ROLE OF QUANTUM BIOPHYSICS IN EXPLORATION OF FUNDAMENTAL PRINCIPLES OF RASAPANCHAKA IN DRAVYAGUNA: A REVIEW

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ABSTRACT

Over last decade, phyto-chemistry has taken a lead in exploration and understanding concepts of Dravyaguna including Pharmacokinetic and Pharmacodynamic activity of herbal drugs, finding its’ way in drug discovery and new drug development systems. But in spite of these advancements, science behind production of phytochemistry, which also runs rationale for exploration of fundamental principles of Dravyaguna, is the science of Quantum Biophysics. Hence, a conceptual study was done encompassing literature review from Ancient Ayurvedic texts and Quantum Biophysics and impact of the latter via study of Earth’s electromagnetic signaling on plant growth followed by further exploration of concept of Rasapanchaka through the language of Quantum Biophysics. The effort of this study is to commemorate, the biophysical approach of electromagnetic signals towards plants which is rightly explicated in Ayurveda as Prasppnda (Vibrations). Moreover, it helps one to attain knowledge of plant growth with a purview of biophysical phenomenon of Schumann Resonance and Plant Bioacoustics which has been very well documented in Ayurveda as Lokasanchasya Vayu and attributes of Vayu as Udabhan respectively. In a nutshell, this study attempts to propose a hypothetical systematic elucidation of growth of plants right from germination till its complete development as explained in Classical texts of Ayurveda through the Bio-physical lens. This theory will have a pivotal role in understanding role of Quantum biophysics in plant growth same being documented in Ayurveda texts, thereby, expounding the concepts of Rasapanchaka in Dravyaguna, which in turn will be helpful in improving drug development systems and in providing better therapeutic effects.

Keywords: Dravyaguna, Rasapanchaka, Quantum Biophysics, Schumann Resonance, Plant Bioacoustics.

INTRODUCTION

Ayurveda is a science which deals with the treatment of Shaddhatavatamak Purush which consists of Panchamahabhoot (five basic elements and soul) and Atma (consciousness)1. It is still a matter of mystery in how matter and consciousness interact with each other to give birth to life. In Quantum physics, these answers are to a certain extent given in the terminologies of energy, frequency and vibrations. When we go into the details of Theory of Vibrations, we come across to the state that entire universe is in a state of certain vibrations2. In Ayurveda, similar terminology to describe these vibrations is “Prasppnda” Prasppnda literally means that which is pulsating, and this is the attribute of Vayu3. So precisely, Vayu is the responsible entity for all the vibrations of the universe.

As we discuss about treatment options of Shaddhatavatamak Purush, in Ayurveda, herbs form the integral part of the treatment. As already aware, plants are antaschetan (non locomotory living beings with inner consciousness) and human beings are bahirantaschetan (locomotory living beings with inner consciousness), plants are rather incomplete human beings or in other words if we see the evolution of living beings, humans have borrowed consciousness from plants. As everything in this universe is formed out of Panchamahabhoot, so are plants and hence, in order to have effective treatment options via plants source, it is mandatory for us to have healthy species of plants.

In today’s era, with recent advancements, treatment options via plant source are done by studying the phytochemistry of plants. The leading compounds with the plants are fractionated via different analytical methods and are tested for their clinical efficacy through various research trials. Pharmacokinetics and pharmacodynamics of these compounds are studied via in vitro, in vivo studies and thereafter followed by clinical trials of drug research. These studies have enriched the area of Dravyaguna vigyan (branch of Ayurveda) which deals with study of materia medica of medicinal plants used for health benefits along with study of its Fundamental principles of actions) with the enhanced knowledge of pharmacological activities of the herbs. Hence, along with all the allied sciences like Botany, Plant Anatomy, Plant Physiology, Plant Toxicology etc. drug research in view of its phytochemistry in order to study its pharmacological activities has found its own way in the studies of Dravyaguna vigyan. Moreover, studies of drug interactions have paved its way to study the synergistic as well as antagonistic activity with allopathic medicines for example, Piperine isolated from Pippali (Piper longum) acts as a Bio enhancer giving rise to increased drug bioavailability of Rifampicin given as anti-Koch’s Treatment4. But while looking for the pros of the phytochemical analysis, we also come across the limitations of the study like as the established example of Reserpine isolated from Sarpagandha (Rauwolfia serpentina) causing extra pyramidal side effects when this fractionated compound is given alone5; on the contrary, no side effects are observed when Sarpagandha is given as an entire herb. Hence, it is known that despite advancement of sciences and incorporation of phytochemical studies in the subject of Dravyagunavigyan, Ayurveda believes in holistic approach of usage of herbs.
Furthermore, when we come across the details of reasons of production of various phytochemicals, plant prepares this chemistry within themselves only in response to environmental signals. In other words, it can be put forward that phytochemistry is the offshoot of the science of biophysics. So, in order to study the dravya (an entity encompassing the attributes of quality and action), right from its germination, production of phytochemicals and to its karmakuta (action of drugs) through its Rasapanchaka (Rasapanchaka consists of Rasa meaning taste, Guṇa meaning attributes, Vipaka meaning bio-transformed taste, Veerya meaning its Potency, Prabhava meaning which is an exceptional activity or inconceivable potency), we need to peep into the basic science of Biophysics which forms the rationale behind the entire study. Therefore, this conceptual study is an attempt to provide a systematic elucidation of the importance of Biophysics in the study of subject of Dravyaguna Vigyan.

