

ASSESSMENT OF DIETARY PRACTICE AMONG OSTEOARTHRITIS PATIENTS

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ABSTRACT

Objective: The aim of this study is to assess dietary practice among the people with Osteoarthritis, as diet is one of the major causative factors of the disease.

Methods: Total 100 OA patients were enrolled in this study to obtain the data in a predesigned questionnaire. It includes the dietary habits of different food groups as per the ICMR Guidelines and Ayurveda food groups which are mentioned in *Samhitas*.

Results: The results were showing that, the excess usage of *Vata* provoking vegetable, pulses, meat, cereals etc., are leading to cause Osteoarthritis.

Conclusion: The *Vata* aggravating food when consumed frequently in excess may cause to increase *Vata* dosa and causing osteoarthritis. Being it is very small study the results may show a discrepancy, and there is a need for large population study.

Keywords: Osteoarthritis, *Sandhivata*, *Vata* aggravating foods.

INTRODUCTION

It is estimated that 80% of the population have radiographic evidence of OA by age 65, although only 60% of those will have symptoms. The high incidence of Osteoarthritis in India is the result of its prevalence among women who fall victim to it. Menopausal women are especially prone to it. The disease is, however, not restricted to women, although diabetes and hypertension remain the most prevalent ailment among men. 630 million people worldwide - 15% of the people on the globe were affected with this disease.

Osteoarthritis is a chronic degenerative disorder of multi-factorial etiology explained by pain in the joints, mobility impairment, loss of articular-cartilage, hypertrophy of bone at the margins, subchondral sclerosis and range of biochemical and morphological alterations of the synovial membrane and joint capsule [1,2]. OA commonly affects the hands, feet, spine, and the large weight bearing joints, such as the hips and knees, although in theory, any joint in the body can be affected. Treatment is primarily symptomatic and at present there is no known cure. Its prevalence increases with age. It acquires a substantial and increasing burden on individuals and society as a result of population dynamics, impaired health-related quality of life and the socio-economic impact of the condition.

There are many reasons for the high prevalence of Osteoarthritis in India. Genetic is the strongest reason which makes us more predisposed to it. Several other factors like the popular squatting position in India, rising obesity, sedentary lifestyle and poor diet are responsible for its high incidence.

Sandhivata (Osteoarthritis)

Different nomenclatures are available in Ayurvedic literature for the clinical entity, which is similar to Osteoarthritis are *Sandhivata*, *Sandhigatavata*[3], *Khudavata*, and *Jeerna vata*. The term *Sandhivata* is formed by two words. '*Sandhi*' - joint and '*Vata*'- one of the three humors (*dosas*) of the body. The cause of *Sandhivata* in Ayurveda is attributed to improper diet, life style, overuse and old age etc,[4] leading to degeneration of body elements (*dhatu kshaya*), aggravation of *Vata*; the humor responsible for all the movements and functions of the body and reduction in *Shleshaka Kapha* - a slimy substance present in the joints. The aggravated *Vata* brings *rukshyata* (dryness), *laghutva* (lightness or porousness), *kharatva* (coarseness) in the joints causing degeneration [5]. The clinical presentation of both *Sandhigatavata* and Osteoarthritis are similar. In *Sandhivata sandhi shula* (pain in affected joint) is the main

feature. The other features include *shotha* (swelling), *stabdata* (stiffness) and *atopa* (crepitus) and difficulty in performing the functions of the involved joints [6,7,8].

Vata Aggravating food [8, 9, 10, 11]

