

Theranostics-The Personalized Medicine has Arrived



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Opinion

The combination of the words “therapy” and “diagnostics” have been purposed as a platform that combines some specific diagnostic with specific therapy, based on the results from the diagnostic. It is a step towards personalized medicine. Using nanotechnology materials and their applications, theranostic medicine can be understood as an integrated therapy system that can diagnose, offer targeted therapy and monitor the response to that therapy. This personalized medicine promises to revolutionize several areas of medicine by matching the ideal and most effective treatment to the individual patient. We could say that theranostics is supported on two pillars:

1. Diagnostic product followed by therapeutic- diagnostic that differentiates patients or the type of disease and allows selection of therapy.
2. Therapeutic product followed by diagnostic- a drug that shows efficacy, but not for all. New diagnostics used to identify the patients for whom it will work.

Several biological pathways can be used to acquire diagnostic images and deliver the therapy. The effective new technologies are best seen in the world of medicine. Researches continue to improve quality of life every day. One of the main reasons for

those studies is the very elevated cost in public health. The reason for this high cost of health care around the world can be attributed to a number of factors ranging from inappropriate health care and the rising costs of medical technology and prescription drugs. Furthermore, it is known that the chosen treatment will not be effective for everybody, therefore, even though it is quite amount of new drugs on the market, patients are not receiving effective treatment in a cost-efficient sample.

As this problem has become more evident, there has been rapid growth in the underlying molecular knowledge of diseases and as a result an increased emergence and adoption of novel medical technologies and services like molecular diagnostics. In a recent past, physicians diagnose diseases by where it was in the body and what it look like under the microscope but this could not predict response to therapy accurately. The idea of theranostics is to use molecular diagnostics to study changes in the proteins and DNA of the patient’s individual diseased cells and use that to tailor the therapy to the patient.

Finally, the increasing sophistication of molecular diagnostics will continue to redefine the landscape of patient therapy and physician decision-making, and provide benefits on both the individual and national level.



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