Literature review

Concept of Lokasanchari Vayu (Geomorphic Field - Schumann Resonance) on Plant Growth

The Geomagnetic field is the magnetic force field that surrounds the Earth. These are Earth based frequencies which protects the planet from solar flares. Every life on this earth is immersed upon the Earth. Every life on this earth is immersed in/around the Earth. Hence, also rightly attributed as Pravartakchesanaamuchchangunanam (the one who is responsible for causing all action). Niyanta praneta ch manasa (the one who controls mind), Sarvindriyamaanudihjoka, Sarvindriyaranamaahbijvadha (the one responsible for perception of all sensory actions to the brain)18

The latest discovery of Quantum Vibrations states that there is presence of “microtubules” inside the brain neurons and it is these vibrations within the microtubules which are recorded by EEG19. This instance just illustrates that matter is just a projection of these vibrations. In Ayurveda, the concept of vibrations within human body is well acquainted with the concept of Vata dosha / Sharirgata Vayu (principle described in Ayurveda which controls movements within the body) as it is the only Dosha which possesses the ability to move “Gati”16. Moreover, it is also known to be responsible for all “chesha” (actions) as it possesses the attribute of producing vibrations within the body in combination of other substances17. Hence, also rightly attributed as Pravartakchesanaamuchchangunanam (the one who is responsible for causing all action). Niyanta praneta ch manasa (the one who controls mind), Sarvindriyamaanudihjoka, Sarvindriyaranamaahbijvadha (the one responsible for perception of all sensory actions to the brain)18

Concept of Vibrations in Dravya

Ayurveda recognizes Dravyakarmukta (pharmacological action of Drugs) through Rasapanchaka. The basis of Rasapanchaka in terms of Vibrations can be understood by the instance of Katuveera (Capsicum annum) which produces various effects on the body and mouth with its ingestion of as Katu Rasa vibrations are perceived via tongue. Moreover, the ushna (hot) and tikshna (penetrating) gunas of Katuveera are also perceived despite dravya only being in contact with the tongue. Moreover, the Ushnaveerya of this dravya is also perceived via the gunas. These vibrations arising post digestion effect of Katuveera (pachan) is perceived via its Vipaka. In a nutshell, if we look deeply into Rasa, Veerya, Vipaka entire concept revolves around Aghinmahabhoot (in this example of Katuveera) and on its attributes that is the Guṇas of the Mahabhoot. The guṇas (attributes) of all dravyas (matter) with their specific composition of that Mahabhoot (Basic five elements – Earth, Water, Fire, Air, Ether) as per the law of Vyapadesha Bhuyasa (predominance of one element in amalgamation with other elements)19 have the potency of generating the respective vibrations which are present in the dravya and the same action in generated in the human body on ingestion. The concept of Prabhav again can be understood by the production of specific vibrations from the Dravya and within the human body and accordingly, the therapeutic action of the Dravya is seen as for illustration, Virechan activity of Chetaki Haritaki even by standing below the tree20. All these vibrations within the Dravya exert their actions through Rasapanchaka which are nothing, but vibrations and same signals of vibrations are again perceived through Vata Dosha as it is known as Prasapanda. After citing of examples and understanding the concepts of Rasapanchaka, concisely, it can be stated that Rasa, Veerya, Vipaka and Prabhav are all Gunas lying within the Dravya.

