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Computational Pharmacogenomic Personalization

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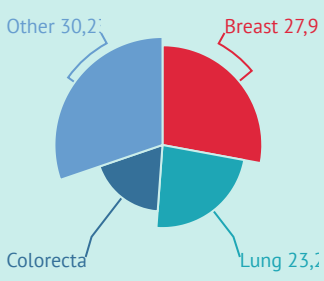
Overview

Personalized medicine tailors cancer treatment based on patients' genetic profiles and unique characteristics.

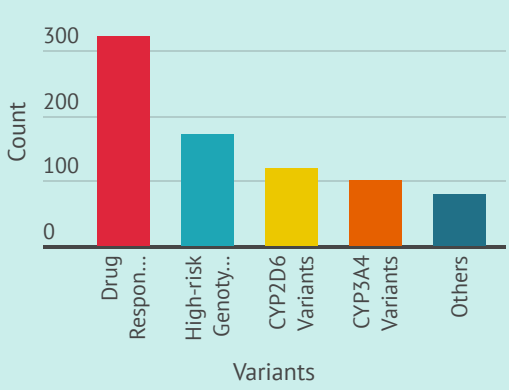


Study Cohort

The study involved 430 cancer patients across multiple types, including breast, lung, and colorectal cancers.

Objectives

The study aimed to develop personalized strategies by integrating pharmacogenomics, computational modeling, and machine learning.



Key Findings

75% of participants had drug-response-related genetic variants; 40% had high-risk genotypes affecting drug reactions.

Techniques

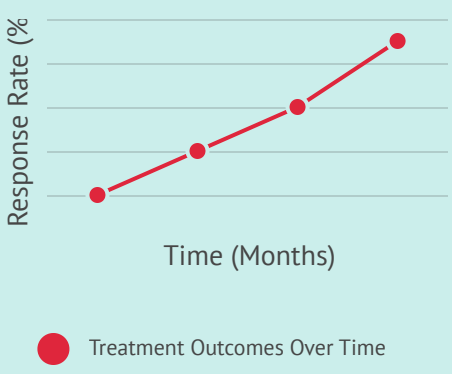
Next-generation sequencing and machine learning models were used to analyze genetic data and predict treatment outcomes.

Machine Learning

Models like SVM and Random Forest achieved 85% accuracy in predicting treatment responses for cancer patients.

Outcomes

The study demonstrated a 70% response rate and showed a 30% reduction in treatment costs through personalized approaches.



Conclusion

Integrating pharmacogenomics with computational modeling leads to improved prediction of treatment outcomes, enhancing decision-making for personalized cancer therapy, thus making it more effective and cost-efficient for patients.

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