

A DATABASE STUDY OF DIET FOR VATAPRAKOPA WITH SPECIAL REFERENCE TO OSTEOPOROSIS

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ABSTRACT

The Vitiated *Vata* by marching the hollow *Strotas* creates many diseases and porosity is one of them. Decreased bone strength with increased risk of fractures is called as osteoporosis. Osteoporosis is a disorder characterised by enhanced skeletal fragility as a result of reduced bone quantity and quality. Diet and Regime have been well-thought-out to be the adaptable actions of the very foremost step for the management of *Vataprakopa* so as osteoporosis. Ayurveda had described various *Ahara Dravyas* for prevention and treatment of *Vataprakopa*. Different types of cereals, pulses, vegetables, oils, fruits, liquids and other have been explored in this study as having logistic effects in the *Vataprakopa*. In this research an attempt was made to reveal the *Ahara Dravyas* besides their pharmacological properties. The study concludes that the *Ahara Dravyas* can be used in daily diet of patient suffering from osteoporosis because intake of wholesome food in appropriate quantity after the digestion of the previous meal helps a person to enjoy good health for a long time.

Keywords: *Vata, Vataprakopa, Osteoporosis, Diet, Ahara, Dravyas.*

INTRODUCTION: The balanced state or equilibrium of *Doshas* is termed as health in Ayurveda. Among the *Doshas* *Vata* is the elan vitae, the strength, the sustainers of the body of living beings, is all pervasive and *Vata* is reputed as the controller of everything in the universe^[1]. Even prayer of *Vata* is the cause for health. Ayurveda describes *Vata* as *Prabhu* (God, Supreme Power). When this *Vata* remains in equilibrium, the homeostasis of all body functions is maintained because the *Vata* is the only motive of the body, but when there is *Vataprakopa* (vitiation of *Vata*) everything gets disturbed. There is the *Ashraya* (substratum) *Ashrayi* (substance) relation between *Asthidhatu* (bone) and *Vata*. The principle of *Ashrayaashrayee Bhava* explains inverse proportionality of *Vata* and *Asthi* as one increase, other decreases.

When *Vata* get aggravated it creates innumerable diseases and porosity is one of them. Osteoporosis is a disorder characterized by enhanced skeletal fragility as a result of reduced bone quantity and quality. World Health Organization defines Osteoporosis as a condition in which a Bone Mineral Density (BMD) is less than -2.5 standard deviations below peak bone mass (i.e. a T score measured as the units of SD below normative mean of a 35 year-old woman).^[2] The World Health Organization operationally defines osteoporosis as a bone density that falls 2.5 standard deviations below the mean for young healthy adults of the same gender.^[3] Osteoporosis affects large number of population, but only a small proportion are diagnosed and treated.^[4] Earlier work proposed two types of Osteoporosis, based

on age of onset; type I or postmenopausal osteoporosis, caused by oestrogen deprivation and type II osteoporosis, related to high turnover from calcium and vitamin D insufficiency. ^[5]

In the era of fast food, diet and diet timings has been changed with sedentary lifestyle. All these causes disturbance to the endocrine system; which result into many diseases, amongst which osteoporosis disorders constitute an important group. Observing the view of significance and title role of diet and lifestyle in *Vataprakopa*, this article had tried to explore the food items recommended for patients suffering from *Vataprakopa* by our ancient Acharyas.

Aim of Diet

There is nothing else except diet for sustaining the life of living beings. One is

capable to make man disease-free only with the congenial diet. ^[6]

The aim of diet in person suffering from *Vataprakopa* can be stated as –

1. The mitigation in *Vatadosha* with the help of *Snigdha* (*unctuous*), *Ushna* (*hot*) and *Balya* (*tonic*) *Dravyas*.
2. Correction in *Dhatvagnimandya* (decreased metabolism or secretion)
3. Improvement in overall nutrition.
4. Prevention or reduction in complications.

