

Review Article

Volume 9 Issue 3

July-Sept 2020

A REVIEW ON MOLECULAR APPROACH TO AYURVEDA

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Abstract

It is quite well known fact that all facts demonstrated via physico-chemical methods are treated as scientific. However, all the laws are not always demonstrable. In spite of the advanced era, the areas like mind, intelligence, consciousness, soul etc., are beyond the scope of available scientific equipments even today. In order to make these possible, the ayurvedic science has made free hand use of the philosophical thoughts in the field of medicine. This journal is aimed to provide a small review on the molecular level approach to the origin of beings, which is a subject of query since time eternal.

Keywords: Molecular ayurveda, origin, panchamahbhut as

INTRODUCTION

Ayurveda is not merely a medical system, but is a complete philosophy of life. Life is the nucleus of universal evolution. All knowledge related to any discipline, whether physical or metaphysical is revolving in one way or the other around the central point of life. The urge to live and preserve itself is the topmost pursuit of every living organism. It has been a subject of deep enquiry and research for the philosophers and to the scientists since time immemorial.

It is well known fact that the modern science is based on the laws of physical science and therefore it can be directly perceived and measured. In order to perceive these laws, initially sense organs were used directly. All facts demonstrated via physico-chemical methods are treated as scientific. Because of ignorance about basic knowledge and how the life activity is generated initially in the living matters, all the laws of physics are not always demonstrable, In spite of rapid advances, the areas like nature and quality of mind, intelligence, consciousness, soul etc are beyond the reach of available scientific equipment. For this philosophical concepts help us. Caraka, Susruta and other ayurvedic authorities have made a free hand use of philosophical thoughts in the field of medicine.

From eternal time, it has been questioning when, how, why, where the evolution of universe came into existence, whether the basic element is single or multiple, conscious or unconscious etc.

Mainly four classifications can be seen in our classics

Vyasti- individual/single creature

Samasti- society as a whole/aggregate of things

Srsti- universe with all mobile/immobile creatures

Paramest i- Almighty/above to all these and omnipresent

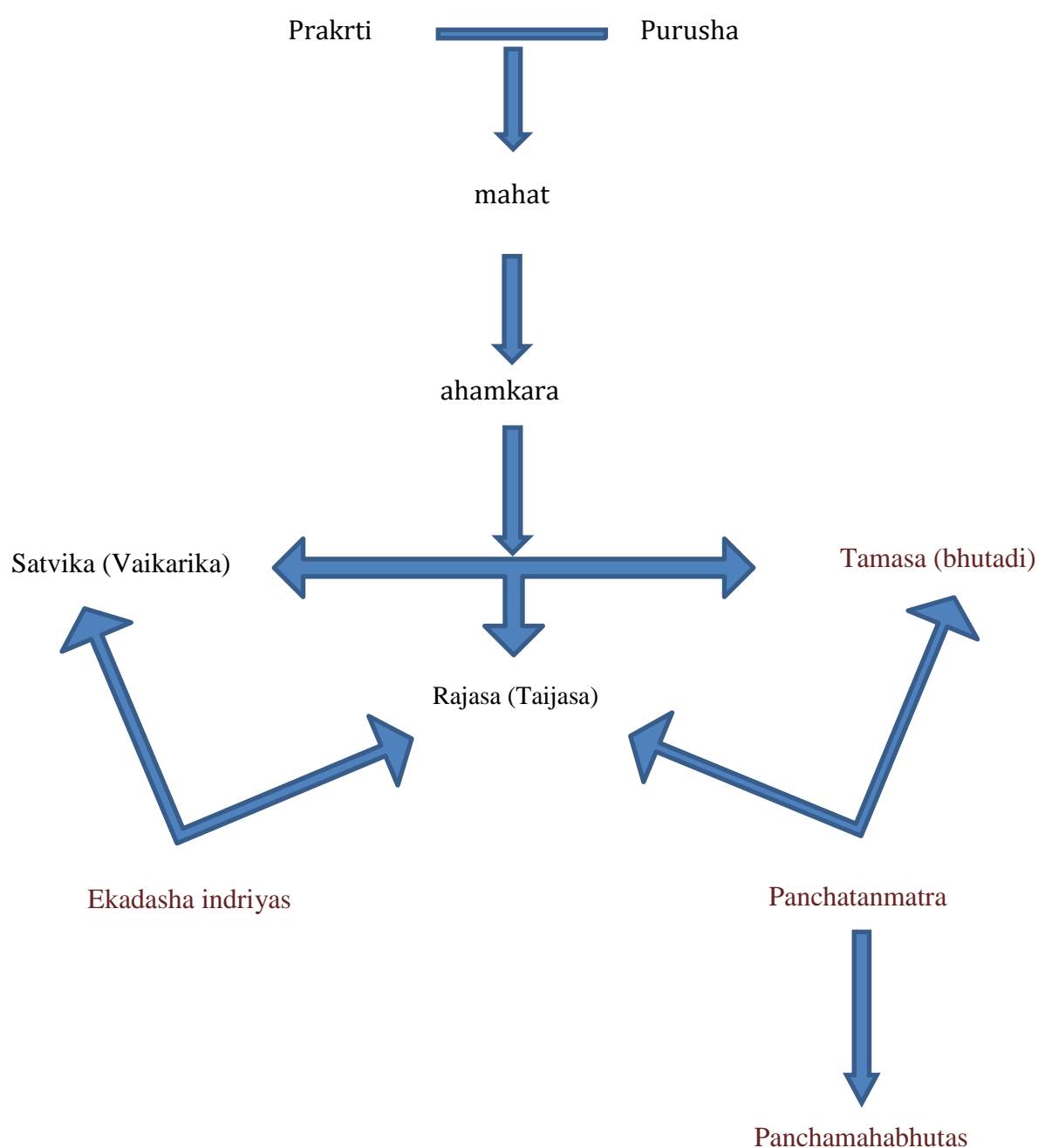
All these four forms are indifferent and actually changed forms of one and same entity

