



REVIEW ARTICLE

Conceptual analysis and revalidation of *Loka-purusha-samyasiddhanta* based upon evidences from contemporary sciences

Jairam K V^{1*}, Ajitha K², Anjali sivaram³, Abhilash M⁴ & Hakkem Panthappulan⁵

¹2nd year PG Scholar, ²Professor and HOD, ³Associate Professor, ⁴Assistant Professor, ⁵Assistant Professor
 Department of Kriya sharir, Government Ayurveda college, Kannur, Kerala, India

*Email: jairamkunissery@gmail.com

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Abstract

Loka purusha samya states that any living body is a miniature representing the universe. Human being is just a part of this universe. The fundamental principles of Ayurveda are also evaluating the same. Charaka has defined the relationship between *Loka* (Nature) and *Purusha* (Human) as *Loka-Purusha samyasiddhanta*. The interaction and exchange between *Loka* (Nature) and *Purusha* (Human) continue in a natural way it has impact on human body which may be healthy or diseased state. Susruta also opines that *purusha* is one of most important creations of universe similar to the *agni soma guna*. Dasha biorhythms are an essential component of homeostasis. we can evaluate that, alteration in the structure and function of universe plays a significant role in the etiopathogenesis of diseases in human. Pathology can be reversed to the physiological entity only by the consumption of substances available in the nature. It is quite evident that nature itself indicate the normal and abnormal phenomenon and their management. Here an attempt is made to elucidate this theory in different aspects of Ayurveda upon evidences from contemporary sciences.

Introduction

The theory of *Lok purusha samya* states that any living body is miniature model depicting the universe. Both of them composed of *panchamahabhutha*. All physical, physiological as well as behavioral characteristics are similar¹. Ayurveda as a personalized medicine has its own means to restore health, contrary to the many other field of medical science. Ayurveda is highly curtailed in prevention of diseases in many aspects as well as its conservative management. obviously, it had paid a noticeable view point of understanding the definition of health and how the health can be preserved by simple diet and regimen. While dealing with disease pathogenesis and prognosis Ayurveda have multidimensional approach. *Dasa vidha pareeksha* is an important diagnostic tool and *Prakriti* is one among them. Ayurveda links the microcosm and macrocosm through the individual – cosmos principle known as *loka-purusha-samyasiddhanta* while dealing with *purusha* (individual). Ayurvedic fundamental principle can be classified as those defining the composite dealing between the macrocosm and microcosm and those defining the complex interaction of human body.

The conceptual review of *loka* (universe), *purusha* (individual), and *samya* (similarity) is an Ayurvedic fundamental principle which dealt with different living system in addition to health and disease. Human body is a miniature model of universe with all its composition and functions. The constituents of the cosmos and those of the little cosmos within the human being are similar, and their dealing with the environment are also same. The origin of life according to Ayurvedic fundamentals is through *sankhya darsana* (philosophy), explains the life is derived from *Avyakta* (invisible) building material; which becomes *vyakta* (visible) form through complex interaction of condensation as well as permutations and combination of different elements known as *mahabhuta*. *Ahankara* also plays an important role in this. From the Evidences of human perception as a subjective approach, the *mahabhuta* are counted to be five because the smell, taste, colour, touch and sound are perceived only by the sense faculty nose, tongue, eyes, skin, and ear respectively. There is no other means of direct perception. This basic idea and evolution of life from *sankya* school has become the basis of theory of *panchamahabhuta*². Each and every living and non-living being composed of the same primary elements (*panchamahabhuta*) where a combinational difference among these elements in different objects result in the development of varied physical or physiological entities. The central dogma of Ayurvedic medicine derives this basic idea in the therapeutics and preventive protocols that mandates a personalised choice of food and drug for a desired effect of health maintenance and recovery from the diseases. The operation of this principle is quietly a hardship without perceiving the similarity between man versus universe.

