

Perspective of Personalized Cancer Therapy



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Abstract

Personalized medicine is a new frontier in modern medicine. Personalized cancer therapy (PCT) has been developed over 60 years. But, PCT remains to be improved. Central dogma is waiting for uncovering. This perspective addresses this matter briefly.

Keywords: Personalized cancer therapy; Individualized cancer therapy; Drug sensitivity testing; cancer biomarker; Pharmacogenomics; Anti metastatic therapy; Drug combination; Assistant chemotherapy

Introduction

PCT is imperfect now and in their initial stages due to unsatisfactory clinical outcomes and relatively higher costs in some of the strategies. There are several key factors for these unsatisfactory results. My early gives a panorama of currently applied PCT strategies, especially the drawback of every PCT (individualized cancer chemotherapy, ICC) strategies-drug sensitivity testing (DST), cancer biomarkers, bioinformatics, pharmacogenetics (PG), anti metastatic therapy, drug combination, assistant chemotherapy, cost-effective [1-7]. It serves as a platform or media for discussion and promotion of these ICC strategies.

Which strategy is more powerful?

DST and PG are the mainstream of current PCT/ICT [8,9]. By analyzing different available PCT/ICT strategies, we suggest the equal importance of every type of ICC strategies by now. Our argument is based on current clinical practice. DST is unsatisfactory now. Patients' survival has improved very little in spite of utilization of DST [10,11]. Many factors, such as increasing drug number in the DST, development of more active and specific anticancer or anti metastatic drugs, may ameliorate this condition [10,11]. The more effective and selective

anticancer or anti metastatic drugs are developed [12-15], the more favorable outcomes that DST and PG can make because there are better choices of drug armaments [8,9].

Sequencing cancer genomes has gradually increased our power to pinpoint to tumor biomarkers. Detection of human or cancer genetic, transcript, protein or glycoprotein molecular and bioinformatics need less and less moneys in future. The cancer biomarker or bioinformatics detection-based ICT strategy will also update with times and lower cost with technical innovations and might be the most potential ICC strategies in the future [9].

A recent genomic study of >3,000 tumors across 26 cancer types has been underway. Only 1/4 of these tumors contain known cancer genes [8]. It means that most tumors are caused by undefined cancer genes. Thus there is a great potential for further investigations of cancer biomarkers.

Now PCT/ICT can be mainly divided into DST, PG and cancer biomarker detection. In future, new disciplines such as individualized anti metastatic chemotherapy and individualized assistant chemotherapy may soon come into reality. The greatest drawbacks of present individualized cancer chemotherapy are designed to target primary tumors rather than metastatic

lesions. Individualized antimetastatic chemotherapy might be the key of future strategy. We are sure that future trend is to introduce integrated ones of PCT/ICT [9].

Cooperation of all strategies

A lot of hospitals never try of any ICT strategies. In future, ICT strategies should be improved and perfected for survival benefits or even cure of late stage of cancer patients. The more we try different types of ICT strategies in the clinics, the more satisfactory outcome we may obtain. .

The ultimate goal is to markedly decrease death from cancer. To guide therapeutics, ICT strategies seem to be one of best options for cancer treatment. No matter which type of ICC strategies is used in clinics, it ought to be effective and in reasonable cost. According to this rule, future types of PCT/ICT should combine benefits of all strategy and in reasonable price [9,16,17].

Although much efforts have been made in fulfillment of PCT/ICT, but many main obstacles still need to be hurdled. For one important reason is there is less improvement in cancer patients' survival in spite of applications of some types of ICC. But it can be a future miracle if we can perfect them into a successful one. So are we ready for that yet? [17].

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