DIFFERENT SCHOOLS OF THOUGHTS

SAMKYA

Represents theory of dualistic realism as it describes two ultimate realities- Prakriti (matter) and Purusha (soul). Prakriti is such principle i.e. the first and ultimate cause of

all gross and subtle objects. Prakrti is both the material and efficient cause of physical word. Being the ultimate cause, prakrti itself is uncaused, eternal and all pervading (being subtlest and finest). Prakrti cannot be perceived but only inferred from its effect. The evolution of prakrti results in 24 different kinds of objects. First among this is mahat/ budhi (intellect) which is the base of all our intellectual modes i.e. the faculty by which we discriminate, deliberate and make decisions. From mahat, ahamkaram arises (ego) which is the main source of 'I' and 'mine'ness. From ahamkara two sets of objects are produced. The first set consists of five sense organs, five motor organs and mind (manas); second set comprises of five subtle elements (panchatanmathras) and five gross elements (panchabhoothas).



SUSRUTA

Ayurveda accepts samkya view of evolution with minute changes. Susruta explains the root cause of universe as avyakta (the unmanifested) or mulaprakrti and it provides establishment for countless creatures and completes the word. According to him 25 elements of which only 25th element, jiva (purusha/soul) is conscious (cetana) one.

CARAKA

Accepts the view of samkya. Only difference is indriyas are said to be bhouthika as per caraka or Ayurveda, and ahamkarika according to samkya. The sense faculties or indriyas are formed from sat vika ahamkara and corresponding senses from t amasaah amkara. They are mutually dependent. Samkya explains gross universal evolution while in Ayurveda it is the explanation for rashipurusha (chikitsapurusha) or living organism.

VAISHESHIKA

PARAMANU VADA (Doctrine of atom) postulated by sage Kanada who is said to be the profounder of atomic theory (600 BC)

The supreme or the last minute particles of the creation can be called as paramanu.

In Sarangadhar asamhita, the magnitude of paramanu is vamsi or trasarenu, present in the beam of sunlight i.e. 1/30 portion of smallest visible magnitude. 1/6th of dhulikana, in sun beam entering the window is paramanu according to Yoga sutreeya.

Anu has been defined as quality denoting the measurement of minuteness. As further division is not possible, niravayava and it is not perishable, hence eternal. The substance ieprthvi, jala, teja, vayu, akasha when are in atomic stage (paramanurupa) are said to be eternal.

According to Vaisheshika,

Combination of 2 paramanus- dvayanuka

Combination of 3 dvayanuka- trayanuka/trasarenu

Combination of 4 trayanuka- caturanaka

Combination of 5 cat uranaka – panchanuka/mahat

Vaisheshika considers Eswara desire as the cause of evolution and destruction. Every creation is followed by destruction and destruction by creation. God as the creator in

the sense, the motion of atoms which usually lack motion/inactive is imparted by his wish i.e. after destruction, primordial atom which lack motion or in state of rest, and next creation does not start until God sets the atoms in motion. Atoms cannot exist in uncombined state in creation. Dravyas are manifested with combination of paramanus or pilu (atoms) as stated by Vaisheshika. This breaking down and reproduction occurs quickly and is not visually perceived.

Dimensions of dravyas (parimana)

All dravyas have any of the four dimensions (parimana)-anu, mahat, Hrasva, deergha

A dravya increases and at some stage, it may be stopped or ended naturally meaning it is the end for increase for that particular dravya. It shows it can't grow further; i.e. it cannot cross the limits and is the mahat parinama. For example akasha. Similarly dravya when becomes minute, not visible (anu parimana) which is indivisible is considered as paramanu. For example prthvi, ap, teja, vayu in anu forms. Hence paramanus are the basic components in a matter or dravya which is different from that of another.