Purusha is the modification of *mahabhuthas*, thus *purusha* is part of the universe. Whatever material and spiritual phenomena are present in *purusha*, the same are contained in universe. The universe has innumerable components in the form of birds, animals etc. *Purusha* has also innumerable components in the form of *sira, snayu, dhamani*.³ Here an attempt is made to classify this theory in 4 different aspect namely,

- 1) Historical aspect
- 2) Philosophical/spiritual perspective
- 3) Health perspective (applied aspect)
- 4) Social aspect.

In this article the health aspect has been given emphasis.

Objectives

- 1) To enlighten the health aspect of *Loka Purusha Samya*

Siddhanta in different fields of Ayurveda

- 2) To highlight the importance of this theory in Ayurveda

Materials

All Authentic Ayurvedic Texts like *Bruhatrayee* and *Laghutrayee* were used. Search engines are also used.

Methodology

*Loka Purusha Saamya Siddhanta*⁴

Acharya Charaka has mentioned this *Siddhanta* in *Sharirasthana* stating that universe resembles the constituents of human body and vice-a-versa. It resembles not only normal but abnormalities too. These resemblances were observed by Acharyas and they have mentioned it at many places for diagnosis or identification of the disease which are difficult to diagnose as well treatment. This *Siddhanta* helps in pursuing the things in simpler manner.

Health aspects

Table 1 *Rachana shareera* aspects: Structural similarity⁵

 	<p>Hair-Banyan tree</p>	<p>Cerebrosides, terpenoids, nardal, jatamansicacid, nardal - improves hair growth</p>
 	<p>Alveoli - Grapes</p>	<p>Polyphenols and antioxidants prevent lesions of alveoli</p>
 	<p>Acne - Silk cotton tree</p>	<p>Significant activity against propiobacterium acnes</p>
 	<p>Stomach- garlic cloves</p>	<p>Digestive and Carminative</p>

	<p>Kidneys- Peas</p>	<p>Nephroprotective Diosgenin,protodiosin, Diu- retics and lithotriptic</p>
	<p>Thyroid Bauhinia diffusa</p>	<p>– Rutoside flavonoids, kaempferol glycosides Increase in serum T4 T3 level</p>

method more systematic, standardise, precise and more accurate. However, inspection reveals the most important diagnostic aspect in skin disease by evaluating the nature, type, distribution, colour of the lesion. However, naked-eye inspection and palpation are always the most important in acquiring information on the nature of skin lesions, including their distribution, form, color and shape. In Ayurveda, *TrividhaParikshanPaddhati* was described by Acharya Charaka and Sushruta i.e. *Darshana, Sparshana* and *Prashna*. By using this, *DarshanaParikshanPaddhati* referring *Loka Purusha Samya Siddhanta* can help in the diagnosis and management of skin disorders with suitable examples given below⁶.

Table 2 Different skin disorders and its similarities

	<p><i>Kapala</i>=Lepra reaction</p>	
	<p><i>Udumbara</i>=allergic vasculitis</p>	
	<p><i>Rushyajihwa</i> = Melanoma</p>	
	<p><i>Kakanaka</i> = Toxic epidermal necrolysis</p>	
	<p><i>Pundarika</i> = Discoid lupus erythematosis</p>	
	<p><i>Eka kushta</i> = Ichthyosis vulgaris</p>	

In roganidana and vikrutivijnana

Skin is the largest organ of the body which is visible by naked eye. Skin disease is marked by its variety and visibility. Skin disorder may result from any systemic disease and it may be helpful not only in diagnosis but also in further appropriate management and predicting the prognosis. The most important method of skin examination is direct inspection. The recent developments in the biochemistry and immunology had made the integumentary examination

In Swasthavritta aspects

Janapadodhvamsa literally means destruction of communities or groups of settlements. Epidemics, endemics and pandemics outbreaks influence mankind since time immemorial. Susruta and Charaka explains these as *aupasargikaroga* and *janapadodhvamsa* respectively.