Diet is an essential factor for the formation of our body. It is clearly mentioned in '*Charaka Samhita*' that consuming wholesome food is one of the causes for the growth of living beings and unwholesome food for the growth of the disease. One should be in a habit of taking all six '*rasa*' (taste) in order to prevent nutritional deficiency disorders. General foods with the *vata* qualities, such as crackers, frozen desserts; Pungent, bitter, astringent; light, dry, cold foods; stimulants like smoking, alcohol, junk food, sugar, tea (esp. long leaf teas and green tea), brown rice etc., Vegetables like Cabbage, cauliflower, celery, brinjal, leafy green vegetables, mushrooms, peas, peppers (simla mirch) potatoes, sprouts, tomatoes etc., and fruits like apples, pears, pomegranates; will aggravate *Vata dosa*; Also, refined food such as white flour and sugar have light and dry qualities and would be best to avoid by people with *Vata* constitutions. When there is aggravated *Vata*, the following are to be taken with caution: coriander seeds powder (*dhaniya* powder), fenugreek (*methi* seeds), saffron, turmeric, parsley. Avoid too much hot, dry spice such as dry chilli, which will aggravate dryness. Another important factor in food is life force or *Prana*. Naturally grown and fresh food is full of *Prana*. While, frozen and inorganic or artificially grown food is low in *Prana*. Canned food or refrigerated food for a long time is completely without *Prana*. Freshly cooked and served food is high in *Prana*.

Objectives

The aim of this study is to assess dietary practice (causative food habits) among the people with Osteoarthritis in Out Patient Department at Dr. Achanta Lakshmi pathi Research Centre for Ayurveda, VHS, Chennai.

MATERIALS AND METHODS

The study was a cross-sectional evaluation of Osteoarthritis patients, either sex, attending outpatient department at Dr. Achanta Lakshmi pathi Research Centre for Ayurveda, VHS, and randomly selected during December 2011 to April 2012. Total 100 patients who had been diagnosed (The results of the most recent investigations and X-ray findings were obtained from patient's medical records) with OA for at least 6 weeks and above, and were

aged 40 – 75 years are selected for study. After obtaining informed written consent from literates and a verbally informed consent from illiterates, patients were enrolled into the study and collected the data. The questionnaire is based on a review of the literature, ICMR 5 food group plan, Ayurveda food groups and input from local experts. It was piloted on ten OA patients initially and modified as necessary. It provides socio-demographic data, such as sex, age, marital status, level of education, occupation and health related parameters (personal history) such as smoking status, alcohol and tobacco etc., along with eating practices and sources of nutritional information. Physical examination like Height, weight etc., was

measured using a portable digital scale and weighing machine; Blood pressure measured after the subject had rested in the sitting position for 10 minutes using a validated sphygmomanometer.

RESULTS

As the aim of the study is to establish causative food habits for developing the disease Osteoarthritis, the excess intake (more number of times/quantity in a week) of food among the foods which he/she consume regularly in his/her day to day life, are made into a list, and analyzed. Total 100 patients were participated in this survey after full filling inclusion and exclusion criteria of the study.

The observation and results are shown in table form

Table 1: Percentage of patients suffering from OA with respect to age and sex:

Age group (Years)	No. of patients			Percentage
	Male	Female	Total	
40 – 50	04	10	14	14 %
51 - 60	12	36	48	48 %
61 – 75	22	16	38	38 %
Total	38 (38%)	62 (62%)	100	100%

The prevalence of Osteoarthritis significantly higher in females (62%) than males (38%), which is due to food habits and hormonal changes (menopause) after 45 – 50 years in females.

Table 2: Percentage of patients suffering from OA with respect to addictions

Addiction	No. of cases for Addiction		
	Alcohol	Coffee / Tea (more than 4/day)	Tobacco / Smoking
Addiction Yes	27 (27 %)	77 (77 %)	47 (47 %)
No addiction	73 (73%)	23 (23%)	53 (53%)
Total cases	100	100	100

The table shows that 77 % cases were addicted to Coffee / tea and 47 % were addicted to Tobacco / Smoking. It shows that, these addictions are aggravating 'Vatadosa' and causing Osteoarthritis.

Table 3: Percentage of patients suffering from OA with respect to diet:

Diet	No. of patients	Percentage
Vegetarian	28	28 %
Non vegetarian	72	72 %
Total	100	100 %

The incidence of Osteoarthritis in Non-vegetarians is high. It shows 72% were Non Vegetarians and 28 % were Vegetarians.

Table 4: Percentage of patients suffering from OA in respect with sharirika prakriti (Body constitution)

Sharirika prakriti	No. of patients	Percentage
Vataja	20	20 %
Pittaja	10	10 %
Kaphaja	08	08 %
Vata kaphaja	14	14 %
Vata pittaja	40	40 %
Pitta kaphaja	08	08 %
Vata-Pitta-Kapha (Tridosaja)	00	00

The table showing that the 'Vatapitta prakriti' patients are more prone to Osteoarthritis.

