



AN AYURVEDIC OUTLOOK ON PRAKRITHI AND MODERN GENOMICS

Ayurveda

Karthika R Nair

Assistant Professor, Department Of Roga Nidana Evum Vikriti Vigyan, Sri Jayendra Saraswathi Ayurveda College And Hospital, Nazrathpet-600123, Chennai, Tamilnadu, India.

ABSTRACT

Introduction: Ayurveda is a life science that gave equal importance to the preventive and curative aspects of life. The preventive aspect deals with different *Charyas* including *Dinacharya*, *Rithucharya*, etc. But merely following these, in general, will not be beneficial it should be matching with one's bodily constitution then only it will serve the purpose. This constitution comprises the "physical body" and "mental body". *Prakrithi* means "nature" or the natural constitution of the human body¹ which can be correlated to the genomic composition. Genomic studies in disease research, allow researchers to better understand the genetic bases of drug response and disease and *Acharyas* included *Prakrithi* in *Rogi Pareeksha* for establishing the same. **Methods:** Comparison of genesis and factors that influenced the formation of *Prakrithi*, the role of *Prakrithi* in the physical, physiological, and psychological domain, and the role of *Prakrithi* in disease genesis, diagnosis, and management in relation to modern genomics.

KEYWORDS

Prakrithi, Genomics, Rogi Pareeksha.

INTRODUCTION:

Prakrithi is a non-pathological status of *dosha* inherent in the individual from birth to death, which becomes distinct since the time of fertilization, mediated by maternal and paternal activities². It refers to the genetically determined anatomical, physiological and psychological constitution of an individual, and also determines the response of an individual to environmental factors and drugs, making it one of the earliest known concepts of preventive and personalized medicine.

The *Prakrithi* of an individual is determined by various factors such as the dominance of *dosha* in *Shukra* and *Shonita* during conception, season and condition of the uterus, food, and regimen of the mother, and nature of *Mahabhuta* comprising the fetus³. Ayurvedic classics describe 7 types of *Prakrithi* – *Ekadoshaja* (*Vata*, *Pitta*, and *Kapha*) *Samsrishta* (*Vata Kapha*, *VataPitta*, *PittaKapha*), and *SamaPrakrithi*.

While describing *Roga Pariksha acharyas* gave due importance to *Prakrithi Pariksha* (examination of *Prakrithi*), it is the genetic background of Ayurveda that should be studied in detail to prevent genetically prone diseases and maintain health of healthy. A primary goal of health care is to prevent disease or to detect it early enough that interventions will be more effective.

Early detection of disease has the potential to reduce both morbidity and mortality. So, *Prakrithi* should be analyzed and one has to opt lifestyle appropriate to his *Prakrithi* to prevent the manifestation of disease.

Formation Of Prakrithi:

According to Ayurveda, all are composed of *panchamahabhutha* in their subtle levels of gross elements of the universe like *akasha*(space), *Vayu*(air), *Agni*(fire), *Jala*(water), and *Prithvi*(earth). Their combination will produce three subtle elements in the body that manage the body's normal structure and functioning called *Dosha*. Three *Doshas* are *Vata* (*Aakaasa & Vaayu*), *Pitta* (*Agni*), and *Kapha* (*Jala* and *Prithvi*). The state of *Vatha*, *Pitta*, and *Kapha* in the sperm and ovum and the mental faculties of the parents during the time of conception determine the *Prakrithi* or the biological constitution of the progeny⁴.

Genome also includes an organism's complete set of genetic patterns which include DNA and its constituent which have a role in the development of structural and functional characteristics of an individual.

Bhela's Opinion On Prakrithi⁵:

Acharya Bhela has a different opinion about the formation of *Prakrithi* according to him women who consumed *Ruksha Ahara*, suppress *Vega* (urge of *AdhoVata* and *Mala*), and suffer from *Udavartha*, doing excessive sexual intercourse in *Rithu Kala* her ovum gets affected by *Vata* and when she got conceived by a *Vata Prakrithi* man the formed fetus will be of *Vata Prakrithi*. Similarly, *Pitta* and *Kapha Prakrithi* are formed.

