Clinical application of precision medicine: Zhongshan Hospital Strategy

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Abstract:
Tomorrow’s genome medicine in lung cancer should focus more on the homogeneity and heterogeneity of lung cancer which play an important role in the development of drug resistance, genetic complexity, as well as confusion and difficulty of early diagnosis and therapy. Chromosome positioning and repositioning may contribute to the sensitivity of lung cancer cells to therapy, the heterogeneity associated with drug resistance, and the mechanism of lung carcinogenesis. The CCCTC-binding factor plays critical roles in genome topology and function, increased risk of carcinogenicity, and potential of lung cancer-specific mediations. Chromosome reposition in lung cancer can be regulated by CCCTC binding factor. Single-cell gene sequencing, as part of genome medicine, was paid special attention in lung cancer to understand mechanical phenotypes, single-cell biology, heterogeneity, and chromosome positioning and function of single lung cancer cells. We at first propose to develop an intelligent single-cell robot of human cells to integrate together systems information of molecules, genes, proteins, organelles, membranes, architectures, signals, and functions. It can be a powerful automatic system to assist clinicians in the decision-making, molecular understanding, risk analyzing, and prognosis predicting.

Short Bio:
Xiangdong Wang, MD, PhD, is a Distinguished Professor of Medicine at Fudan University, Director of Shanghai Institute of Clinical Bioinformatics, Executive Director of Clinical Science Institute of Fudan University Zhongshan Hospital, Director of Fudan University Center of Clinical Bioinformatics, Deputy Director of Shanghai Respiratory Research Institute, and visiting professor of King’s College of London. His main research is focused on clinical bioinformatics, disease-specific biomarkers, lung chronic diseases, cancer immunology, and molecular & cellular therapies.

In addition, Dr Wang serves as the Executive Vice President of International Society for Translational Medicine, Chairman of Executive Committee of International Society for Translational Medicine, Deputy President of Chinese National Professional Society of Insurance & Health and a senior advisor of Chinese Medical Doctor Association, and Director of National Program of Doctor-Pharmacist Communication. Dr Wang was appointed as the Principal Scientist, Global Disease Advisor, Medical Monitor and Director, and Chairman of Director Board in a number of pharmaceutical companies, e.g. Astra Draco, AstraZeneca, PPT, and Cathewill. He was the professor of Molecular Bioscience at North Carolina State University, professor of Clinical Bioinformatics at Lund University, and the active member of American Thoracic Society International Health Committee, USA.

He serves as an Editor-in-Chief of Cell Biology and Toxicology (IF=2.84) and co-Editor-in-Chief of Clinical & Translational Medicine; Editor of Serial Book: Translational Bioinformatics; Asian Editor of Journal of Cellular Molecular Medicine (IF=4.99); Section Editor of Disease Biomarkers of Journal of Translational Medicine (IF=3.68); Associate Editor of Expert Review of Clinical Pharmacology (IF=2.48); and the editorial member of international journals, e.g. American Journal of Pulmonary Critical Care Medicine (IF=13), American Journal of Cellular & Molecular Biology (IF=5). He is the author of more than 200 scientific publications with the impact factor about 600, citation number about 5372, h-index 41, i10-index 138, and cited journal impact factor about 5000.