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A Literary Study on Ayurgenomics with co-relation with Modern Genomics

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ABSTRACT

Modern Medicine, a new discipline that focuses on the complete patient, is emerging within the disciplines of contemporary medicine. By offering a comprehensive theoretical knowledge of the entire patient and a practical application of historic and contemporary preventative and therapeutic approaches to enhance mental and physical health, the development of Ayurgenomics has the potential to significantly advance medicine. Understanding the old Ayurvedic teachings in the context of contemporary science is one of the most challenging tasks facing society today. Many scholars have tackled this endeavor thus far, with the formation of the new discipline of Ayurgenomics being one of the most fruitful outputs. Ayurgenomics combines contemporary genetics research with Ayurvedic ideas, such as Prakriti.

KEYWORDS - Ayurgenomics; Ayurveda; genomics; diet; lifestyle; disease.

INTRODUCTION –

India's ancient system of complementary medicine is known as Ayurveda. The Sanskrit words "Ayus," which means life or lifetime, and "Veda," which means knowledge or science, combine to form the phrase "Ayurveda." The term "science of life" or, more precisely, "the science of lifetime" can be used to describe Ayurveda. Natural health information from Ayurveda was initially passed down orally, and it wasn't until much later that it was documented in literature.[1]

According to the Ayurvedic Tridosha hypothesis, there are three underlying principles or forces, known as doshas that control each person's physiology. The dosha known as vata is responsible for moving things around in the body, from molecules to neurological impulses. It is produced from the elements ether and air. The dosha known as Pitta controls the internal metabolic processes in each cell as well as the process of digesting. Water and fire combine to produce it. The dosha that controls the body's cohesiveness and structure is kapha.[2]

It is a manifestation of both water and earth. Each person is born with a unique mix of these three doshas; this is referred to as Prakriti. Vata, Pitta, Kapha, Vata/Pitta, Pitta/Kapha, Vata/Kapha, and Vata/Pitta/Kapha are the seven primary categories of Prakriti. Is Prakriti explicable in terms of science? The newest discipline of Ayurgenomics, which aims to characterize Prakriti types in terms of contemporary genetics and physiology, has provided the finest description to date.[3]

METHODOLOGY –

The data collected from different articles, literatures, and textbook etc.

EXPLANATION OF THE GENOME AND PRAKRITI

A thorough analysis of patients from the three main Prakriti groups' biochemical and genome-wide expression levels was conducted in 2008. The way that genes were regulated varied greatly among the various Prakriti populations. For instance, genes involved in immune response pathways were overexpressed in Pitta types. Genes involved with cell cycle regulation, notably those that control cyclin-dependent protein kinase activity and enzyme activity, were overexpressed in Vata men. Genes related to fibrinolysis were down regulated in Kapha men, but genes related to ATP and cofactor production were up regulated.[4]

Additionally, compared to Pitta and Vata kinds, Kapha types have greater levels of triglycerides, total cholesterol, high levels of low-density lipoprotein (LDL), and low levels of high-density lipoprotein (HDL). Hemoglobin and the red blood cell count were found to be greater in Pitta types, but serum prolactin was higher in Vata types. Inflammatory genes were found to be up-regulated in Vata types, whereas oxidative stress pathway genes were found to be up-regulated in Pitta and Kapha types in a 2012 study of rheumatoid arthritis patients [7]. 52 SNPs (single nucleotide polymorphisms) were identified to be substantially different in the three primary forms of Prakritis in 2015, according to one of the most thorough and meticulous investigations.[5]

The three main Prakriti kinds may be distinguished by DNA methylation profiles, according to a 2015 research. According to the scientists, distinct Prakriti phenotypes are likely influenced by DNA methylation and chromatin control, and this research sheds light on the epigenetic mechanisms behind the Ayurvedic customized medical system[6].

