

Genomics versus metabolomics in disease diagnosis

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Abstract

Aim: To study the genomics versus metabolomics in disease diagnosis. This study focuses on metabolomics in disease diagnosis and how a combined genotype-phenotype approach can help in accurate disease diagnosis, especially in the early stages of disease.

Method: Despite many technological advances, accurate diagnosis of diseases, it is a major stumbling block in the medical world for an effective precision care for the patient. Disease takes as many as two decades to be detected and the late stage diagnosis are left untreated with many billions of dollars are wasted in patient care. The primary reason is the biology of initiation and progression mechanisms of diseases are far too complex with silent cascade of events over two decades without any major symptoms and thus disease can escape from early diagnosis. Conventional late stage disease diagnosis is aided. by MRI, CT scans, histopathologic analysis of biopsies combined with clinical chemistry but without any curable treatment options. Thus, unfortunately, many a time's only invasive surgical interventions are applied for the treatment, prolonging the life of the patient, with unaffordable treatment options.

Result: Discovery of novel medicines is also hampered by the complexity of biology of disease progression. In the last two decades, genomics centered diagnostics have become the major focus for identifying disease, but their applications in the medical world for accurate disease diagnosis is still far from reality. In addition, genetic diagnosis is identifying far many mutations in a disease, for example 800 plus mutations in autistic disorders leaving scientific communities perplexed.

Conclusion: Discovering novel early targets of disease initiation process is very crucial and thus amenable for prophylactic treatments to prevent disease progression.

Biography: Subrahmanyam Vangala is currently Founder and Chief Executive Officer at ReaGene Biosciences Private Limited, Bangalore, India. He is an experienced Pharma Scientist and Executive with more than two decades of leadership experience with increasing responsibilities, at global pharma in USA (Wyeth, JNJ, Purdue Pharma

and the Shire) and Contract Research Organizations in India (Sai Life and Advinus). He completed his PhD degree from Memorial University of Newfoundland, Canada. His current research interests include developing in vitro 3D human models of translational pharmacology and toxicology research for improved clinical translation and use as alternatives to animals in research.