The *Ahara Vargas* are –

1. *Shukadhwanya Varga* (Cereals)
2. *Shamidhwanya Varga* (Pulses)
3. *Shaka Varga* (Vegetables)
4. *Goras Varga* (Milk and products)
5. *Phala Varga* (Fruits)
6. *Aharyogi Varga* (Adjuvant of foods)
7. *Mamsa Varga* (Meat)

Table 1: Ahara Dravyas recommended for patients suffering from Vataprakopa

English Name	Sanskrit Name	Rasa	Veerya	Vipaka	Guna
Rice ^[7]	<i>Shashtika</i>	<i>Madhura</i> (sweet)	<i>Sheeta</i> (cold in potency)	<i>Madhura</i>	<i>Laghu</i> easy to digest), <i>Snigdha</i> (<i>unctuous</i>), <i>Balya</i>
Wheat ^[8]	<i>Godhuma</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Balya</i> , <i>Snigdha</i> , <i>Sandhanakara</i> (repairs the tissue), <i>Sthiratvakrita</i> (promotes stamina), <i>Pathya</i>
Black Gram ^[9]	<i>Masha</i>	<i>Madhura</i> , <i>Kashaya</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Snigdha</i> , <i>Anilapaha</i> , <i>Balya</i>
Horse Gram ^[10]	<i>Kullatha</i>	<i>Kashaya</i>	<i>Ushna</i> (hot in potency)	<i>Katu</i>	<i>Laghu</i> , <i>Sara</i> (mild laxative)
Pointed Gourd ^[11]	<i>Patol</i>	<i>Tikta</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Pachana</i> , <i>Deepana</i> , <i>Snigdha</i> , <i>Tridoshhara</i>
Drum stick tree ^[12]	<i>Shigru</i>	<i>Katu, Madhura</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana</i> , <i>Vataghna</i>

Brinjal ^[13]	<i>Vruntaka</i>	<i>Madhuara</i>	<i>Ushan</i>	<i>Katu</i>	<i>Vataghna, Deepana,</i>
Garlic ^[14]	<i>Lashuna</i>	<i>Katu, Madhura</i>	<i>Ushna</i>	<i>Katu</i>	<i>Brihana, Snigdha, Bhagnasandhankara (heals fractures), Guru, Rasayana (tissue vitalizer)</i>
Mango ^[15]	<i>Amra</i>	<i>Madhura, Kashaya</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Snigdha, Balya, Guru, Vatahara</i>
Pomegranate ^[16]	<i>Dadima</i>	<i>Madhura, Kashaya, Amla</i>	<i>Anushna</i>	<i>Madhura /Amla</i>	<i>Laghu, Snigdha, Grahee</i>
The Palmyra palm ^[17]	<i>Tala</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatahara</i>
Orange ^[18]	<i>Naranga</i>	<i>Madhura, Amla</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatanashana,</i>
Indian Jujube ^[19]	<i>Badara</i>	<i>Madhura, Amla, Kashaya, Tikta</i>	<i>Sheeta/Ushna</i>	<i>Madhura</i>	<i>Guru, Brihana, Vatahrita</i>
Mowha fat ^[20]	<i>Madhuka</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Guru, Brihana, Vatanashana</i>
Phalsa ^[21]	<i>Parushaka</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Brihana, Sameerahrita</i>
Grapes ^[22]	<i>Draksha</i>	<i>Madhuara, Kashaya</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Brihana, Guru, Vatahara</i>
Tamarind ^[23]	<i>Amlika</i>	<i>Amla</i>	<i>Ushna</i>	<i>Amla</i>	<i>Deepana, Vatahara</i>
Cow Ghee ^[24]	<i>Gavyaghrat</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Guru (difficult to digest), Snigdha, Balya, Agnikrit</i>
New Sesame ^[25]	<i>Nav Tila</i>	<i>Katu, Tikta, Madhura, Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Balya, Snigdha, Dantya, Vataghna, Agniprada</i>
Partridge ^[26]	<i>Tittira Mamsa</i>	<i>Madhura Kashaya</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Laghu, Grahee, Pathya (wholesome)</i>
Meat of Domesticated animals ^[27]	<i>Gramya mamsa</i>	<i>Madhura</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatahara, Deepana, Brihana (nourishing), Balya</i>
Fowl ^[28]	<i>Kukkuta</i>	<i>Kashaya</i>	<i>Ushna</i>	<i>Katu</i>	<i>Brihana, Snigdha, Vatahara, Guru</i>

