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Department of Biomedical Sciences

presents a seminar

“Comprehensive tumor genotyping in the clinic”

Dr. A. John Iafrate, MD/PHD
Harvard Medical School

Date : 27 July 2017

Time: 11:00am to 12:30pm

Venue: Meeting Room 2-130, 1/F, Block 2, To Yuen Building

Abstract

Tumor genotyping has become an important part of clinical cancer patient management in the US. While single gene testing (e.g. EGFR, ALK, KIT) is standard of care in certain tumors, comprehensive genotyping is now common. Clinical next generation sequencing assays have been optimized for point mutations and CNVs. Recent assay development has focused on gene fusions, a rapidly expanding subgroup of driver mutations. Other technology development has focused on cell-free genotyping, the so-called liquid biopsy. Cell-free assays will greatly increase our ability to manage cancer patients by monitoring minimal residual disease and monitoring the development of drug resistance. The integration of and relevance of clinical genomics with immuno-oncology will also be discussed.

Regulatory approval and financial sustainability will depend on proving the clinical utility of genomic testing, which has lagged behind single gene tests. There are challenges in proving that larger panel tests improve outcomes, and are worth the additional costs to the medical system. Several large clinical trials, based on panel testing, have been initiated, including the NCI-MATCH trial. MATCH has been a great model by pairing panel testing with multiple targeted therapy arms based on sequencing results and rational triage algorithms. The progress and challenges of introducing somatic genomics as reimbursed standard of care will be summarized.

About the Speaker

Dr. Iafrate is a Professor of Pathology at Harvard Medical School, and is director of the Director of the Center for Integrated Diagnostics (CID), a clinical laboratory for molecular diagnostics at the Massachusetts General Hospital (MGH). Dr. Iafrate received his MD/PhD dual degree from the State University of New York at Stony Brook in 2000 and was trained in anatomic and molecular genetic pathology at Brigham and Women's Hospital. Dr. Iafrate is a board-certified Pathologist, and has been on staff at MGH since 2005. The CID provides rapid personalized genomic testing to help inform cancer treatment decisions for patients. His research is focused on lung and brain tumors, where he has been closely involved in the clinical development of crizotinib and companion diagnostics in ALK- and ROS1 positive lung cancers. His lab has developed several technologies for sequencing tumors, including SNaPshot and the next-generation sequencing-based Anchored Multiplex PCR, both techniques have been widely used in the molecular diagnostics community.

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All are welcome!