WHAT WE'RE READING

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CANCER IMMUNOLOGY AT THE CROSSROADS

94 Inflammasomes and Cancer
Rajendra Karki, Si Ming Man, and Thirumala-Devi Kanneganti

CANCER IMMUNOLOGY MINIATURES

100 Metastatic Melanoma Patient Had a Complete Response with Clonal Expansion after Whole Brain Radiation and PD-1 Blockade
Cara L. Haymaker, DaeWon Kim, Marc Uemura, Luis M. Vence, Ann Phillip, Natalie McQuail, Paul D. Brown, Irina Fernandez, Courtney W. Hudgens, Caitlin Creasy, Wen-Jen Hwu, Padmanee Sharma, Michael T. Tetzlaff, James P. Allison, Patrick Hwu, Chantale Bernatchez, and Adi Diab
This case report provides a rationale for a carefully timed combination of WBRT + anti-PD-1 for the treatment of metastatic melanoma patients with brain metastases, as well as for other cancers for which anti-PD-1 has been approved.

RESEARCH ARTICLES

106 Temporally Distinct PD-L1 Expression by Tumor and Host Cells Contributes to Immune Escape
PD-L1 induction on tumor cells is IFNγ-dependent and transient, but becomes IFNγ-independent and long-lived on tumor-associated macrophages. Thus, assessing PD-L1 expression on both tumor and host cells may better stratify patients undergoing PD-1/PD-L1 blockade therapy.

118 Infiltration of CD8 T Cells and Expression of PD-1 and PD-L1 in Synovial Sarcoma
Theodore S. Nowicki, Ryan Akiyama, Rong Rong Huang, I. Peter Shintaku, Xiaoyan Wang, Paul C. Tumeh, Arun Singh, Bartosz Chmielowski, Christopher Denny, Noah Federman, and Antoni Ribas
Patients whose tumors express PD-1 and PD-L1 are more likely to respond to PD-1 blockade. Patients with synovial sarcoma were found to coordinately express PD-1, PD-L1, and CD8, providing a rationale for their treatment with PD-1/PD-L1 inhibitors.

127 Transfer of Allogeneic CD4+ T Cells Rescues CD8+ T Cells in Anti-PD-L1–Resistant Tumors Leading to Tumor Eradication
Ainhoa Arina, Theodore Karrison, Eva Galka, Karin Schreiber, Ralph P. Weichselbaum, and Hans Schreiber
Tumor-specific CD8+ T cells temporarily control tumor growth, but eventually tumors can escape. Adoptive transfer of tumor-recognizing CD4+ T cells rescued the function of exhausted CD8+ T cells through co-cross-presentation by stroma, which led to complete tumor eradication.

137 Tumor-Infiltrating Merkel Cell Polyomavirus-Specific T Cells Are Diverse and Associated with Improved Patient Survival
Natalie J. Miller, Candice D. Church, Lichun Dong, David Crispin, Matthew P. Fitzgibbon, Kristina Lachance, Lichen Jing, Ichiro Shishihara, Joannis Gavriolidis, Gerald Willimsky, Martin Mcnntosh, Thomas Blankenstein, David M. Koelle, and Paul Nghiem
Merkel cell carcinoma patients had improved survival if their tumors contained a greater frequency or diversity of T cells that were specific for a prevalent Merkel cell polyomavirus epitope. Thus, transgenic T-cell receptor therapy could potentially benefit patients.

148 The Different T-cell Receptor Repertoires in Breast Cancer Tumors, Draining Lymph Nodes, and Adjacent Tissues
Ting Wang, Changxi Wang, Jinghua Wu, Chenyang He, Wei Zhang, Jiayun Liu, Ruiyang Zhang, Yonggang Lv, Yongqun Li, Xiaoqiang Zeng, Hongzhi Cao, Xuqian Zhang, Xun Xu, Chen Huang, Ling Wang, and Xiao Liu
The TCR repertoire of T lymphocytes from breast tumors, draining lymph nodes (LNs), and adjacent tissues were compared. Tumor-positive LNs had greater T-cell clonal expansion and more T-cell infiltration of tumors, illustrating exchange between the two compartments.
157 Dasatinib Changes Immune Cell Profiles Concomitant with Reduced Tumor Growth in Several Murine Solid Tumor Models
Tyrosine kinase inhibitors (TKIs) are used therapeutically to inhibit aberrant oncokinase signaling in tumor cells. Several mouse solid-tumor models showed that the TKI dasatinib has off-target immunostimulatory effects, which could be important in the control of tumors.

170 Long-term Survival and Clinical Benefit from Adoptive T-cell Transfer in Stage IV Melanoma Patients Is Determined by a Four-Parameter Tumor Immune Signature
Four parameters were identified—CD8\(^+\) TILs, galectin-3\(^+\) tumors, galectin-9\(^+\) DCs, and a high M1/M2 ratio—whose combined presence was prognostic for long-term survival and predictive for sustained clinical benefit from adoptive T cell transfer in stage IV melanoma.

ABOUT THE COVER
Synovial sarcoma primarily strikes adolescents and young adults, with particularly devastating results. Vaccination trials show some promise, which implies that these sarcomas may be immunologically competent. Nowicki et al. have examined metastatic tumors from synovial sarcoma patients and found that not only do many of the sarcomas contain CD8\(^+\) T cells, but PD-1 and PD-L1 staining often coincides with the T cells at the invasive margins of the tumors, as shown in the micrograph on the right. Thus, inhibiting the PD-1/PD-L1 axis with checkpoint blockade may be potentially useful in treating this cancer. Read more in the article by Nowicki et al. in this issue of *Cancer Immunology Research*, starting on page 118. Immunofluorescence micrograph is from Fig. 4 and artwork is by Lewis Long.