War on Cancer Redux

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EDITORIAL

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President Obama announced a remarkable initiative to cure cancer that he likened to a moonshot during his 2016 State of the Union address. Sadly, cancer has affected just about everyone with very few degrees of separation; the call to arms to cure it is something we can all readily respond to positively. However, as in most cases, the reality is considerably more complex. President Nixon first declared the war on cancer in 1971, and several Presidents since have sought to continue these efforts. Congress has also been very generous, and this generosity is reflected in the approximately $5 Billion budget for the National Cancer Institute. This active support, coupled with private sector funding, has resulted in a plethora of new drugs and therapies, some of which are based on newly discovered mechanisms of action.

The next-generation cancer treatments are largely based on antibodies that harness the immune system, for example, Keytruda (pembrolizumab) and Opdivo (nivolumab) both target the PD-1 receptor and block its interaction with PD-L1 and PD-L2 ligands that inhibit T-cell proliferation and cytokine production. President Carter received Keytruda in addition to radiation and chemotherapy and was proclaimed to be cured.

However, we still have a long way to go. There are heartening alliances forming between competitors, with several pharmaceutical companies collaborating on combination therapies to maximize patient responses. Hopefully, these approaches will lead to accelerated availability of therapies. Then there is the complex issue of interactions among genetic, lifestyle, and environmental factors. Multifactorial interactions among them make the cause-and-effect relationship even more difficult to discern, leading to the so-called bad-luck hypothesis. In some cases, it is easy—for instance, give up smoking and your cancer risk dives. In most other cases, this is not so.

The issue of economics also comes up: How can we afford therapies that cost upwards of $100,000 a year per patient with no 100% guarantee of success? What can be done to make the therapeutics more affordable? How do the various stakeholders that are active PDA members become part of the noble mission to cure cancer?

There are no easy answers, but plenty of work remains to be done, and we do have a key role to play in advancing translational science from bench to bedside. The PDA and the PDA Journal will continue to be at the forefront of the pharmaceutical manufacturing and analytical science that is critical for this effort. As part of this commitment, we are pleased to announce that accepted articles can be immediately accessed at http://journal.pda.org/content/early/recent.

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