



Review Article

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THE DYNAMICS OF DEGENERATION: A CONCEPTUAL VIEW FROM AYURVEDA

P. N. Vinaya*

Department of Sanskrit Studies, University of Hyderabad, Hyderabad, Telangana, India

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*Corresponding author

Dr. P.N.Vinaya, Ayurvedic Physician and Research Scholar, Department of Sanskrit Studies, University of Hyderabad, Hyderabad, Telangana, India
E-mail: vinayaballakur22@yahoo.co.in

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ABSTRACT

Degeneration is defined as a degradation of tissues and is a substitution in the body of an inferior for a superior form of tissue. Three main pointers of degeneration (1) aging (2) disease and (3) injury were identified as the aspects requiring an in-depth study of the role of bio-energies in the process. The Ayurveda texts specifically use the terms Kshaya and Shosha interpreted as atrophy and wasting respectively. Dhatu Vikruti, the impairment of the tissues is characterized by alteration in the quality of tissue, impairment of function and also complete destruction of the original elements of tissue. An early recognition of Dhatu Vikruti is therefore necessary to help prevent degeneration of the tissue.

Keywords: Degeneration, Kshaya, Dhatu Vikruti

INTRODUCTION

The quest for longevity and immortality has been a hallmark of ancient Indian literature. Whether it was the search for the Sanjeevani herb or a tussle for Amrita, the nectar of immortality, living long and healthy has always been an extremely desirable mission of the Indian psyche through recorded and unrecorded history. The seers of Vedic and post Vedic era were conscious of the continuous wear and tear phenomenon of the body throughout life. They were also mindful of the fact that this was the reason leading to senescence and death. The body known as Shareera is defined as “Sheeryate iti shareeram” meaning the body is that which degenerates continuously.¹ Kshaya (atrophy) is denoted to mean loss of tissue through degeneration. An active arrest of this process if not a complete reversal was to be attempted for a long life. This paper deals with the study of processes that lead to degeneration as defined in Ayurveda and the role of the bio-energies Vata, Pitta and Kapha in the processes. It is an attempt to relook the concept of degeneration from the Ayurvedic perspective.

Ageing

Old age Jara in Ayurveda is described as Swabhavika Roga (naturally occurring disease).² Jara that etymologically expands to “jiryati iti jara” meaning ‘that which becomes old by the act of wearing out’ and Jara is a natural process of decline. The period between 40-60 years is the time of setting in of natural aging which after the age of 60 or 70 results in further deterioration. At the cellular level apoptosis is a natural phenomenon. Ageing renders quicker apoptosis like changes and delay in the clearance of dead cells which shows up as necrosis. Old age is the period of Vata according to Ayurveda. The predominance of Vata leads to curtailed nutrition, delayed

disposal of accumulated wastes and decrease of immunity all of which contribute to age related degenerative changes. Aging is characterized by loss of the Dhatus, decreased cognitive functions, speech, memory and perception of senses. Svabhovoparamvada, a philosophical concept adapted in Ayurveda describes the natural deterioration of tissues unless an active pre-emptive approach is applied to retard the process.³ Exposure to toxic chemicals, radiation and dietary deficiencies lead to increase in endogenous toxins and hypoxia at the cellular level and hasten the manifestation of age related changes. The mechanism of aging is understood as a decrease in the functions of Prana – the life energy that governs two other important energies the Ojas and the Tejas. Ojas is responsible for immune system while Tejas governs metabolism necessary for the nourishment and transformation of each Dhatu.⁴

Degenerative Diseases

Prakrita Kapha is the force behind structure and cohesion at the cellular level as it is at the gross level. Kapha Kshaya leads to Vata Vridhi. Vata causes Shoshana (drying up) of Poshaka Rasa (nourishing sap) leading to Dhatukshaya (tissue level senescence). Unlike the other doshas, Pitta and Kapha, the increase of Vata does not lead to the enhancement of its location Asthi (skeletal tissue). Rather Vata Vridhi (increase of Vata) leads to Asthi Kshaya in particular and general Kshaya (atrophy) of all the Dhatus.⁵ The causes of Kshaya have been listed as ati vyayama (excessive exercise), ati anashana (more fasting), Ruksha(dry), Alpa Pramati ashanam (intake of unctuous food in small quantity), Vatatapah (exposure to wind and sun), Malanam Atipravartanam (excessive discharges from the body), Kala (old age) as well as psychological states like Chinta (anxiety), Bhayam (fear/phobias) and Shoka (grief/depression).⁶ Kshaya is of

eighteen kinds, the Kshaya of Vata pitta and Kapha, the Kshaya of the seven Dhatus (tissues) the kshaya of the waste products of metabolism of the seven Dhatus and the kshaya of the Ojas (the essence of the dhatu).⁷ Of all the eighteen Kshayas described in the texts the nine kshayas involving the anabolic aspects of the body namely Kapha kshaya, the Saptadhatu Kshaya and Ojokshaya bear a close relationship with degeneration.

Kapha Kshaya

Natural Kapha works at maintaining cellular integrity. Sneha (unctuousness), Bandhah (connections) Sthiratwam (stability), Guaravam (quantitative increase), Vrushuta (fertility), Balam (strength), Kshama (endurance), Dhriti (intellectual ability), Alobha (contentment) are the functions of Kapha.⁸ A considerable decrease of Kapha would lead to degeneration. The table below summarizes the possible outcome resulting from a diminished factor of the Kapha bio-energy.