Charaka pointed out in *janapadodhwamsa* as vitiated *vayu* (air), *udaka*(water), *desha* (land) and *kala* (season) were vital factors responsible for diseases. Sushruta

explains this concept while discussing *ritucharya* (seasonal regimen) under the *Maraka*. [Su.Sa.SutraSthana 6/17]. In *Ashtangasangraha*, *janapadodhvasa* was described in the chapter *ViruddhannaVijnaniyam*. The therapeutic importance incorporated in *roganutpadaneeya* in *Ashtanga hridaya*.

Covid 19 pandemic in the current scenario is one among the *janapadodhwasavikara*. We can also contribute other communicable diseases in this context. This gives an idea about the theory of *loka* is vitiated and *purusha* also vitiated⁷.

Rasa sastra perspectives

Different *rasa* drugs are correlated with the *navagraha* is an example of *loka purusha samya*.

Relative abundance of bio-metals in living body follows abundance of elements in earth crust is a best example of this theory⁸

During evolution elements which are commonly and enormously present in the earth crust seemed to be less toxic or non-toxic. For example, elements like Lead, Cadmium, Arsenic and Mercury which are seemed to be toxic without proper purification process are rarely available in the earth crust. The crustal availability of these elements are 0.08, 0.024, 0.0018 and 4×10^{-5} approximately in the number of atoms respectively per 10,000 atoms of silicon. During evolution of life the organisms neither utilize these elements nor turned down any mechanism to cope up with them. Gradually these elements becoming toxic to the body. At the same time relatively more available elements habituated by the human being had entered into the ecosystem through food chain and food web and shown to be less or non toxic. If we accept the theory of evolution then the cycle may progress like this.

“Poisons → Tolerable Impurities → Useful Elements → Essential Elements”

Thus, today's poisons may be substituted to essential elements in the future by habituation.

Generally, commonly and abundantly available elements in the earth crust are seemed to be non-toxic to the body. But scarcely available are seemed to be toxic because it is not habituated by the human body.

Dravyaguna perspective

Ahara and *oushada* are made up of *panchamahabhuta*; Human body is also made up of *panchamahabhuta*. This itself elucidate the *loka purusha samya*.

Rasa, Guna, Veerya, Vipaka and *Prabhava* are the major aspects of Ayurvedic pharmacodynamics. It works

under the principles of *samanyavishesha, panchamahabhuta* and *lokapurusasamya sidhantas*. All of these are interlinked by one another like beads over a string.

Treatment aspect (kaya chikitsa perspective)

Kleda is an important concept in Ayurveda that is vitiated in the diseases of *mutraghata, prameha, kushta* and *visarpa* in an ascending order. *Ap dhatu* is a common factor in the atmosphere which can simulate to the *kleda*. This is a direct epic of *lokapurusasamya*.

As an example, for this *kledahara* treatment principle like *chandraprabha, triphala* shows good results in these diseases.

Table 3. Ayurvedic Psychology in cognitive correction during counselling⁹

Counselling – Goals	Counselling – Means	Universal phenomenon
Acceptance	Education and Persuasion	Imbibition
Internal locus of control	Restrictions	Surface tension
Feeling of oneness	Training and Environment restructuring	Cohesion and adhesion
Cognitive refinement	Modeling and Enablement	Solid-Liquid-Gas Depends on availability of Energy.

Cognition is considered as higher mental function of brain. The behaviour of an individual is determined by the underlying cognitive process. In situations of trauma or disaster the errors in cognitive process leads a person into states of mental ill health. Sociability of a person and the cohesion he maintains with the world around him, becomes a major factor in grief recovery. This principle of *Loka purusha sidhanta*– doctrine of man and universe relatedness provides the key elements necessary for building up a social capital. The cognitive correction aimed is a state of detachment and expanded self-awareness. This further reduces the incidences of grief due to transient losses in life.

