

Iranian-Islamic traditional medicine: An ancient comprehensive personalized medicine

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Abstract

Personalized medicine (PM) is a novel term used for a medical model in which all diagnostic, prognostic, and therapeutic aspects of a disease are individualized for a patient using specific molecular testing. In Iranian-Islamic traditional medicine (IITM) an ancient paradigm for PM has been described which has been introduced in this paper. We reviewed the ancient resources of IITM and many valid recent studies on personalized medicine and described an ancient feature of personalized medicine in comparison with new ones. According to IITM scholars, every person has an individual temperament which is concluded of four basic humors combination. The individual temper is influenced by internal and external factors such as age, gender, ethnicity, season, and environment. This variability leads to different physical and mental behaviors toward a particular condition; so if we could identify the patient's temper, we would predict his/her health-related behaviors rather than predisposition and prognosis to different diseases, and select the best treatment. This holistic viewpoint of IITM to the human health and disease justifies the variable phenotypes among similar illnesses; the fact around which more advanced high-tech researches are being developed to explore all specific molecular pathways. IITM offers an ancient comprehensive PM (APM) which is more available and inexpensive compared to the modern PM (MPM). Moreover, APM focuses more on fitness than illness in comparison to MPM. It seems more attention to APM introduced by IITM could help us to promote health community. Design studies using high-tech MPM techniques would likely lead to clarification of most molecular aspects of APM.

Key Words: Iranian, Islamic, personalized medicine, traditional medicine

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INTRODUCTION

Personalized medicine (PM) has recently been proposed as a medical model to individualize healthcare including all preventive, diagnostic, and therapeutic medical interventions according to

genetic context. In this model, all diagnostic testing and every therapeutic method are employed based on the exclusive genomic pattern obtained of any molecular analysis, so the best optimal, efficient diagnostic and therapeutic methods are selected for every person.^[1-3]

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Nowadays, according to increasing the diseases throughout the world and given the limitation of health-related resources, particularly among underdeveloped countries, traditional medicines (TM) have been advised by World Health Organization (WHO) as complementary or alternative for current classic medicine. Dissatisfaction of treatment outcomes obtained of most therapeutic methods within modern medicine has been a main reason for this advice.^[4,5] Iranian-Islamic TM (IITM) is an ancient medical school concluded by integrating of both Iranian TM and Islamic medicine. Iranian TM has a several-thousand history which after emersion of Islam, its concepts were mingled with Islamic doctrine originated of both Holy Quran and Ahl-ul-Bayt education.^[6,7] Great ancient Iranian physicians, particularly Avicenna, were also Islamic scholars, and had an important role in this benedict integration.^[8,9]

According to IITM, every person has a unique temper by which his/her health status is defined independently to other people. Moreover, an identical disease shows variable presentations in different people, according to their temper.^[10-12] Although a history of such holistic attitude toward medicine and its individualization has been also attributed to Hippocrates, an ancient medical scientist in about 2400 years ago,^[13] apparently there has been an ancient comprehensive paradigm of PM in IITM according which millions of people have been treated over thousands of years. We try to introduce this ancient PM (APM) in comparison to the modern PM (MPM) in this article.

NOVEL PERSONALIZED MEDICINE

MPM was first coined in 1999 though some of the basic related concepts have been raised since the early 1960s.^[14] The emersion of new technologies made MPM as a more advanced concrete field, providing an association between individual molecular profiling and clinical features.^[15]

The successful mapping of the entire human genome revealed that though human genetic make-up is 99.1% identical, a small 0.9% inter-individual genetic difference causes a wide variability in physical and mental phenotypes among the human subjects.^[16] This genomic variability may determine all variable health-related properties and behaviors among the people. The fact that response to a drug is different in every person or most of the diseases show variable manifestation in the bodies compared with each other proves PM medical model.^[14,17]

MPM relies on high-tech procedures to determine essential molecular context leading to confirming the disease. For example, genome sequencing can disclose

variations in DNA impacting widespread diseases from common cold to cancer.

A significant evolution was appeared within the field of MPM after inventing two advanced molecular technologies: Single nucleotide polymorphism (SNP) genotyping and microarray/biochips.^[18] SNPs are frequent single nucleotide changes in the DNA sequence which are predominantly common in the population, including 90% of all known polymorphisms.^[16,18,19] Detection of these polymorphisms is essential to determine patient predisposition to various diseases and drug therapy responsiveness.

Moreover, MPM has been revolutionized by microarray technology during recent decay by which rapid analysis of the human genome has been entirely possible.

MPM involves in the process of a disease at six major points: Individual disease susceptibility, screening, diagnosis and prognosis, pharmacogenomics, and monitoring.^[15]

MPM can predict the possibility of a specific disease incidence by molecular genome analysis in a patient, and help to make a direct decision about preventive intervention. Moreover, MPM may be able to identify diagnostic biomarkers of a particular disease long before clinical presentations and be used as a screening tool. This can lead to early detection and treatment, so the disease morbidity and mortality can be decreased.