Table 1: Loss of Kapha and its implications in Degenerative Diseases

Functions of Kapha	Considerable Loss of Kapha	Likely Degenerative Manifestation
Sneha	Dryness	Loss of moisture, decreased synovial fluid, onset of osteoarthritis
Bandhah	Weakening of bonding between cells	Infirmity in muscles, disconnection between nerve synapses as senile dementia, falling teeth, falling hair
Sthiratwam	Loss of Stability	Disturbed coordination between muscles and nerves, motor disability
Gauravam	Diminution of tissues	Muscle loss, onset of osteoporosis
Vrushuta	Infertility	Dysfunction of testes and ovaries
Balam	Weakness	Muscle weakness
Kshama	Loss of stamina	Fatigue
Dhriti	Loss of intellectual ability	Senile dementia, Alzheimer's disease
Alobha	Loss of contentment	Irritability and mood disorders

Saptadhatu Kshaya

Loss of individual tissues and their manifestations are summarized in the table below^{9,10}.

Table 2: Saptadhatu Kshaya and their symptomatology

Type of Kshaya	Symptoms
Rasadhatu Kshaya ¹¹	Uneasiness, faces intolerance to noise, palpitation, pulling pain in the chest, tremors, emaciation, emptiness and thirst
Rakta Kshaya ¹²	Rough cracked skin, pale skin, dry skin, symptoms exhibited by anemia
Mamsa Kshaya ¹³	Emaciation of buttocks, neck and abdomen, aches, fatigue and weakness of arteries, pain in joints
Medah Kshaya ¹⁴	Crackling pain in joints, fatigued eyes, overall fatigue, thinning of abdomen, splenomegaly, dryness of the body, desire to consume animal flesh
Asthi Kshaya ¹⁵	Joint pains, fatigue, hair fall, break in nails and teeth, pain in bones.
Majja Kshaya ¹⁶	Feeling of bones being cut, weakening and lightness of bones, feeling of emptiness of bones, aches in bones, porosity of bones, giddiness and fainting, Vata rogas perpetually
Sukrakshaya ¹⁷	Weak, tired, infertile, unable to ejaculate, pain in genital organs, inability to participate in sexual intercourse and blood mixed with semen.

Ojokshaya

Ojas the essence of all tissues is required for maintaining immunity. The qualities of Ojas namely, Somatmakam (predominant with water element) Snigdham (unctuous), Shitam (cool), Sthiram (stable), Mridu (soft) and pranayatanamuttamam (essential for life) are very similar to the qualities of Kapha.¹⁸ The ten properties of Ojas, Guru, Mrudu, Snigdha, Bahalam Madhuram, Sthiram, Prasannam, Picchilam and Slakshnam also coincide with

most gunas of Kapha.¹⁹ Ojas has been equated with Bala or immunity and natural resistance to disease. Ojokshaya can therefore render a person vulnerable to disease. The physical implications of Ojokshaya are similar to Vata related diseases like muscle wasting.

Degenerative Changes Due To Injury

Ayurveda recognizes injury/trauma leading to degenerative conditions wounds, non healing fractures and Marmabhighata leading to loss of integrity of Marma (vital organ). Injuries cause compression and tears. At the cellular level cellular integrity is lost. Degeneration occurs at an accelerated rate following a traumatic injury. Shalya (foreign body) if not removed would lead to dosha vitiation (infections) and that would lead to degeneration. Hence Ayurveda recommends timely removal of Shalya, if not wounds can get complicated under different kinds of Vrana dosha situations which include decay of ligaments, decay of veins, deep wounds, seriously infected wounds, bone fractures, retention of foreign bodies, wounds exposed to toxicity, progressive wounds and detached body parts. Chronic wounds tend to be stuck in the inflammatory stage and fail to proceed to the proliferative stage and heal.²⁰ Degenerated wounds get further complicated with faulty lifestyle and psychological stress. Pitta and Rakta are vitiated in traumatic wounds and need to be corrected.

The Role of the Bio-energies

Degeneration of tissues through the process of injury, disease or ageing involves the impaired activity of the bio-energies. There is an element of Vata provocation because it has Shoshana property (emaciating property) which is responsible for Dathu kshaya. Charaka described

Sarva dhatu sara, a condition in which there is compactness of all body tissues which is to be aspired for to delay the onset of ageing. Vata affects compactness of tissues and is an important factor to be dealt with in degenerating disorders. Dathusara is considered as Bala by Bhavamisra. The phrase Prakritastu Balam sleshma indicates the role of Kapha or Sleshma in providing strength and compactness to the tissues.²¹ Ojas is also described as Bala and is equated with Kapha. Ojokshaya in effect leads to a decrease in the compactness of the body. Ayurveda regards Agni and its manifestation in the body as Pitta as the vital aspect in metabolism. Disturbance in Agni renders Ama (toxic metabolites) clogging the channels of the body macro and micro leading to Shotha inflammatory diseases.²² Inflammation has been proven to be the precursor of many degenerative diseases. In short diminished Kapha provoked Vata and disturbed Pitta in the form of the affected bio-energies of the body hastens the degenerative process. Ojokshaya understood on the basis of the Saptadhatu Kshaya as well as the process which leads to a compromise in the functions of the immune system.

CONCLUSION

There is a serious level of understanding of the degenerative process in Ayurveda. Tissue loss and atrophy correspond to the degenerative diseases of the present day. Mamsa kshaya can be correlated with myopathies and muscle wasting. Medo kshaya seen from the context of degenerative conditions which would point to the loss of the fatty myelin sheath as in multiple sclerosis. Injury and premature ageing are potential triggers for degeneration. All the bio-energies the Vata, Pitta and Kapha together with Ojas is seen to be impaired in the degenerative disorders. Going by the principle of restoration of Dhatu Samya (homeostasis) the provoked Vata needs to be pacified, diminished Kapha and Ojas need to be supported and enhanced. Disturbance in Agni should be corrected. Prevention entails early recognition of Dhatu Vikruti and addressing it whether in injury, disease or ageing.

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