%) were in the age group of 40-49 years followed by 32.14% between 50-59 years, 30.36% in the age group of 60-70 years. The maximum patients (64.28%) were females (out of them 57.14% were house wives) and 35.72% were males. Majority of patients were Hindu (92.86%), literate (32.14%), married (100%) and from middle class (71.43%). The 75% patients had BMI above normal range followed by 25% having normal. Majority of the patients (30.36 %) had chronicity of 2-5years followed by 28.57% having chronicity of 1-2 years and 19.64% for more than 5 years, whereas 91% of patients had gradual onset. Majority of patients (39.28%) had tendency to indulge in *vishamaashana* followed by 33.93% and 19.64%

Table 1: Involvement of joints

Involvement of Joints	Total No. of patients	%
Knee joint	55	98.21
Hip joint	01	01.79
Lumbar Spine	08	14.29
Ankle Joint	03	05.36
Shoulder Joint	05	08.93

Table-2: Status of *Kostha*:

Kostha	Total No. of patients	%
Madhyama	15	26.78
Krura	37	66.07
Mridu	4	07.14

Table 3: Status of *Agni*

Agni	Total no. of patients	%
Sama	5	8.93
Tikshna	8	14.28
Manda	15	26.78
Vishama	28	50.00

Table 4: Habit of exercise

Exercise	Total no. of patients	%
Not doing	36	64.29
Light exercise	16	33.93
Heavy exercise	01	1.78

Table 5: Nature of work

Nature of work	Total no. of patients	%
Physical work	52	92.86
Mental work	04	7.14

Maximum number of females (69.44%) had menopause followed by 19.44% patients having regular menstruation.

Table 6: Dominance of *rasa* in diet

Rasa	Total No. of patients	%
Madhura	13	23.21
Amla	12	21.43
Lavana	16	28.57
Katu	14	25.00
Kasaya	13	23.21
Normal	3	5.34

Table 8: Anxiety and Depression

Rasa	Total No. of patients	%
Madhura	13	23.21
Amla	12	21.43
Lavana	16	28.57
Katu	14	25.00

patients in *viruddhaashana* and *adhyasana* food habits respectively.

The available data depicts that 60.71% patients had addiction to tea followed by 1.78% each to tobacco and smoking, whereas, 35.71% had no addiction.

Table 9: *Deha prakriti*

Deha Prakriti	Total No. of patients	%
Vata-Kaphaja	16	57.14
Vata-Pittaja	07	12.50
Pitta-Kaphaja	32	28.57

In *dashavidha pariksha*, 87.5% patients had *rajasika prakriti. Samhanana* means compactness of body and *pramana* is measurement of bodily organs. The 91.07% patients had *madhyama samhanana* and 73.21% patients had av*ara pramana* (*sthula*). Maximum patients ,(75%) were obese of whom females were 57.14% and males 17.86%.The 76.79% patients had *madhyama satva,* whereas 21.43% *avara satva.* The 83.92% and 94.64% patients had *madhyama sara* and *madhyama satmya* respectively. The maximum (89.29%) patients had *madhyama jaranashakti* followed by *avara jaranashakti* (7.14%). Similarly, maximum patients (62.50%) reported *madhyama abhyavaharana shakti* followed by *avara abhyavaharana shakti*(25%). The 67.86% patients reported *avara vyayamashakti* followed by 32.14% *madhyama vyayamashakti*. According to *aharaja nidana,* majority of the patients (46.42%) had excessive indulgence in diet dominant in *ruksha guna* followed by 42.86%, 25% and 23.21% *alpa ahara* (insufficient food), and diet dominant in *kasahya rasa, and sheeta guna* respectively. The 5.38% patients were found to have addiction for *madya* (alcohol). The 53.57% patients had history of *vegsandhara* followed by 41.07%, 35.71% 30.76% and 28.57% for *sahasa, divaswapna, shrama* and *ratri jagarana* respectively.

Table 10: Cardinal Symptoms

Cardinal Symptoms	Total No. of patients	%
Sandhi Shula	43	78.79
Sandhi Shotha	28	50.0
Akunchana Prasaranayoh Vedana	41	73.21
Sandhi Sphutana	44	78.57
Stambha	33	58.93
Sparsha-Asahyata	33	58.93

Table 11: Radiological findings

Radiological findings	Total No. of patients	%
Reduced joint space	16	28.57%
Sub-articular sclerosis	18	32.14%
Articular margins	04	7.14%
Synovial effusion	05	8.93%
Osteophytes	06	10.20%

DISCUSSION

The maximum numbers of patients were in the age group of 40-49 years, female and house wives. Demographic study revealed that osteoarthritic changes commence between 4th-5th decades of life[8]. Women affect more than men. (Female: male 3:1). Females in the post menopausal age group were affected maximum. The post menopausal hormonal variations play a role in bone demineralization[9]. *Dhatukshaya* and vitiation of *vata* in old age is the cause for incidence of the disease[10]. Majority of subjects were Hindu which may be due to the regional religious dominance and there is no established data on the relationship of race & religion and osteoarthritis. Though, there is no existing relationship between education and osteoarthritis, the maximum patients were educated and of middle class due to their dominance in the population. Dietary habits revealed that majority of patients were vegetarian.