Distribution of patients according to their intake of different food groups

Table 5: Distribution of OA patients with respect to food Group I (Milk group; pulses, nuts, meat etc.,)

Group I	Total No. of patients	Using in excess	Percentage
Chana (Bengal gram) – (<i>Cicer arietinum</i>)	100	80	80 %
Batane (Peas) –(<i>Pisum sativum</i>)	100	78	78 %
Moong dal (Green gram - Pesaru) – (<i>Phaseolus radiates</i>)	100	78	78 %
Urad dal (Black gram dal)- (<i>Phaseolus minimum</i>)	100	88	88 %
Curd	100	89	89 %
Meat & Dry meat	100	56	56 %
Fish & Dry fish	100	67	67 %

The excess intake of above all the Milk group; pulses, nuts, meat etc., may increase the *Vata* and causes Osteoarthritis.

Table 6: Distribution of OA patients with respect to food Group II (Fruits and green leafy vegetables; etc.)

Group II	Total No. of patients	Using in excess	Percentage
Grapes (<i>Vitis vinifera</i>)	100	78	78 %
Jamun (<i>Syzygium cumini</i> - neredu) fruit	100	77	77 %
Apple (<i>Malus sylvestris domestica</i>)	100	62	62 %

The excess intake of above all the Fruits, especially Jamun (*Syzygium cumini*-neredu) may increase the *Vata* and causes Osteoarthritis.

Table 7: Distribution of OA patients with respect to food Group III (Other vegetables etc.)

Group III	Total No. of patients	Using in excess	Percentage
Tomato - (<i>Lycopersicon esculentum</i>)	100	78	78 %
Bimbi (Ladies finger) - (<i>Hibiscus Esculenta</i>)	100	77	77 %
Dosa (Trapusa)- (<i>Cucumber</i>)	100	62	62 %
Vartaka (Brinjal) - (<i>Solanum Melongena</i>)	100	73	73 %
Sora (Bottle guard) - (<i>Lagenaria Siceraria</i>)	100	60	60 %

The excess intake of above all the vegetables *Tomato, Bimbi, Dosa, Vartaka* and *Sora* may increase the *Vata* and causes Osteoarthritis.

Table 8: Distribution of OA patients with respect to food Group IV (Cereals, roots and tubers etc.)

Group IV	Total No. of patients	Using in excess	Percentage
Old rice (<i>purana sali</i>)	100	55	55 %
Pickles	100	79	79 %
Intake of stored foods	100	59	59 %
Potato - (<i>Solanum tuberosum</i>)	100	72	72 %

The excess intake of above all the Cereals, roots and tubers etc., may increase the *Vata* and causes Osteoarthritis.

Table 9: Distribution of OA patients with respect to food Group V (Fats and oils and pure carbohydrate foods etc.)

Group V	Total No. of patients	Using in excess	Percentage
Sarsapa tail (Mustard oil) - (<i>Brasica nigra</i>)	100	56	56 %
Spicy foods	100	79	79 %
Fried foods	100	68	68 %
Habit of Cold water intake	100	92	92 %
Cool drinks / cocks etc.,	100	73	73 %

The excess intake of above all the Oils, spicy and fried food etc, may increase the *vata* and causes Osteoarthritis.

DISCUSSION

Overindulgence of food which are astringent, pungent and bitter, very less in quantity, very dry and light; use of cold food, not taking any food at all, food that are not fresh, overcooked, stale and processed food made from refined flour (maida) - (*tamasic* foods) will greatly aggravated *vata*, fills into the empty (dry, devoid of unctuousness) channels and gives rise to many kinds of diseases in any one part or the whole body. They usually suffer from conditions like heart disease, diabetes, arthritis, and chronic fatigue. [12,13,14] The study shows, excess intake above mentioned few vegetables, and excess intake of Spicy food, pickles, fried food, cold water and cold or stored food are leading to increase *Vata dosa* and develop Osteoarthritis, due to their properties like - cold in potency, bitter in taste, pungent at the end of digestion, binding (with hold the movement of faeces and fluids) capacity, will increase *Vata* and mitigate *Kapha* and *Pitta*; Excess intake of Chana, Urad dal, Moong dal, Batanee, generally they are astringent, sweet in taste, cause constipation and flatulence, non-unctuous (dry), binding the stools, cold in potency, pungent at the end of digestion and cause *Vata* aggravation and leading to Osteoarthritis. Apart from that, it is observed that the '*Vatapitta prakriti*' predominants and Non-vegetarians are also suffering from osteoarthritis.