In shalakyaroga

In *shalakyaroga* considering *sareera* as *loka* and eye as *purusha* we can adopt the treatment modalities. In the treatment of diabetic retinopathy *pramehachikitsa* can be adopted and in glaucoma, antihypertensive drugs can be administered.

Physiological perspectives

Chronobiology

The earth's rotation and revolution results in seasonal variation as well as day-night cycle had continuous impacts on the evolution of living organisms. Earth crust involve many

cycles such as carbon, nitrogen, oxygen and water which plays a vital role in evolution of life. Biogeochemical cycles which exchange materials among inanimate and animate components of Earth. As a result of that organism have developed biological clocks which helps successful performance of activities over the whole day. The ability of adaptation elucidates the cyclical changes and physiological harmonization in living organism. Chronobiology (the study of the biological rhythms in plants and animals) is a multidisciplinary field where biological rhythm and its relationship with day-night cycle, seasonal variation had been documented. This reveals that Ayurvedic fundamental principles can be incorporated in the field of chronobiology especially dealing with biological rhythm. The various 24-hour rhythms in human body become more evident and influence the principles of *loka-purusha samya*.¹⁰

Dosha biorhythm

Biological rhythm is an important component of homeostasis. Circadian rhythms are driven by the internal clock located in the suprachiasmatic nucleus of hypothalamus. Circadian rhythms are adaptive to the 24-h day-night cycle mostly by the time cues. Timed bright light and the melatonin produced by the pineal gland will substitute the timing of circadian rhythms and can be used to treat biological rhythm disorders. Circadian rhythm disorders either manifested as sleep disorders or manifest as other major pathology affecting the different systems of human body. Menstrual cycle irregularities as well as seasonal diseases are one among them which of greater importance.

Ayurvedic physiology (*kriyasareera*) explaining the *doshic* biorhythm a major aspect of control and coordination of body. *Tridosha (vata-pitta-kapha)* is the major cause for disease manifestation (disequilibrium state) as well as healthy state (equilibrium state). The dosha variation according to time, age, season and digestion is well explained in Ayurvedic physiology and is given in the following graph. This can be interlinked to the emerging chronobiology to a great extent