The 75% of patients were obese (BMI above normal range) i.e. joints are strained due to overweight resulting in more wear and tear. Females are more prone to obesity in geriatric age group. It was also found that females were obese in comparison to males in this Series of patients.

The majority of the patients had chronicity between 1 to 5 years with gradual onset (91%) suggesting O.A. being a slow progressive and chronic degenerative joint disease. Iinvolvement of knee joint was maximum compared to other joints, which is due to the fact that knee joints being the main weight bearing joints are more prone to wear and tear.

Majority of patients followed *viruddhaashana* and *vishamaashana* in their daily food habits which leads to *agni vaishamya* and *vataprakopa* resulting in *dhatukshaya* which coupled with old age leads to pathogenesis of *sandhivata*. Almost equally consumption of all 5 *rasa* except *tikta rasa* was observed, suggesting maximum *rasa-satmya* in the sample drawn for study. Majority of patients were observed to have *krura* and *madhyama koshtha* suggesting the involvement of *vata dosha* which is the main culprit in *sandhivata*[11]. Half of the subjects had *vishamagni* suggesting impaired digestion due to predominance of *vatadosha* which further result in *dhatukshaya* due to improper nutrition. The 65% patients had no habit of exercise which suggests that pain and stiffness might have restricted them from movements. On the other hand, sedentary life style alone with other factors leads to weight gain which cause excess burden on joints leading to *sandhivata*. Maximum patients had the occupations dominant in physical labour, which cause excess strain on joints and *vata vriddhi* leading to *sandhivata*. Among the female patients, the majority had attained menopause suggesting post menopausal body changes alone with bone demineralization had contributed in the development of O.A. The repetitive stress and overweight speed up joint degeneration.

All the patients found to have *dwandwaja prakriti* with predominance of *vatakapha prakriti* suggesting the susceptibility of these patients to *sandhivata*, where *vata* and *kapha* vitiation plays a vital role in initiation and manifestation of disease. Maximum patients had *madhyama samhanana* followed by *avara samhanana* suggesting susceptibility of body structures, particularly joints as prime target for *sandhivata*. Pain and stiffness reduces the activity of a person which is evident in the study as maximum subjects had *avara* and *madhyama vyayamashakti*. *Jaranashakti* and *abhyavaharana shakti* was *madhyama* in maximum patients, which suggest role of *vata* and *kapha* rather than predominance of *pitta*. The disease manifests minimal in those who have a good *dhatusara* which is the evident in this study too. It also revealed that maximum number of patients had *madhyama* and *avara satva*, who suffer from stress, fear, anxiety, which may cause *vata prakopa*. Charaka has mentioned that a person having *madhyama* and *avara satva* are more vulnerable to disease[12], which is supported in this disease. According to *pramana*, maximum patients were *sthula*, in which excess *medas* leads to improper nutrition of succeeding *dhatus* especially *asthi* and *majja* which act as *dushyas* in *sandhivata*. Among cardinal symptoms, *sandhishula*, *sandhishotha*, *akunchana prasaranayo vedana*, *sandhi sphutana*, *sthambha* and *sparsha asahyata* were pronouncedly seen in the subjects indicating active phase of *sandhivata*. On *viharaja nidana*, *shrama*, *ratri-jagarana*, *vega sandharan* and *sahasa* found among maximum number of patients causing *vataprakopa* and *dhatukshaya* resulting in *sandhivata*. Radiological findings were found among almost all the patients including reduced joint space and sub-articular sclerosis etc.

CONCLUSION

Sandhivata can be correlated to osteoarthritis based on similarities in information reviewed from *Ayurveda* and modern literature. *Sandhivata* manifests mostly in literate middle class population, women, especially in housewives in fourth and fifth decades of life. *Mithyaahara* and *Vihara* particularly *vata* and *kapha vardhaka ahara vihara* along with obesity is found to be the causative factor of *sandhivata*. Knee joint involvement is maximum compared to other joints. The rest relieves the symptoms and physical exertion exacerbates symptoms. It may be concluded that *sandhivata* is of gradual onset, common among menopaused women, in patients possessing *krurakoshtha* and *vishamagni* indicating role of *vatadosha*.

Sandhishula, *sandhisphutana* and *akunchana prasaranayoho vedana* are the most common Cardinal symptoms found in this disease.

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Author Index (Volume 3, Number 1-4) 2010