Ayurveda has mentioned *Pathya* (wholesome) diet for *Vataprakopa*. All the patients suffering from *Vataprakopa* should be continuously given diet containing ingredients which are sweet, sour, saline and unctuous. ^[29]

Charaka suggested *Yusha* (Soup) of meat of the head of a goat or meat of aquatic marshy-land-inhabiting or carnivorous animals should be prepared separately by boiling it with decoction of *Bala* or *Panchamula* or *Dashmula*. These soups should be added with ghee and sizzled with yoghurt, sour ingredients and *Trikatu*. ^[30] *Kashyapa* mentioned about soup of *Punarnava*, *Rasna*, *Changeri*, *Bala*, curd and Ghee. ^[31]

DISCUSSION: *Vata* gets aggravated in two different ways viz. 1) by the diminution of tissue elements and 2) by the occlusion of its channel of circulation. ^[32] *Vata* gets aggravated by indulgence in similar qualities, substances and activities, since use of similar has been said as the cause of increase.

Mechanism of action ^[33] – Things which cause aggravation of *Vata* make the body non-slimy (viscid) and hollow, in such a body *Vata* takes shelter, gets nourished and increases. *Vata* undergoes aggravation by over indulgence of factors which cause *Dhatukshaya* (depletion of tissue), moving inside the *Strotas* (cell pores) which have become empty (by *Dhatukshaya*), it fills them up by itself greatly or getting *Avarana* (covering or obstruction) by other *Doshas* accumulated in those *Strotas* the mighty *Vata* gets aggravated and inversely it reduces bone causing osteoporosis. The opposite things which bring about mitigation of *Vata* make the body unctuous, heavy, warm, smooth, soft, slimy and solid; in such a body *Vata*

moves on without staying anywhere and gets mitigated.

When aggravated in the body, it troubles the body with much kind of abnormalities affecting the whole body or a part thereof. When localised in bones it produces dryness of bone, fractures and severe pain in thighs, joints, bones and loss of strength and in the *Majja* (bone marrow), it causes hollowness (cavitations) of bones, loss of sleep and pain which does not subside at all. ^[34, 35]

Vata gets aggravated by- ^[36, 37]

1. Intake of dry, cold and light food, dried leafy vegetables and meat
2. Excessive sexual indulgence
3. Remaining awake at night in excess
4. Inappropriate therapeutic measures
5. Administration of therapies which causes excessive elimination of *Doshas*
6. Keeping fast in excess, taking food at improper time and overeating, taking food while thirsty, drinking water when hungry
7. Swimming in excess
8. Resorting to wayfaring, exercise and other physical activities in excess
9. Loss of *Dhatus* (tissue elements)
10. Excessive emaciation because of worry, grief, anger, fear and affliction by disease.
11. Sleeping over uncomfortable beds and sitting over uncomfortable seats
12. Sleeping during day time and suppression of natural urges
13. Formation of *Ama* (product of improper digestion and metabolism)
14. Injuries to *Marma* (vital points)
15. Riding over an elephant, camel, horse or fast moving vehicle and falling down.

