OPEN ACCESS Freely available online

ISSN: 2153-0645
Journal of Pharmacogenomics & Pharmacoproteomics

Commentary

Challenges in Implementing Genotyping for Lung Cancer Therapy

Hsien Chi*

Department of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan

DESCRIPTION

Cancer therapy is a term used to refer to treatments for cancer. Different treatments are available depending on the type of cancer and other factors. One such treatment is the use of genotyping EGFR (Epidermal Growth Factor Receptor) in lung cancer patients. Genotyping enables clinicians to identify mutations in the *EGFR* gene, which can then inform therapeutic decisions. *EGFR* is a key protein involved in cellular communication, growth, and division. In lung cancer, mutations in the *EGFR* gene can cause abnormal signals that spur tumor growth instead of cell death. As such, targeting these particular mutations with therapeutic drugs has become a major strategy for treating lung cancer. Genotyping enables clinicians to identify mutations in the *EGFR* gene which can then be used to personalize treatment plans for lung cancer patients.

Lung cancer is the leading cause of cancer-related deaths worldwide. The treatment of lung cancer is a complex and challenging process due to the variability in the types and stages of the disease. To ensure that patients receive personalized, effective treatment, it is important to identify which type of lung cancer an individual has and determine their ideal therapy. Genotyping plays an essential role in helping clinicians make informed decisions by examining the genetic changes that have occurred in a patient's tumor cells. As such, genotyping can provide insight into how a patient might respond to various treatments and can lead to improved therapeutic outcomes for those with lung cancer.

Epidermal Growth Factor Receptor (EGFR) mutations play a critical role in many lung cancers, and therefore, genotyping EGFR helps doctors identify which types of therapies may be most beneficial for their patients. EGFR mutations are common among Non-Small Cell Lung Cancers (NSCLC), accounting for up to 10%-15% of all NSCLC cases.

Genotyping EGFR has become increasingly important in recent years as it has been found that certain mutations within this gene are more common among various populations including East Asian populations who may not respond as well to conventional chemotherapy treatments alone. Additionally, researchers have found that individuals who possess certain combinations of these mutations may benefit more from targeted therapies than other individuals who possess fewer or no such alterations at all. Genotyping also helps healthcare professionals better understand how the incorporation of targeted therapies into standard treatment regimens may affect overall outcomes from therapy and provide valuable insight into potential prognostic factors associated with this type of cancer. Having cancer is a difficult experience, and cancer therapy can be even more emotionally and physically taxing. In the case of lung cancer, treatments can often be improved by analyzing the patient's genotype, specifically their *EGFR* (Epidermal Growth Factor Receptor) gene. This process is known as genotyping for lung cancer therapy, and while it can lead to enhanced therapeutic outcomes, implementing it effectively poses certain challenges.

One of the biggest challenges with implementing genotyping as an effective lung cancer therapy is the cost associated with it. A single test can run hundreds of dollars and must be done before any treatment plan can be implemented or changed. If a patient does not have health insurance that covers these costs or cannot afford them outright, then genotyping will not be available as an option for them. As a result, they may miss out on better treatment plans that could potentially save their life.

Additionally, many hospitals and clinics do not have the necessary resources to perform genetic testing on their patients in the first place. While some larger cities may have a few dedicated laboratories that specialize in this type of testing, smaller towns typically do not and thus are not able to offer this type of treatment option for their patients regardless of cost. Furthermore, due to lab regulations or other restrictions surrounding the handling of genetic material there may also be a limit on how many tests each lab can process at one time meaning they may only accept a few new samples per day or week depending on their capacity. This further restricts availability at any given time and makes it more difficult for people who need this kind of testing to get it when they need it most.

Correspondence to: Hsien Chi,Department of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan, E-mail: chi.luck.hsien@email.com

Received: 03-Nov-2023, Manuscript no: JPP-23-24190, **Editorial assigned:** 07-Nov-2023, PreQC no: JPP-23-24190 (PQ), **Reviewed:** 21-Nov-2023, QC no: JPP-23-24190, **Revised:** 28-Nov-2023, Manuscript no: JPP-23-24190 (R), **Published:** 05-Dec-2023, DOI: 10.35248/2153-0645.23.14.074

Citation: Chi H (2023) Challenges in Implementing Genotyping for Lung Cancer Therapy. J Pharmacogenom Pharmacoproteomics. 14:074