Translational network in Taiwan: predictive, preventive, personalized and participatory cancer research

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Abstract.
The war against cancer all over the world has not been won. Translational network together with system biology, bioinformatics, and digital revolution are teaming up to make personalized medicine and therapy more and more perfect to a predictive, preventive, personalized and participatory health caring system. Taiwan, where the cancer is a serious social concern and related researches are encouraged, is highly conserved in genetic background and a country convenient in collecting all the related tissue samples and questionnaires. Terry Fox Cancer Research Lab in China Medical University located in central Taiwan and has been devoted to translational studies in anti-cancer researches for years. The unique and common features of head and neck (oral and nasopharyngeal carcinoma), lung, breast, gastrointestinal (gastric, hepatocellular carcinoma, colorectal), urological (kidney, ureter, bladder and prostate) cancers, in addition to leukemia, pterygium, myoma, endometriosis are of our interest. (1) The biomarkers found from genomic and proteomic angles may play as the predictive markers for diagnostic and prognostic characteristics in Taiwan population; (2) The system biology from cell models may provide deep insights in carcinogenesis; (3) Screening platforms using the cells from the tumor- and non-tumor- tissues of each cancer patient together with animal cancer models are established for personalized medicine and therapy examinations and potential Traditional Chinese Medicine could be found in both the preventive and therapeutic designed modules; (4) All the above methodology are connected to each other for stratifying the cancer population into their distinct subtypes (for instance triple negative breast cancer from breast cancer can still be divided into high-metastatic and low-metastatic subtypes) for a impedance match against proper drugs. (5) In this way, researchers backed up the doctors to provide the patients and their relatives with personalized anti-cancer approaches assessing the best wellness and quality of life. Thus, every member in the network is the key person to participate in the anti-cancer war. We sincerely look forward to your precious comment, discussion, and cooperation.