These paramanus are called by different names by different philosophers.

- Samkya, yoga, Vedanta –paramanus are differentiated as satva, rajas, tamas
- Nyaya, vaisheshika, purvameemasa- as paramanus
- Upanishad – lohita (raja), Krishna (tama), sukla (satva)

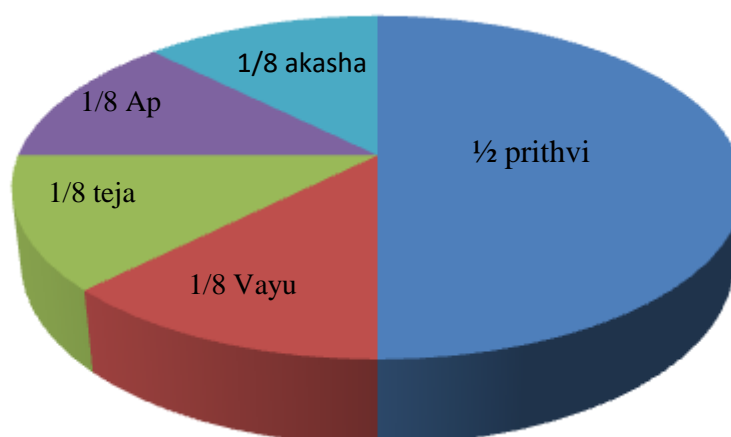
Concept of paramanus is accepted by Caraka, where he says bodily parts are innumerable and are in form of atoms. He opines that vayu is the cause of conjunction and disjunction of paramanus. They are minute, atindriya and invisible. They are beyond sensory perception and combination of these paramanus is responsible for creation of gross universe.

TANMATHRAS & MAHABHOOTHAS

Elements are subtle and gross, gross elements arise from result of combination of subtle. Akasha is the most subtle in the series of evolution of physical and material development. The subtle stage is accepted as tanmatras or avishesha while the gross stage is recognized as the mahabhoothas or vishesha. Tanmathras are elemental sound, elemental touch, elemental colour, elemental taste and elemental smell. These are subtle, eternal and unperceivable to senses known as avishesha, suksma, paramanu etc.

PANCHEEKARANA

The process by which sookshma form of bhuthas attains sthoola form is called pancheekarana. The five subtle bhoothas undergo pancheekarana or process of integration to form gross matter. Half of each sookshma bhut ha gets $1/8^{\text{th}}$ each of other four sooksma bhutas. By mutual contact, cooperation and interaction in atoms of pancha mahabhoot has results in the universal presence.



Hence akasha mahabhut a, gross space element is produced from elemental sound with property of sound, vayumahabhuta by combination of elemental sound and touch with both qualities of sound and touch. Likewise prthvi by all tanmathras with all five qualities, so the first one (akasha) only one attribute while prithvi with all five attributes.

INDRIYAS & MAHABHUTHAS

Pancha Bhuthas	Their properties	Pancha Gnana Indriyaha	Gnana Indriya Devatha	5 Senses	Pancha Karma Indriyaha	Karma Indriya Devatha	5 Activities	3 Ayurvedic Effects	3 Energies or Shakthis
Akasha	Everywhere	Ears	Dhik	Hears	Tongue	Agni	Talks	Effect is not known	
Air	Spreads	Skin	Vaayu	Touch	Hands	Indra	Does	Vaadha	Kriya
Fire	Faces up	Eyes	Sun	Sees	Legs	Vishnu	Walks	Pitha	Gnana
Water	Faces down	Tongue	Varuna	Tastes	Anal	Yama	Excretes	Kapha	Ichcha
Land	Limited	Nose	Ashwini	Smells	Birth organ	Prajapathi	Sex	Body is the base	

Utility of mahabhut has in the nourishment and treatment of sense organs, since its developed from these 5 elements is very well noticeable. Like the body with help of

pancabhauthika diet gets nourishment, hence the indriyas also. The power of sense organs is felt decreased in the absence of appropriate diet and results in deficiency.

This pancha mahabhut a theory was first appeared as an elemental part of cosmogenesis, where the final product was pancha mahabhut has and their arthas.

'bhuta' means 'bhusattayam' (one that exists)

Mahabhuta- 'mahant I bhoot ani mahabhoot ani' (grossness attained)

This theory is based on the hypotheses there exist only 5 sense organs and it responds to a particular type of stimuli. In this way all matters can be classified into no more or less than these five bhuthas. This panchamahabhuthas inheriting the qualities of trigunas from which all the inanimate and animate objects are evolved. For practical utility, modification of theories so as to keep the identity of science evolved the tridosha siddhant a which explains the functional aspects. Hence tridoshas are the innate forms of panchamahabhuthas. Since every matter (dravya) has some kind of guna and karma, tridoshas cannot remain apart from dravyas.

