From the Editor

It is difficult to pick up an oncology journal issue or open a link on the internet without encountering an article or commentary about immunotherapy. As recently as a decade ago, these reports addressed results of toxic yet rarely effective therapies in less common cancers. Today, as the knowledge base of cancer immunotherapy has exploded and become more precise, the indications for immunotherapy, particularly checkpoint inhibitors, are growing every couple of months and the outcomes in terms of durable remissions are becoming more impressive.

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It is tempting to divide newer biological therapies into those that affect various cancer-specific pathways related to growth, metastasis, survival, and metabolism, and, those that affect our own immune reaction against cancer. The implication of this division is that resistance can develop against a specific cellular pathway modulator, whereas a robust cancer-specific immune response may be able to seek out that very last cancer cell. However, it is not that simple, as pointed out by Drs Kavecansky and Pavlick in their review "Beyond Checkpoint Inhibitors: The Next Generation of Immunotherapy in Oncology."

The immune system is highly plastic and extensively networked with cells and molecules of diverse types and in various microenvironmental niches. This creates numerous opportunities of resistance to immunotherapies, as evidenced by the transient responses typically observed, but also speaks to the power of our immune systems by the occasional durable responses being seen in rapidly fatal cancer types. This review article describes many additional levers of the immune system that are hijacked in cancer, and that represent targets for newer therapies—both activating receptors, like OX40, ICOS, CD28, TIM-1 and 4-1BB, and inhibitory ones, such as TIM-3 and LAG-3—not to mention soluble factors and other "negative" arms of the immune system that can create states of immunosuppression, inflammation, angiogenesis, and tumor growth promotion. I encourage you to read this article closely, as it provides a roadmap of elegant possibilities ranging from chimeric antigen receptor T-cell therapy to next-generation vaccines. It is too early to know if immunotherapy will have the impact that many anticipate. But the momentum is certainly strong right now.