CONCLUSION

Hence, it is concluded that, the above mentioned food when consumed frequently in excess, may cause to aggravate *Vata dosa* and leading to osteoarthritis. Therefore we may consider that, these food habits are one of the causative factors in manifesting the disease Osteoarthritis. Being it is very small study the results may show a discrepancy, and there is a need of large population study. It should also be borne in mind that all vegetables or food products will not produce the same effect to the same degree in all persons, as the constitution of every person is different. A vegetable or food

product, which may cause constipation in one person, may not do so in the other. So every person should take note of the good or bad effects of every vegetable or food he uses and become accustomed to those which do not harm him and avoid those which cause harm. There has been a continuous increasing interest towards Ayurveda, especially for guidelines regarding healthy food and food habits and hence needs exploration of the hidden knowledge written in the texts.

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CONFLICT OF INTERESTS

Declared None

REFERENCES

1. John Macleod, Davidson's Clinical Medicine, Diseases of Connective Tissues, Joints & bones, Reprint-1985, 1986; Chapter-14.
2. Colin Oglilive and Christopher C. Evans, Chamberlain's symptoms and signs in clinical medicine - 11th edition, by - ELBS - British Government.
3. Prof. K.R.Srikantha Murthy, Bhavapraksha of Bhavamishtra, Chowkhamba Sanskrit Series Office, Vol. 2, Part II, 24th Chapter - page 348, verse 258-259; Madhyama khanda 24/ 1-6 verse.
4. Dr. Suresh Rande, Dr.(Mrs.) Sundara Ranade, A Text book of Kayachikitsa, Part - I, by Chaukambha Sanskrit Pratishtham, Delhi - 2005. Page No. 121-22.
5. Dr.S.Suresh Babu, the principles and practice of Kaya chikitsa (Ayurveda's Internal Medicine) - Chaukhambha orientalia, Varanasi 2007.

6. Prof. K.R.Srikanta Murthy, Madhava Nidanam (Roga viniscaya) of Madhavakara - 1987. Published by Chaukamba orientalia. Chapter 22, verse 21.
7. Shree Gulabkunverba, Charaka Samhita Chikitsa sthana, Vol.IV, 28th Chpater - verse 20-23;Shree Gulabkunverba Ayurveda Society Jamnagar, India-1949.
8. Chaukhamba Surbharti Prakashan;Charaka Samhita, 1st ed. Varanasi:Sutrastana, Chapter 28/45;Chapter 25/29
9. R.K.Sharma, and V. Bhagwan Dash, Charaka Samhita, Sutrasthanam, Vol-1, by Chaukhamba Sanskrit Series Office, Varanasi, 1983, Chapter 25/31, page 419.
10. M.S. Valiatham, The legacy of Caraka, by Universities Press publication, 2011, Chapter 15th and 17th.
11. E.C.Blank-Hand book of food & nutrition - 2010
12. Dr. Indeqdev Thripathi & Dr.Dayashanker Thripathi ;Yogaratnakaram:'Hindi' - Book, Chaukamba Krishnadas Academy, Varanasi - 2007.
13. Dr.K.R.Srikantha Murthy;Ashtanga Hridayam-Sutra sthana, published by Krishnadasa Academy& Chaukamba Sanskrit Series, Varanasi - 1991;Vol - 1;Chapter 8, verse 3, page 124.
14. Prof.K.R.Srikantha Murthy, Bhavapraksha of Bhavamishtra, Madhyama khanda, Published by Chowkhamba Sanskrit Series Office. Vol. 2, Part II, 24 th Chapter - page 315, verse-1.