Caraka has concluded that all dravyas in universe (karya) are composed of panchabhuthas and entire creation is possible only through the karanadravyas (causal materials).

MOLECULE IN AYURVEDA-PANCHABHUTHAS?

A molecule is the smallest particle in a chemical element or compound that has the chemical properties of that element or compound. Molecules are made up of atoms that are held together by chemical bonds. These bonds form as a result of the sharing or exchange of electrons among atoms. 'Atoms are basic building blocks of any matter, combination of these atoms are molecules'

Keeping this definitions, it may be explained that tanmathras on combining forms bhoothas which may be correlated to atom level. Panchatanmathras indicates physical properties only while bhuthas indicate chemical and physical properties.

Panchatanmatra	Sabda	Sparsha	Roopa	Rasa	Gandha
Physical	Orbit	Valence	Electron	Proton	Neutron

They do not have any existence of its own as such they are in forms like H⁺, O⁻, P⁺ etc

Panchabhuta	Akasha	Vayu	Agni	Jala	Prithvi
Physical	Vaccum	Gas	Plasma	Liquids	Solids
Chemical	Hydrogen	Oxygen	Phosphorous	Nitrogen	Carbon

They have existence as atoms combined to form H₂O, O₂ etc

Possible correlations on seeking the definitions of these elements

Orbit-physical space where electrons move.

Vacuum -on a gross view

Hydrogen –fine, colourless, odourless & appears first in series of elements

Valence –measure of combining power with other atoms

Electron –negatively charged, sub atomic particle of every element, representing energy levels (kinetic energy)

Plasma- one of the 4 fundamental states of matter, created by heating a gas or strong electromagnetic fields.

Proton –subatomic particle in nucleus of every atom, positively charged, formed out of quarks which are not directly perceived, but only theoretical predictions based on their existence

Neutron-no net charge, sub atomic seen in all atoms, takes part in determining atomic weight of an element

Just like how electrons protons etc are found in every matter, similar is the view of dravya being composed of panchabhuthas.

This lay down the basic foundation of Ayurveda i.e. **“SARVAM DRAVYAM PANCHABHOUTHIKAM “**.

Panchabhuthas- both structural and functional constitution

Structural – both somatic and spiritual

Somatic

Doshas : Vata- akasha + vayu

Pitta- agni

Kapha- prthvi + jala

Dhatus : Rasa –jala

Rakta- jala + agni

Mala : Mutra- agni + jala

Pureesham- Prthvi

Spiritual

Manas is having guna and karma of its own and hence is also panchabhouthikam (dravyam).

Gunas : Satvam -akasham

Raja - vayu

Functional

Guna : Vishadam – prthvi + vayu

Guru – prthvi + jala

Ushna – agni

Karma : Grahi – vayu

Lekhana – vayu + teja

Adhogami (virechana)-prthvi + jala

Organogenesis

Hridayam – kapha + rakta

Jihwa- sleshma

In this context, it is to be noticed that it doesn't mean our science was unaware of living cells because the idea of cell was detailed in gamete description, where beeja (gamete), beejabhaga (its parts), bheejabhagavayava (organs) are mentioned. Foetus is combination of 5 existents (bhutas) and the 6th is chethana. Here it's told 4 sets of each

of 4 types of atoms (total 16 atoms) are taking part in the production of fetus. The 4 types are atoms of prtvī, āp, teja and vāyu.

These are just some of the examples. In this way every minute or subtle level of constitution is the pancha bhūta has and this is considered as the first form of life existence which is proposed to be the consolidation products of invisible formative units or tanmātras.

CONCLUSION

It is better to have a prospective approach to Ayurveda through the scientific reappraisals than a retrospective approach. Origin of life to the theory of biopoiesis and Ayurveda has quite resemblances. Initial proposals of spontaneous generation soon transformed into *omne vivum ex ovo* (i.e. every living organism come from a preexisting living thing) before arriving at theory of biopoiesis which proposes transitions like biological monomers to polymers to cells. Ayurveda Fundamentally proposes a few dictum, equally rephrasable to the modern statements, which are “*nasatovidhyatebhavo, nabhavovidhyatesatam*”. Also origin from *avyakta* to *vyakta* takes place through number of intermediaries. Ayurveda has described element of fire as *mahabhūta* before proposition of energy or matter transition by Einstein. Further own the concept of universe being composed of five basic elements only shows a conceptual similarity between modern science and Ayurveda with reference to the idea of substance generation.

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