Understanding responses to therapy and rationale for combination strategies

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There have been significant advances in melanoma therapy over the past several years with several molecularly targeted and immunotherapeutic agents recently FDA-approved for use the treatment of patients with metastatic disease. However with these advances, we are posed with therapeutic dilemmas with regard to timing and sequence of therapy. Namely, there is significant debate as to whether to begin treatment with targeted therapy versus immunotherapy upfront and at which point to change treatment strategy. This is highly relevant as each of these treatments as mono-therapy have significant limitations. As a group, we have focused on better understanding response and resistance to therapy through longitudinal tissue and blood analyses in patients on targeted therapy and immunotherapy. We have worked with investigators worldwide to better understand response and resistance to therapy and have gained critical insights that have led to therapeutic inroads for patients with melanoma. This includes the use of combination strategies such as adding immune checkpoint blockade to a backbone of molecularly targeted therapy. Clinical trials combining these strategies are currently underway and it is becoming increasingly apparent that complexities exist with regard to these combinations. A better understanding of mechanisms of response to combination strategies through translational research is critical and is best performed on longitudinal patient samples during the course of therapy which may inform (and be informed by) parallel murine studies. Ultimately, ideal combination approaches will be built on a deep understanding of molecular and immune effects of each therapy in isolation as well as in combination.

Biography

Zachary A Cooper has completed his PhD from University of Maryland, Baltimore and Postdoctoral studies from Brown University and Harvard Medical School. He joined the faculty at MD Anderson Cancer Center in 2013 with a dual appointment in the Departments of Surgical Oncology and Genomic Medicine. He is a Translational Scientist whose research focuses on the interface of the immune system and targeted therapy in melanoma. He has published more than 30 manuscripts in reputed journals including Nature, Nature Genetics, Cancer Discovery, Journal of Clinical Investigations, Science Signaling, Cancer Research and Clinical Cancer Research among others.

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