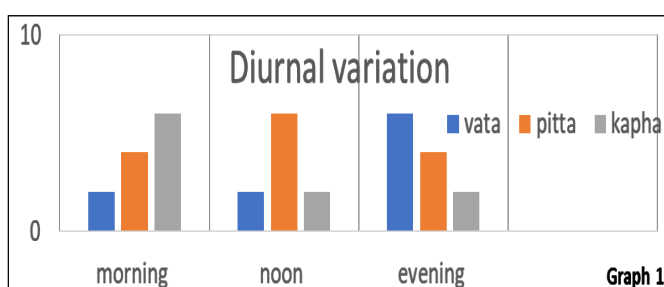


Fig 1: Dosha variation in diurnal rhythm

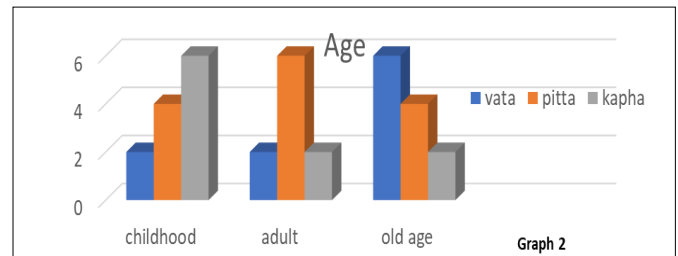


Fig 2. Dosha variation according to age

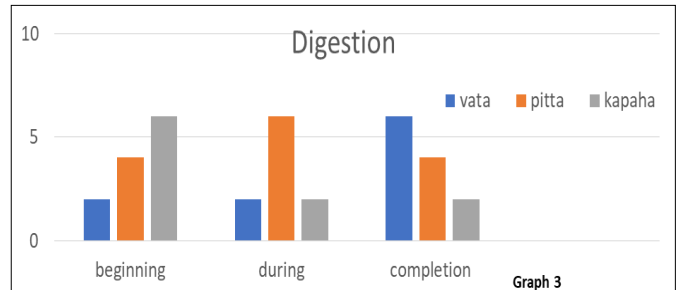


Fig 3. Dosha variation according to digestion

Chrono pharmacology versus Ayurvedic aushadhakaala

The physiological entity including those influencing pharmacokinetic aspect such as drug absorption, distribution, metabolism and elimination, show significant daily variations. It includes : hepatic blood flow, glomerular filtration rate, renal plasma clearance, renal plasma flow, urinary volume and pH, heart rate, blood pressure, organ perfusion rates, acid secretion in the gastro-intestinal tract and the time of gastric emptying. Many drugs shows rhythmic variations in its pharmacokinetics and pharmacodynamics mechanism. Exploitation of this phenomenon, is of great importance in the current era together with identification of target tissue sensitivity.

The onset, progression and manifestation of diseases such as bronchial asthma, angina pectoris, myocardial infarction, cerebro-vascular accidents and ventricular tachycardia are depending upon the circadian rhythm to a certain extent. Pharmacological variations of therapeutic response of 24-hour cycle is known as chrono-pharmacology. Which have proven better result for cardio vascular active drugs like nifedipine, enalapril, verapamil and digoxin, anti-asthmatics, anticancer drugs, local anaesthetics, psychotropics, antibiotics and analgesics. Moreover, it is quite evident that dose-response can be significantly modified by the time in a day. While taking circadian time as a variable it plays a significant role in the drug pharmacokinetics as well as pharmacodynamics.

Time is considered as *kala* in Ayurveda which is an important aspect of *loka* (universe). Ayurvedic *aushadhakaala* which accounts for intake of medicines in different disorders is also dependent upon the time of which it is administered.

Why there is variation exist even if *loka* and *purusha* are similar?

Pharmacogenetics, Pharmacogenomics and Personalized Medicine: and scope of Ayurveda¹²

Over the last 40 years the genetic basis of a differential response of drugs had been understood as a limited number. This knowledge enlightened the hypothesis that individualized drug therapy would be possible for many of the systemic disorders for its prevention and management. This leads to the emergence of pharmacogenomics which deal with the response of therapeutic drugs is in close vicinity of the genetic attributes of an individual. Pharmacogenetics is the study of genetic variation affect the disposition of drugs including their absorption, assimilation, excretion, transport in the body and their safety, efficacy and bioavailability. Emerging of these techniques leads to the prevention of adverse drug reaction and drug toxicity. Besides it will increase the bioavailability and make the drugs into conservative and cost-effective individualised formulations. From this dilemma Personalised medicine arises and it will improve the health care outcome as an alarming rate.

Ayurveda itself a personalised medical system which explains *dashavidhapareeksha* as one among the diagnostic tools of disease and therapeutic aspect are specific to the individual through its *panchaboutika* and *tridosha* theory. Further research is needed to establish Ayurvedic medicine can influence the single nucleotide polymorphism which is a major attribute in pharmacogenomics. Although *loka* (universe) aspects resembles the *purusha* (individual); genetic variation of an individual made him a different from others. So we need to widen our therapeutic approach by considering both the genetic variation as well as individual cosmos similarity (*loka-purusha samya*) for the prevention and management of diseases.

Conclusion

The individual and cosmos are continuum. Whatever exist in the universe, the same exist in the individual. Reciprocally, whatever constitutes the individual exist in universe. This theory can be applied in a variety of clinical scenarios for better understanding and realization of Ayurvedic concepts and practices. Above all, the physiological interpretations using the evidences from contemporary sciences open up new vistas in the diagnostic and therapeutic sectors of Ayurveda

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