Clinical Pharmacy-2013

OMICS Group Conferences
Accelerating Scientific Discovery

International Summit on
Clinical Pharmacy & Dispensing

November 18-20, 2013 San Antonio, Texas, USA

The role of pharmacogenomics in pharmacy

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Abstract

Pharmacogenomics utilizes modern molecular-genetic pathology methods and quality assurance for the management of pharmacotherapy. This emerging field of medicine enables physicians to treat their patients with personalized medication regimens tailored to patients' unique genotypes. By selecting medication based on a patient's specific metabolism, the clinical application of pharmacogenomics optimizes drug therapy by increasing efficacy, minimizing side effects and reducing the risk of adverse drug interactions, ultimately leading to safer and more effective patient care.

Pharmacogenomics requires the distinctive knowledge of the pharmacist and the expertise of a molecular-genetic pathologist, both imbued with a knowledge of the molecular basis of drug metabolism. Therefore, our objectives in this lecture are to introduce the topic of pharmacogenomics to consultant pharmacists at ASCP, elaborate on its utility in various practice settings, and explain the exceptional role that pharmacists will play in its implementation. We will conclude with case studies from our clinical experience that illustrate in a practical way how pharmacogenomics, and the pharmacists who exploit this information, will help create a safer and more effective practice environment.

Biography

Dr. Kevin Rosenblatt is a Molecular Pathologist who is recognized for this work in developing biomarkers (proteomics and genomics markers) for the diagnosis, prognosis and therapeutics of various diseases including cancer and neurodegenerative disease. He attended Tulane University (1984-1988) as an undergraduate where he majored in Chemistry and Religious Studies. He then attended the University of Texas Southwestern Medical School at Dallas (1990-2000) where he was a Perot Fellow in the Medical Scientist Training Program there, a M.D., Ph.D. degree program dedicated to developing academic physicians trained in basic science and clinical medicine.

He finished his graduate studies at Rockefeller University (1995-1997) in Manhattan, New York in the Laboratory of Dr. A.J. Hudspeth, a pioneering neuroscientist and National Academy of Sciences member.

Dr. Rosenblatt is currently Associate Professor of Molecular Medicine and Director of the Center for Clinical Proteomics in The Centers for Proteomics and Systems Biology at the Brown Foundation Institute of Molecular Medicine; he is also Associate Professor of Pathology and Laboratory Medicine and Co-Director of the Proteomics Core for the Center for Clinical and Translational Sciences at UTHealth. Currently, Dr. Rosenblatt also serves at the Chief Medical and Chief Scientific Officer at Companion Dx Reference Laboratories.

He has recently been funded by Risk Assessment Laboratories, LLC, his University Start-Up company dedicated to the commercialization of clinical biomarkers, and Perkin Elmer International (a leader in fetal genetic screening and pre- and post-natal diagnostics). He is currently running a clinical trial to validate biomarker panels for diagnosing pre-term birth and pre-eclampsia in symptomatic patients and for general screening tests during pregnancy.

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