PERSONALISED MEDICINE IN PERIODONTOLOGY

V.Gopinath

Pacific University,India

Abstract

Personalized medicine refers to applying pharmacogenomics to clinical management of an individual which exploits new molecular tools & equipment to facilitate customised health care based on person's unique characteristics enabling a higher level of personalization. Modifying genetic setup can prevent or cure a disease. Though the term personalized medicine Discovery of genes involved in drug metabolism & drug alternatives can prevent adverse drug interaction. This paper highpoints about personalized medicine & application of Pharmacogenomics in the field of Periodontology.

Introduction:

Not all patients respond similarly to a drug administered. This is the reason for developing the concept of personalized medicine. Though the term "Personalized medicine" sounds unique, it is not a new concept but an extended form of traditional approaches in understanding and treating disease with greater precision. It is a medical model involving customization of healthcare with medical decisions, practices, and/or products tailored according to the each patient need based. The older concept of 'one cut fits all' was replaced by newer personalized medicine concept because same treatment plan is not successful for all the patients.

Inter-individual inconsistency to treatment response develops as a consequence of host–environment–microbial interactions that give rise to a specific clinical phenotype. This phenotype is the reason for difference in patient's response to the given treatment. The field of personalized medicine relies on genetic, proteomic information and patient characteristics to individualize treatment. Patient's profile with genetic variations guides the selection of drugs or treatment protocols decreasing harmful side effects & ensuring successful treatment outcomes. Periodontal diseases are complex, multifactorial inflammatory disease affecting the bone and soft tissue of the teeth. Genetics plays a major role in periodontitis. Though personalized medicine is an emerging field, the logic behind it is nothing new. Personalized care is provided based on a person's unique genetic profile that uses molecular tests like gene mapping, DNA profile, receptor gene amplification test, fluorescence insitute hybridization (FISH), microarray test, AmpliChip CYP450 Test, etc.Personalized medicine seeks to prevent and treat disease through analyzing the variables of every individual as "what is successful for one person may not work for someone possessing different genes, existing in a different environment, and a different lifestyle."

Conclusion:

Understanding the disease pathways, genomic interactions, and novel biomarkers of oral conditions before the occurrence of the disease will help in preventing the disease and, to some extent, will guide treatment planning. Prompt diagnosis of patients can help in getting benefit from targeted therapies. Further longitudinal studies could help in understanding personalized medicine better. It is necessary to bring awareness about Pharmacogenomics to every individual and their influence in drug response. Incorporation of the pharmacogenomic data into clinical practice is a challenge for the future.