

A new approach to cancer treatment? Makes much sense.

By ACSH Staff — February 26, 2015



When chemotherapy was first used in the 1940s, all of the drugs

worked the same way by killing cells. The concept behind this was that, since cancer cells grow faster than non-cancerous cells, they would be selectively killed by the drug, leaving normal cells more or less unharmed.

Unfortunately, these drugs, called cytotoxic agents, are far from selective, as evidenced by the myriad of side effects that they cause.

Although there have certainly been substantial gains (and cures) against certain cancers, all too often advances in cancer have been more hype than substance. Evidence of this comes from examining the first line chemotherapy regimens for a number of cancers that still include drugs that were discovered over 60 years ago.

For example, lymphoma is treated in combination with one or more of the following: vinblastine (1963), cyclophosphamide (1959), mechlorethamine (1949), and procarbazine (1969).

ACSH's Dr. Josh Bloom says, The fact that very old, highly toxic drugs are still routinely used to treat a variety of cancers is a good indication that there is still a very long way to go until the term cancer does not strike fear into the hearts of those who are unfortunate enough to be afflicted.

This isn't to say that we are simply still pumping poisons into people. Newer approaches including the use of biologics (antibodies, vaccines, other immune-based therapies) have produced results that can be spectacular, or complete failures.

Over the past two or so decades, a new approach blocking specific pathways that regulate cell growth has led to the development of many drugs. These are referred to in a number of different ways: cell-signaling inhibitors, tyrosine kinase inhibitors (TKIs), epidermal growth factor inhibitors, and others. The first member of this class, Gleevec (2001) was a huge advance, doubling the five-year survival rate of patients with chronic myeloid leukemia. But, other TKIs have been complete failures.

Now, there may may be a tool for making better use of the increasing number and variety of cancer treatment options, simply by looking at the disease(s) in a different way. This [approach](#) [1] is described by Gina Kolata in today s *New York Times*.

Traditionally, cancers have been classified by the location of the primary tumor, or the same type of cancer in a different location. (Example: melanoma is typically a disease of the skin, but it may occur in different locations, such as the eyes, nose or mouth). Melanomas are usually treated with melanoma drugs, often with very little success.

But does it make sense to lump all melanomas (or any other cancer type) together? Maybe not. Enormous advances in gene characterization have led to a different approach treating the cancer according to the genetic mutation that caused it, rather than type.

Pioneering cancer centers, such as Sloan Kettering, are taking a serious look at whether treating a tumor with a drug that targets the genetics of the tumor rather than its class may be a better way to approach therapy.

It is too soon to tell, but the Times article shows what is possible. In one case, a woman whose treatment for a white blood cell cancer was failing responded dramatically to a drug that would normally be used for melanoma. Why? Because the mutation causing her cancer is typically found in melanomas.

Dr. David Hyman, an oncologist at Sloan, and the doctor who treated this particular patient called this a new breed of study.

And the FDA is on board. Dr. Richard Pazdur, the head of the FDA s oncology approval group, says. Conventional therapy might give a response rate of 10 or 20 percent....[w]hen you are having a big effect, it is kind of jaw dropping. These are response rates we haven t seen before in diseases.

Dr. Bloom cautions, This is very clever, but it should not be seen as the magic bullet against cancer something that may not even exist. However, as cancer centers continue to sequence genes that are involved in known cancer pathways, and this information is then used to examine efficacy of drugs against tumors in a different way, it is very likely that more cases like this will be found. Whether this translates into a new paradigm for cancer treatment remains to be seen.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Source URL: <https://www.acsh.org/news/2015/02/26/new-approach-cancer-treatment-makes-much-sense>
Links

[1] <http://www.nytimes.com/2015/02/26/health/fast-track-attacks-on-cancer-accelerate-hopes.html?ref=todayspaper>