A DATA ANALYSIS OF COMMERCIAL CHALLENGES IN THE DEVELOPMENT OF ANTICANCER DRUGS

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ABSTRACT

The development of targeted therapy for cancer treatment has been the focus of the pharmaceutical industry over the past few decades, leading to significant success in turning fatal cancers into manageable chronic illnesses. However, multidrug resistance and relapse remain significant obstacles in finding a cure for cancer. Targeted therapy selectively attacks proteins with abnormal expression inside cancer cells, unlike traditional chemotherapeutics that target the DNA of cancer cells directly. While targeted therapy has been successful in treating certain cancers, its efficacy is limited by drug resistance and negative side effects on normal cells. This study aims to provide an overview of the current state of anticancer drug development, with a focus on targeted therapy, and identify potential avenues for further research and development. However, developing effective anticancer drugs faces challenges in medical research, medicinal chemistry, pharmaceutical technology, and cancer pharmacology. Many agents are waiting for pharmacological assessment and mechanism studies, and improving pharmacology quality and efficacy may benefit anticancer drug development. To improve the precision and efficacy of cancer therapy discoveries, the study suggests reshuffling previous conventions and updating the development system. This would enable the industry to overcome the obstacles of drug resistance and relapse, which have been major challenges in the development of effective anticancer drugs. The study highlights the current reality of anticancer drug development and offers suggestions for further advancements in research, design, and development.

KEYWORDS; Anticancer Drugs, Research and Development, Target Therapy, Phenotype Targeting, Anti-Tumor Immunity