MPM can also establish an exact diagnosis based on specific genetic individualities to predict a prognosis for a patient rather than on data collected from a diverse population with a vast range of genetic variables.^[1,16,17,19]

ANCIENT PERSONALIZED MEDICINE

A definition for traditional medicine

WHO has defined TM as: "TM is a comprehensive term used to refer both to TM systems such as traditional Chinese medicine, Indian Ayurveda, and Arabic-Unani medicine, and to various forms of indigenous medicine. TM therapies include medication therapies if they involve use of herbal medicines, animal parts and/or minerals and nonmedication therapies if they are carried out primarily without the use of medication, as in the case of acupuncture, manual therapies, and spiritual therapies."^[4,5]

Mizaj as a determinant factor in ancient personalized medicine

IITM is a holistic medicine which has been based on individual differences, a determinant basic concept named as Mizaj (temperament). According to IITM,

everybody has a definite Mizaj which is determinant to construct all physical or mental characteristics. Mizaj is a quality concluded of compounding every four basic elements (Arkan) with each other in a specific proportion and their interaction. These basic elements are: Water, fire, soil, and wind, producing kinetic energy (warmness) and fluidity (humidity) in the body. Human health depends on the maintenance of the Mizaj in a balanced state. Every mal-temperament or *Sou-e-mizaj* could lead to illness.^[11,20-22]

According to IITM, the tempers (Amzajeh) are classified totally into nine categories: Moderate, warm, cold, wet, dry, warm and dry, warm and wet, cold and dry, cold and wet. Different intrinsic and extrinsic factors, like age, gender, ethnicity, environmental conditions, weather, and different seasons can influence on these tempers. Moreover, every natural substance like food and drink has a specific nature (Tabé) which can affect on individual temperament. The Mizaj is in a balanced state if all effects influencing on temper would be compatible with it.^[11,23-25]

Ancient personalized medicine versus novel personalized medicine

Accordingly, not only medical conditions but also health-related behaviors are considered personalized in IITM. For example, a person with warm and dry temper usually prefers cold and wet food and drink rather than ones with warm and dry nature. Also, an old man with the age of 70 years compared to a teenage man needs more warm and wet food and drink based on his age-related temper. According to IITM, if such personalized considerations are not observed, the basic Mizaj would be changed to out of balance; a condition which potentially could threaten the human fitness.^[11,20,26] These health-related personalized aspects of medicine, however, have not been considered in MPM which has mainly focused on disease-related aspects such as diagnosis, prognosis, and treatment. Although predisposition to some diseases like cancer may be predictable in MPM, there are no specific individualized remarks to maintain health status in a person. On the other hand, an obvious feature of MPM may be achieved by spending so much cost for expensive high-tech molecular genomic testing, which is usually unavailable for all people, while the, APM in IITM is easily accessible at no cost.^[18,27,28] For instance, US government dedicated \$44 billion of funding in 2009 just for implementing Health Information Technology in Economic and Clinical Health Act, a fundamental process for advanced PM.^[29]

According to IITM, treatment of the disease essentially depends on actions to modify distemper using natural substances which mainly consists of natural foods and

drinks, and different herbal teas, or manipulation and physical therapy.^[23,30,31] Given to this approach, we cannot prescribe a same treatment for patients affected with a same disease. For example, treatment for two patients affected to the fatty liver but with a different temper is managed with two complete distinct orders.

There is a similar concept in MPM which has been introduced as pharmacogenetics. It is one of the most promising areas within MPM which estimates how a patient's genetic makeup affects treatment efficiency. According to this area, the disease-related molecular profiling should be evaluated before prescription writing. Hence, more molecular diagnostic tests must be developed to identify exactly responders from nonresponders to a specific treatment.^[32-34]

Spirituality: A different aspect of ancient personalized medicine

There is a different outstanding property in IITM that is, related to the therapist spirituality. According to Islamic doctrine, the esoteric intent of therapist and his/her relation with the Lord influence on the treatment process. So, if a therapist has just a materialistic intent, he/she must not expect that his/her attempt lead to an efficient therapeutic outcome. Reversely, spiritual, heavenly motivation in the therapist could lead to increasing the efficacy of the treatment. Moreover, spirituality has a positive effect on the interaction between therapist and patient.^[6,35,36] Accordingly, the spiritual state of a therapist could have a determinant role to individualize a specific treatment which has different efficacy on a same patient in distinct spiritual states. This advanced outstanding viewpoint to medicine is dedicated to Islamic Medicine, and we consider it as another aspect of the ancient comprehensive PM in IITM.

SUMMARY

PM is a novel medical model to individualize all aspects of a disease according to molecular differences within human genome between all persons. Although this concept has been coined in recent decades, reviewing the ancient medical resources of IITM reveals that there is an ancient comprehensive feature of PM, APM, in this advanced medical school. Although there is a great difference between MPM and APM in term of level of view (MPM has atomistic view versus holistic view in APM), apparently both consider people as individual persons.

The comprehensive APM covers all aspects of health and disease, including both spiritual and physical features. The APM is attributed to the temperamental

difference between persons, a basic concept in IITM, which is named “Mizaj.” Individual Mezaj in every person determines his/her health-related conditions, including proper diet and environment. It also predicts the predisposition to different diseases, the choice of treatment, and possible prognosis. Despite MPM, APM is inexpensive and available to all. It also focuses more on fitness than illness. Spirituality state of therapist and both his/her relation with the Lord and the patient are determinant to the efficacy of the treatment, according to IITM related APM.

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Conflicts of interest

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