PHARMACOGENOMICS RESEARCH AND TRANSLATION OF THE GENOMIC INFORMATION INTO CLINICAL THERAPEUTICS IN KOREA

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Pharmacogenomics researches in Korea became organized by the leadership of the Korean Pharmacogenomics Research Network (KPGRN), which was launched in July 2003 with the grant from the Ministry of Health, Welfare and Family Affairs. KPGRN is a network of 5 centers with more than 37 principal investigators. The research activities of the 5 centers of the KPGRN are focused on the pharmacogenomic research of adverse drug reactions, drug metabolism, drug transporters, respiratory drugs, and psychiatric drugs, respectively. All the centers are developing algorithms and pharmacogenomics-based diagnostic tools for personalized pharmacotherapy, by discovering new genotypes such as novel SNP's and studying the functions of those genotypes. The KPGRN has invested great effort in establishing a knowledge database and a linked genomic sample bank, which include more than 30,000 DNA samples and clinical data as of early 2008. The members of KPGRN publish more than 60 research papers in SCI journals every year. KPGRN hosts the International Symposium on "Pharmacogenomics: A Step toward Personalized Medicine" every year as well as regular conferences. The research group is now trying to focus more on clinical applications of previous research results including label changes for optimal use of the marketed drugs and pharmacogenetic consultation service for clinical practitioners. Currently, several hospitals such as Inje University Paik Hospital, Samsung Medical Center and Seoul National University Hospital are providing pharmacogenetics related service for patient care. The investigators in the KPGRN actively collaborate with foreign investigators for the research of ethnopharmacology, warfarin pharmacogenetics, childhood leukemia, ethnic differences in CYP enzymes, etc.

Other initiative in pharmacogenomics research is National Institute of Toxicological research (NITR) under Korean FDA, which support several new projects every year. The projects are mainly for the regulatory purposes such as confirmation and provision of dosing information for Korean patient population and toxicogenomics. Korean government also support centers for the disease related genomics researches. The investigators of those disease genomics researches are also involved in the pharmacogenomics of several therapeutic areas.