DISCUSSION

The phytochemistry developed as secondary metabolite in plants is in response to environmental signals which the plants receive. But the effort of this study is to commemorate, the Biophysical approach of electromagnetic signals towards plants, phytochemistry only being the offshoot, which is rightly explicated in Ayurveda. Right from Germination of seeds, till plant growth and development including the inflorescence, geomagnetic field or the Schumann Resonance is responsible
which is narrated as Lokasanchari Vayu in development of Rasapanchaka of Dravyas. Moreover, it helps attain knowledge of plant growth with a purview of Biophysical phenomenon of Schumann Resonance and Plant Bioacoustics including the production of phytochemicals in response to environmental signals. The science of Plant Bioacoustics helps us to understand the udvahan that is perception of signals via sound emissions by the plant cells is also an attribute of Vayu. Moreover, the concept of all the Dravyas in the universe being Panchbhautik in nature, the vibrations of the specific Mahabhoot, Rasa, Veerya, Vipaka and Prabhav are all Gunas (attributes) lying within the Dravya. Material things are modifications of Panchmahabhuta (5 basic elements) and the aspects perceived are the Gunas. Accordingly, as all dravya are Panchbhautik, Vayu Mahabhuta is attributed with Chalatva and Praspanda (vibrations), which are Praspanda within the dravya. This attribute of Praspanda of Vayu is in the environment as Lokasanchari Vayu and in human body perceived as Sharirgata Vayu (Vata Dosha). This Lokasanchari Vayu (Earth’s Geomagnetic Vibrations (SR)) acts on the plants thereby regulating their growth and preparation of phytochemistry due to Udvahan (Plant Bioacoustics). These same vibrations are perceived by human body which is the attribute of Sharirgata Vayu which is rightly narrated as Pravartakchestanam (the one who performs all actions of Body), Sarveindriyanam Udyojakaha (the one who carries sensory signals), Sarveindriyanamabhibodha (the one who perceives different stimulation). Microtubules Vibrations in the Neurons, throbbing of Heart, Pineal Gland and its Photo neuroendocrine activity are just examples of this attributes of Sharirgatayau.

The lokasanchari Vayu and Sharirgata Vayu works with principles of Quantum Entanglement of Particles. With the lens of Quantum Physics, it is stated that entangled particles remain connected so that actions performed on one affect the other, even when separated by great distances which was referred as “Spooky action at a distance” by the Physicist Albert Einstein. This theory explains the mode of action of Prabhav of Dravyas. Whereas, when we come to narration of Rasa, Veerya, Vipaka and Gunas of the Dravya the particles are initially un-entangled before encounters the body. The energy transfer or the perception of vibrations can happen in between two un-entangled particles only if there exist a causal relationship (Samayvi/Sambandh) in between the two particles, Rasa, Veerya and Vipaka work via the attributes of the Gunas, as the latter are being the source of generating vibrations. As Dravya and human body are both composed of Panchmahabhoot, there exists a causal relationship between them and with the principle of Vyapadeshasthubhyasa of Panchamahabhuta it is best understood that entanglement of particles occur followed by perception and transfer of the attributes or energy patterns (Gunas which includes Rasa, Veerya and Vipaka), and thus, through Virtual Photons the pharmacological actions of the Dravya to human body that is Dravyakarmika is exhibited.

CONCLUSION

In a nutshell, this study attempts to propose a hypothetical systematic elucidation of growth of plants right from germination till its complete development as explained in Charak Samhita through the Bio-physical lens. The concepts of Quantum Physics and entanglement of particles helps us to understand the mechanism of Prabhav: The concepts of vibrations and actions of Dravya with Rasa, Veerya, Vipaka owing to the attributes of the Gunas can be explained via the existence of casual relationship of un-entangled particles of the Quantum Physics. Right from Geomagnetic force / Schumann Resonance, Plant Bioacoustics and the Laws of Quantum Physics which is rightly attributed to Lokasanchari Vayu and Sharirgata Vayu and hence, the importance of Praspanda (Theory of Vibrations) narrated in Ayurveda can be precisely understood. Thus, understanding the role of Quantum Biophysics have a pivotal role thereby, expounding the concepts of Dravyaguna, which in turn will be helpful in improving drug development systems and in providing better therapeutic effects.

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