Technology To Make Personalized Cancer Therapy A Clinical Reality

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Current Cancer Treatment Paradigm Leaves Room for Improvement

Cancer Drugs Effective in Only 25% of Patients

~$17.2B Spent on Non-Responders to Top 15 Cancer Drugs

PERCENTAGE OF THE PATIENT POPULATION FOR WHICH A PARTICULAR DRUG IS INEFFECTIVE, ON AVERAGE

- ANTI-DEPRESSANTS (SSRIs): 38%
- ASTHMA DRUGS: 40%
- DIABETES DRUGS: 43%
- ARTHRITIS DRUGS: 50%
- ALZHEIMER’S DRUGS: 70%
- CANCER DRUGS: 75%


The Clinico-Molecular Paradigm

Disaggregate Data

Clinical and Biological Evidence
Patient Treatment History
Patient Molecular Data

Integration and Interpretation
Disease and Drug Knowledge Models
Structured Patient Clinico-Molecular Data

Translation and Accessibility
Treatment Decision Support Solutions
Genomic, Pharmacology and Cohort Evaluations Can Create a Complete Picture

Summary of Treatment Options

Advanced Data Exploration

Cancer Genome

Clinical Pharmacology

Cohort Study
Technologies Are Emerging to Inform Treating Oncologist and Pathologist Decisions

Automatic Generation of Technical, Clinical Lab Report with Editing and Sign-out Functionality for Molecular Pathologist

Whole exome sequence analysis was performed on a biopsy of NON-SMALL CELL LUNG CANCER from the right hilar lobe.

Sequence analysis revealed that no clinically endorsed biomarkers were present in the patients tumor. Nevertheless, four clinically observed response biomarkers were identified. Three independent predictors of Gefitinib responsiveness were detected (EGFR/L858R data, KRAS/G12F data, BRAF/V617F data), and the drug is approved for use in this indication. The BRAF/V617F mutation has also been observed to confer resistance to Gefitinib, but caution is urged as this effect was observed in pre-clinical models (data). Two independent predictors of Erlotinib responsiveness were also detected (EGFR/L858R data, DDR2/S768R data) and the drug is approved for use in this indication. A DDR2/S768R mutation has also been shown to predict responsiveness to Dasatinib, which is currently under Phase 2 investigation in this indication. In addition, the KRAS/G12F mutation has also been associated with responsiveness to Everolimus (data), which is currently under Phase 2 investigation in this indication.

Pharmacological analysis of the patient's current medications (Clarithromycin, Ambien, Aspirin, Crestor, Diovan, Hydrochlorothiazide, Metoprolol) also revealed potential for drug-drug interactions. Co-medication of Clarithromycin with Gefitinib or Erlotinib may increase the levels and toxicity of these anti-cancer agents. Consider appropriate modifications to anti-infective regimen if Gefitinib and/or Erlotinib are chosen for follow-on treatment.