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Opinion

# Making Cancer Additionally Transparent

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## Opinion

Many a times it appears as if cancer research itself is metastasizing. Each day, we learn novel approaches to understand, avoid, and conquer the multi-headed giant cancer. But this is a valuable, not a malignant, progress of knowledge and insight. The intricacy in how we perceive and study about cancer reflects the difficult and puzzling mechanisms of the disease. The struggles to beat cancer must spread and acclimate in a well defined manner. In recent years, a productive approach in the time to outperform cancer is to exploit the body's own compromised defense systems to revive and mount an attack against quickly proliferating cells. Before hand, and as per the contemporary standard of care, clinicians predominantly struggled to eliminate cancer through exposure to harsh chemicals or destructive radiations. But currently, the oncologist's toolkit has developed to embrace more-precise instruments in addition to these well-worn therapeutic cudgels.

Also plant-derived substances (phytochemicals) are well recognized as sources of pharmacologically potent drugs in the treatment of several oxidative stress related disorders including cancers. Medicinal plants have been recognized and used throughout human history. Plants produce many chemical compounds having important biological functions, including defence against insects, fungi and herbivores. Chemical compounds in plants mediate their effect on the human body through courses similar to those of conventional drugs. Scientific research is sketching its attention towards naturally-derived combinations and compounds as they are reflected to have fewer toxic side effects paralleled to contemporary treatments such as chemotherapy. The plant kingdom harvests naturally occurring secondary metabolites which are being examined for their antioxidant and anticancer activities. With the success of these plants and their derived compounds that have been developed into essential medications for cancer treatment, new tools are evolving to grow the area more. Ethnobotany is the study of traditional human uses of plants and is accepted as an active way to discover imminent medicines. Some of the drugs presently accessible to us are derivatives from plants that have a long history of use as herbal remedies, including aspirin, digoxin, quinine, and opium. Medicinal plants also have cosmetic and nutritional applications. In addition, they are also a substitute to traditional crop with species in high demand at the existing global market. The use of herbal medicines is leading modality to treat cancer patients. The 25% of the crude drugs used in last two decades are derived from plants, out of which only 5-15% have been investigated for bioactive compounds. Recent studies disclose the usage of phytochemicals for cancer treatment due to their relatively lower cytotoxicity, antitumor properties with minimal side effects.

Conclusively eradicating cancer cells is challenging because of their heterogeneity and the luxury with which they develop resistance to chemotherapeutic medications. Acquaintance of the molecular pathways altered in tumor cells, united with a treasure of genetic sequencing data from individual patients, changing cancer profiles, has directed to the design of new chemotherapy treatments that are more balanced and personalized. But additional challenge in fighting cancer is its capability to avoid attack by the body's immune system. The idea of boosting a patient's immune response to fight his cancer has long been touted as an exquisitely sensitive attack strategy, but only in the last few years has clinical development of such therapies begun to soar. More realistically designed combination generators are in the works. Hypothesis-driven modeling, trusting upon an understanding of the manifold pathways that nourish the expansion and spread of cancer, is producing remarkable drug groupings that are progressing their ways through clinical trials as well. This issue prompts us that scientific knowledge has much room to grow and spread. From inspecting scientists drive basic biology along, learning always more about life's apparently unlimited complexity, to observing researchers developing the treatments that might one day cast out evils that have inundated humanity from time immemorial-how captivating it is to watch it all reveal.

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