Other factors which affect *Prakrithi* are geography, race/community, age of parents, lifestyle, and their disease condition if any.

Kashyapas Opinion On Prakrithi⁶:

Acharya Kashyapa classified *Prakrithi* on different grounds. He expressed the effect of time or *Kala* on *Prakrithi*.

He classified this constitution on basis of *Yuga*. This effect of time on an individual represents a typical personality despite any *Prakrithi*. In this case, *Kashyapa* classified the personality of an individual in context to his birth in a typical area of the century or *Yuga*.

Factors Affecting The Formation Of Prakrithi:

Prakrithi is the unchanging constitution of the body formed as a result of the most profound *Dosha* present in the maternal and paternal body during the time of conception. It was influenced by other factors too such as the nature of the season and condition inside the uterus (*Kala - Garbhashaya Prakrithi*), food and other regimens adopted by the mother during pregnancy (*Mathurahara Vihara Prakrithi*), sperm-ovum of the father and mother (*Sukra-Sonita Prakrithi*) and gross elements of the universe (*Mahabhuta Vikara Prakrithi*)⁷. These factors get afflicted with one or more of the *Doshas* which are dominantly associated with the above-mentioned factors. Therefore, the *Prakrithi* of some people is dominated by *Vata*, some others by *Pitta*, some others by *Kapha*, and others by the combination of two *Doshas*, and in some cases, equilibrium is maintained⁸.

1) Sukra Shonitha Prakrithi

This can be considered as:

- *Prakrithi of Sukra*.
- *Prakrithi of Shonitha*.
- *Prakrithi of Sukra-shonitha-Samyoga*

The *Dosha* which is dominant in *Shukra* and *Shonita* at the time of formation of the fetus will lead to the *Prakrithi* of the fetus.⁹

The fetus gets delivered easily in time in its well-developed form and without any pain if the sperms, the ovum, the uterus, and the timings (of sexual union and delivery) are in excellent condition and the woman during the period pregnancy takes a wholesome diet¹⁰.

The concept of *Shad Bhavas* in *Garbha* also emphasizes the importance of the theory of maternal and paternal influence in the constitution of an offspring¹¹.

2) Kala Garbhashaya Prakrithi:

This can be considered as:

- *Prakrithi of Kala* (time): the predominant *Dosha* in the form of *Rithu* at the time of conception.
- *Prakrithi of Garbhashaya* (uterus): *Dosha* is predominant in the uterus at the time of conception.
- There are various effects of the time factor on the union of sperm and ovum.

Planning of conception is important for healthy progeny. It is mentioned that according to the day of *Rithukala* the quality of the ovum will change so union in the even days after 4 days of *Rithukala* after the bleeding phase will lead to a male child and *ayugma* (odd days) will lead to *Sthree Praja* (female child) and if got conceived in initial days of *Rithukala* after bleeding phase it will lead to defective progeny¹².

3) Mathur Ahara Vihara Prakrithi:

The food and regimen of a lady will influence the health and well-being of the fetus.

Prakrithi of a baby depends upon the diet and behavior of a male and female¹³.

While describing the *Varna* of the fetus *Acharya Sushruta* explained the *varna* of the fetus depends upon the food of the mother during pregnancy.¹⁴

4) Maha Bhootha Vikara Prakrithi:

The chief decisive directives of *Prakrithi* are '*Prakrutha Dosha*'. They descend directly from *Pancha Mahabhootha*. *Prakrutha Dosha* is the product of the *Panchamahabhootha* combination (महाभूतविकार) and it will decide the *Prakrithi*¹⁵.

Multiple influencing factors of hereditary inheritance, maternal diseases, habits and drug reactions, and environmental effects on genetic material and genomics changes related to that leading to congenital defects to mutation are topics of study in structural and functional genomics.