DISCRIPTION ON PATHOPHYSIOLOGY, DISEASE PATHOGENESIS AND PRAKRITI (GENOMICS)

A 2003 study revealed that the Kapha Prakriti groupings differed biochemically from Pittas or Vata in a number of ways. They displayed greater levels of digoxin, higher levels of glycoconjugates, higher levels of free radical generation and lower levels of scavenging, as well as higher levels of tryptophan catabolites and lower levels of tyrosine catabolites. In contrast to Pitta-Kapha and Vata-Pitta types and after five minutes of isotonic exercise, researchers observed in 2011 that Vata-Kapha types saw a considerable reduction in diastolic blood pressure. According to results of another investigation, Vata-Pitta individuals had the highest levels of ADP-induced maximal platelet aggregation[7].

A 2014 study discovered a link between Prakriti type and body mass index (BMI). According to a study, participants with a Kapha Prakriti had a greater BMI than those with a Vata Prakriti. According to a 2015 study, compared to Pitta or Vata types, Kapha types had stronger parasympathetic activity and lower sympathetic activity in terms of cardiovascular reactivity.[8]

Numerous studies have also linked Prakriti to illness states. According to a 2012 study, when compared to other constitution kinds, Vata-Kapha types had considerably higher triglyceride, VLDL, and LDL levels as well as lower HDL cholesterol. Additionally, the researchers discovered that those with Vata-Kapha Prakriti had a greater chance of developing diabetes mellitus, hypertension, and dyslipidemia. The levels of biochemical markers such IL6, TNF alpha, hs CRP, and HOMA IR were also greater in Vata-Kapha types. Higher concentrations of the inflammatory markers were associated with both the Vata-Kapha and Kapha Prakriti groups. The authors' conclusion was that the Vata-Kapha and Kapha Prakriti groups had a substantial association of risk factors.[9]

CO-RELATION BETWEEN MODERN SCIENCE AND AYURGENOMICS

Using words like genome, gene expression, and epigenetics, modern medicine employs a very reductionist paradigm to define the underlying components of human physiology and health. Ayurveda employs a completely distinct holistic approach that incorporates words like Doṣhas and Prakriti.[10]

Unfortunately, because of a cognitive bias towards folk or traditional medicine, modern medicine has not yet acknowledged many of the helpful preventative methods of Ayurveda. Despite the fact that traditional medical systems are still widely practiced in many nations throughout the world, further study is still required to understand their preventative and therapeutic treatment strategies.[11]

Research on individual herbal preparations has mostly been the focus up until now, with the main goal being to identify and isolate one active component that a pharmaceutical firm might employ. By giving a solid scientific knowledge of fundamental ideas and integrating the practical preventative measures of Ayurveda into contemporary medicine, Ayurgenomics creates a new link between conventional medicine and modern medicine.[12]

DISCUSSION

Medicine is a brand-new area of contemporary medicine that has emerged in the previous ten years. Predictive, preventative, personalized. This new system makes an effort to shift the focus from one that is disease-oriented to one that is wellness-oriented and patient-centered. For many thousands of years, Ayurveda and other traditional medical systems have been patient-centered, predictive, preventative, customized, and participative.[13]

Ayurveda was aware of how nutrition and other lifestyle choices may impact our health even before the development of epigenetics and other sciences like nutrigenomics. They understood that prevention is the key to health, something that modern medicine is only now starting to understand. An efficient preventative medical system depends on improvements in food, sleep, exercise, and stress management.[14]

In terms of illness diagnostics, Ayurveda might benefit contemporary medicine. Many thought that the rapid advancements in genomics will soon lead to a customized medical system that could diagnose and prevent disease. Although progress has been made, scientists now understand that this process may take longer than they had anticipated because of the very intricate role that gene expression plays in the emergence of illness disorders. By classifying people into wider groups utilizing the Prakriti method of categorization and contemporary genetics, Ayurveda might be of assistance.[15]

CONCLUSION

Genomic research and Ayurveda can complement one another. As an evidence-based medical system, contemporary science may support Ayurveda, and vice versa; notably via its emphasis on prevention, Ayurveda can support modern medicine. This is particularly true of medicine, which shares many Ayurvedic concepts with them. For each person to engage in their own self-care, time-tested individualized preventative lifestyle advice would be helpful.

Conflict of Interest –Nil

Source of Support -Nil

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