TANG HUMANITAS MEDICINE

Review

A need of convergence between personal genomics and Korean medicinal typology

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ABSTRACT

Advances in individual genome sequencing technology and next generation sequencing technology have allowed for widespread research of human genome, which would give us opportunities not only to change our focus from the experience-based Korean medicine including typology and Sasang constitution to the evidence-based Korean medicine but to provide effective tailored medical care and Tang theory.

Keywords human genome, Korean medicine, tailored medicine, typology, Tang

Human genome, which was completely sequenced in 2012, is the entire set of human genetic information. The increased speed of individual genome sequencing technology and next generation sequencing technology has enabled scientists in various fields to research about human genome. (Zheng-Bradley and Flicek, 2012).

In truth, the research landscape of genetics has been translated in to the medical purposes. Accordingly, even genome researches in different fields have been consistently applied to medical purposes, and the knowledge learned from sequencing of individual genomes and NGS into the decision-making process of medical care brought a wide range of anticipation for the advancement of diagnosis and treatment of diseases. Many reports about genetic variations of single nucleotide polymorphism (SNPs) and copy number variation have suggested the genetic mechanisms for various phenotypes of diseases. For instance, Corder et al., (1994 and 1993) demonstrated the strong association between apolipoprotein E (ApoE) polymorphisms and Alzheimer's disease. To give other examples, Walsh et al., (2012) revealed that six SNPs from six genes have 90% or more accuracy for blue and brown eye colors in European populations**.** Kayser et al., (2008) practiced a genome wide association study on quantitative eye color extracted from digital eye images and found three new eye color genes.

Advances in human genetic study have enabled researchers to carry out effective personalized medicinal treatment and predictive medicine. In Korean medicine, the personalized medicinal treatment has been the important characteristic for a long time. According Donguibogam, written by Hur Joon (1539-1615) in the 17th century, the Korean Medicinal doctor has diagnosed illness based on observations of patient's specific body shape and feature to focus on the individual patient's clinical signs and symptoms, and medical history. Also, the medication has been applied to each individual patient with well-documented particular prescription which is called Tang in Korean medicine.

Until now, only few cautious convergence studies have been accomplished between Korean medicine and genome study. Jung et al., (2011) reported results of a study about angiotensin I converting enzyme (ACE) I/D SNPs. They found that ACE I/D polymorphism is significantly associated with Korean female asthma patients applied to symptomatic classification. After that, they suggested that the symptomatic classification by Differentiation-Syndrome can be useful in evaluation of the pathogenesis of asthma. In Korean medicine, the individual humans have been classified into one of four constitutional types (Taeum, Soeum, Soyang, and Taeyang) based on Sasang constitution medicine (Chae et al., 2003). These four types of persons are characterized to distinct personalities, body shape patterns and disease types. Kim et al., (2012) presented the association between genome-wide SNP profiles and the categorization of the four constitutional types.

If the Korean Medicinal diagnostic profiles and Tang theory efficiently combine with human genomics, these will provide opportunity for effective tailored and personalized medical care in Korean Medicine.

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CONFLICT OF INTEREST

The authors have declared no conflict of interest.

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