Role Of Prakrithi In Physical, Physiological, And Psychological Domains:

Prakrithi is defined basically as '*Dosha-Prakrithi*' or '*Deha-Prakrithi*' due to its *Anushayatwa* to *Dosha*, *Anushaya* means close connection or attachment. Due to the nonpartisan bond, the qualities of *Dosha* are expressed on the body. This is called *Deha Prakrithi*. These expressions are by way of structure or morphology, function or physiology, or mental reactions or psychology.

When we go through the 3 different terms personality in biology, the phenotype in genetics, and *Prakrithi* in Ayurveda, these are defined as an expression of a person in context to morphology, physiology, behavior, and relation to ecology. So, these can be considered synonyms.

Prakrithi is grossly classified into *Sharirika*(physiological) and *Manasika*(psychological) *Prakrithi*.

Sharirika Prakrithi is classified into seven subtypes according to the predominance of *Dosha Vata*, *Pitta*, *Kapha*, *VataPitta*, *VataKapha*, *Kapha Pitta*, and *Sannipathaja*.

Manasa Prakrithi is mainly of three types *Satwika*, *Rajasika*, and *Tamasika Prakrithi*.

Satwika is classified into seven subtypes *Bhrama*, *Arsha*, *Mahendra*, *Gandharva*, *Yamya*, *Kubera*, and *Varuna* named according to the deities as a person has a close similarity to their character.

Rajasika Prakrithi is of 6 subtypes *Asura*, *Sarpa*, *Shakuna*, *Rakshasa*, *Pishaja*, and *Preta*.

Tamasika Prakrithi is of three subtypes *Pashu*, *Matsya*, and *Vanaspathya*.

Prakrithi is broadly classified into two types:

1. *Doshaja* (due to the predominance of *Dosha*, mainly physical).¹⁶
2. *Gunaja* (due to the reflection of psychological effects).¹⁷

Prakrithi was classified according to yuga in Kashyapa:

1. *Prakrithi* of a person borne in Aadiyuga, Devayuga was not read anywhere and hence is not known.
2. *Prakrithi* of a person borne in Kritayuga was of Narayana type.
3. *Prakrithi* of a person borne in Tretayuga was of ArdhNarayana type.
4. *Prakrithi* of a person born in Dwaparayuga was of Kaiśka type.
5. *Prakrithi* of a person born in Kaliyuga was of Pradñaptipīṣita type.

By these, it is understood that *Prakrithi* is determined by both Intra and extrauterine factors.

Role Of Prakrithi In Disease:

Acharya Susruta said that a living organism born in poison cannot be influenced by the toxic effect of the poison because that poison becomes *Satmya* (homologous) to the individual. Similarly, the predominance of *Dosha* at the time of fertilization does not cause any adverse effect because it is *Satmya* to the *Garbha*¹⁸. *Susrutha* adds to it by stating that *Dosha Prakrithi* remains constant throughout life without any vitiation and reduction, till death¹⁹.

Some persons are of *Vatika Prakrithi*, some of *Paittika Prakrithi* and some of *Kaphaja Prakrithi*, and others are of *Dwandwaja* (predominance of two *Doshas*) and yet another of *Sama Prakrithi* (equilibrium of all the three *Doshas*). Persons of *Sama Prakrithi* is always healthy and of *Vatika* etc. always ailing. *Sama Prakrithi* is excellent, while mixed *Prakrithi's* are condemnable; the persons of *Vata*, *Pitta*, and *Kapha* predominance are said to be inferior, mediocre, and good respectively. This is because individuals of other *Prakrithi's* are said to be prone to disease because they have to use only such diet and mode of life which is congenial to their physical constitution while those of *Sama Prakrithi* can use any diet etc.²⁰

Along with this in *Nidana* of diseases like *Pandu*, *Atisara*, etc *Acharya* specially mentioned the susceptibility of certain *Prakrithi*.

Ayurveda emphasizes prevention as well as management of the disease. The prevention part is taken care of by advising *Dinacharya* (daily regimens), *Rithucharya* (seasonal regimens), and *Pathya* (dietetics).

A generalized description is given initially then *Acharyas* specifically mentioned do and don'ts for each *Prakrithi* realizing its subjective importance.