Because of the above mentioned factors, the aggravated *Vata*, while filling up the channels of bone which are empty or have become weak in quality because of the lack of unctuousness, etc., produces different kinds of aliments. The clinical symptoms of osteoporosis may include back pain, height loss and /or a history of fracture. The events are likely related to altered bone quality, as a result of microarchitectural changes in the trabecular and cortical skeleton. Unfortunately, qualitative changes in the skeleton cannot be captured by clinical measurements, even though they strongly influence overall fracture risk. In summary, low BMD is a strong risk factor for subsequent fractures, but there is no threshold BMD above or below which fracture occur. The incidence of osteoporotic fractures increases markedly with age. Osteoporosis is most common in Asian and white populations and is less frequent in African and American blacks. Men have higher bone density than women.^[38]

In elderly individuals reduced vitamin D, calcium intake and less sun exposure with reduced capacity to generate previtamin D in the skin results in secondary hyperparathyroidism and enhanced bone resorption.^[39] Bone remodelling is also regulated by several circulating hormones including oestrogen, androgens, vitamin D and parathyroid hormones as well as locally produced growth factors such as IGF I and II, parathyroid related peptide (PTHRP) and etc. Additional influences include nutrition (particularly calcium intake) and physical activity level. In cortical bone, increased activation of remodelling creates porous bone. During the adult phase of life, insufficient calcium intake contributes to relative secondary hyperparathyroidism and increase in bone

remodelling to maintain normal serum calcium levels. Vitamin D insufficiency leads to compensatory secondary hyperparathyroidism and is an important risk factor for osteoporosis and fractures. In some individuals bone loss may be seasonal.^[40] Oestrogen deficiency probably causes bone loss by two distinct but interrelated mechanisms: (1) activation of new bone remodelling sites and (2) exaggeration of imbalance between bone formation and resorption. Glucocorticoid and excessive dose of thyroid hormone are the most common cause of medication-induced osteoporosis.^[41] Calcium supplementation must be part of any prevention strategy to ameliorate bone loss. Increased calcium intake reduces the secondary hyperparathyroidism and can enhance bone mineralization of newly formed bone. Vitamin D is important for skeletal maintenance and enhancement of calcium absorption and increased sex hormone production at puberty is required for skeletal maturation. Nutrition and lifestyle also play an important role in growth though genetic factors primarily determine peak skeletal mass and density. The preferred source of calcium is from dairy products and other foods. Dietary phytoestrogens, which are derived primarily from soy products and legumes (e.g. garbanzo beans, chickpeas and lentils), exert some oestrogenic activity.^[42]

Sampraptibhangha (Probable mode of action)

The prescribed *Ahara Dravyas*, which included mainly *Madhura* in *Rasa*; *Snigdha, Balya* in *Guna*; *Ushna* in *Veerya* and *Madhura* in *Vipaka* mitigate the vitiated *Vata* and correct the *Dhatvagnimandya*. As modern medical science states, osteoporosis occurs when

bone resorption exceed formation due to either oestrogen deprivation or less calcium intake or vitamin D insufficiency, by considering *Vata* responsible for all body functions, *Vata* pacifying diet can mitigate *Vata* and interrupt the excessive bone resorption and loss. Also prescribed *Ahara Dravyas* may act by fulfilling the requirement of calcium and vitamin D.

CONCLUSION :It is clear that, if a person takes unwholesome food, then he quickly succumbs to diseases like osteoporosis caused by the vitiation of *Vata*. It means proper diet has a key role in management of *Vataprakopa* or osteoporosis. As a wholesome diet, the 22 *Ahara Dravyas* of different *Vargas* explored in this research can be suggested for osteoporosis patients. The proactive approach need to be taken for prevention of osteoporosis with the planning of proper diet. We can resume the *Dhatwagni* to normal, improve the overall nutritional status of patients and can prevent or reduce the complications of osteoporosis with the help of *Ayurvedic* principles of diet, because the physician, who after ascertaining the states of decrease, provocation, balance and obstruction of *Doshas*, advices suitable therapies, for no reason falls to be successful in his efforts.

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