

Precision Medicine and Pharmacogenetics: Stratification and Improved Outcome in Non-Small Cell Lung Cancer

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ABSTRACT

Lung cancer is the most common cancer globally, accounting for a quarter of all cancer-related deaths. Non-small cell lung cancer (NSCLC) is the major lung cancer subtype. Research in the last few decades has led to the identification of key molecular targets resulting in targeted therapies, such as the use of tyrosine kinase inhibitors (TKIs) targeting epidermal growth factor receptors (EGFR). EGFR-TKIs themselves have evolved through few generations based on the knowledge gained from gene mutations in the EGFR leading to therapy resistance. As part of pharmacogenetics, it is well known that patients often respond differentially to different therapies, based on their genetic makeup. This has opened up avenues for precision medicine in the treatment of NSCLC patients with the identification of EGFR mutations and the most optimum treatment strategy. Since time is of the essence, it is critical that the NSCLC patients be administered a therapy that they are most likely to respond to. Evolving data validates this notion and it is expected that such an approach will invariably lead to improved patient outcomes.