Today the main disease entities faced by humans came under the category of lifestyle disorders due to metabolic imbalance. *Prakrithi* and lifestyle disorders are closely correlated with each other and the lifestyle managed as per the type of *Prakrithi* will have a significant role in the prevention of metabolic imbalance and management of lifestyle-related disorders.

As by understanding the concept of *Prakrithi* one can foresee the health standards and disease susceptibility the concept of genomics will predict the relation of genes and environmental factors, behavioral patterns, etc.

All human beings are 99.9% percent identical in their genetic makeup. Differences in the remaining 0.1% hold important clues about the causes of diseases. Having a better understanding of the interactions between genes and the environment is helping us find better ways to improve health and prevent disease.²¹

DISCUSSION:

Sharira Prakrithi is a non – pathological status of *Doshas* formed in the body of an offspring during the time of conception. It is the non-pathologically aggravated *Dosha Avastha* formed by the involvement of maternal, paternal, and environmental factors. It is initiated during the time of fertilization and the process of formation of *Prakrithi* depends on the intrauterine events also

This *Prakrutha Dosha Avastha* can't be pathological and will not have any vitiation and depletion but it will predispose to ailments when one is doing its diet and lifestyle opposite to this *Dosha avastha*.

Pariksha or examination of the patient is the foremost step of disease identification and *Prakrithi* is the first and main step of *Rogi Pariksha* as it is understood that Pathology is nothing but the change in normalcy so a physician should be well-versed in normalcy to identify the error or change.

This will help in predicting the susceptibility, diagnosing, and managing a disease entity with much ease and care.

CONCLUSION:

Prakrithi can be identified mostly by the descriptions of *Sharirika*, *Manasika*, and *Anookatwa* (resemblance) to certain birds and animals

(as per Susrutha). A thorough assessment of these features will give an overall idea about the predominant *Doshik* status of the body.

A wide spectrum of scope in scientific research is there in the *Prakrithi* as it is the ayurvedic concept of Genomics and personalized medication. Identification of risk factors and the chance of predisposition to inherited diseases can do a major role in balancing the health standard of society.

REFERENCES:

1. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.p.277.
2. Bhadanta Nagarjuna's Rasavaisheshikasutra, Narasimha Bhaashya, In: N.E. Muthuswami, editor. Trivandrum: Ayurveda College Publication Series; Pp-253.p.10.
3. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi; 2013.Pp-738.p.263.
4. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.pp.293.
5. Bhela Bhela Samhita, English commentary by Dr.KH. Krishnamurthy, edited by Prof. Priyavrat Sharma, 1st Edition, Chaukhambha Vishwabharati Oriental, Varanasi, 2008.Pp-660.pp.182-83.
6. Vriddha Jivaka, Kashyapa Samhita, Revised by Vatsya, Sanskrit introduction by Pandit Hemaraj Sharma, with Vidyotini Hindi Commentary by Shri Sayapala Bhgacharya, 10th edition, Chaukhambha Sanskrit Sansthan, Varanasi, 2015, Pp-364.pp.94.
7. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.pp.277.
8. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.pp.52.
9. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.pp.277.
10. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi; 2013.Pp-738. pp.302.
11. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi; 2013.Pp-738. pp.313.
12. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.346-47.
13. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.349.
14. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.348.
15. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.362.
16. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.pp.277.
17. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.p.323.
18. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.362.
19. Sushruta, Sushruta Samhita, Nibandhasangraha commentary by Sri Dalhanacharya, edited by Vaidya Jadavaji Trikamji Acharya, Chaukhambha Sanskrit Sansthan, Varanasi; 2013.Pp-824. pp.362.
20. Agnivesha. Charaka Samhitha revised by Charaka and Dridhabala with Ayurveda Deepika commentary by Sri Chakrapani datta edited by Vaidya Jadavaji Trikamji Acharya, Published by Chaukhambha Prakashan Varanasi;2013.Pp-738.p.52.
21. Khoury MJ, Little J, Burke W. Human genome epidemiology: A scientific foundation for using genetic information to improve health and prevent disease. 1st ed. USA: Oxford University Press; 2003.