Fatigue, pruritus, and rash were the most common adverse events.

Steven O'Day, MD, an immunologist at the University of Southern California's Keck School of Medicine in Los Angeles, called pembrolizumab's mild toxicity profile "almost unheard of in metastatic cancer."

Earlier this year, two phase I studies in pembrolizumab-treated advanced melanoma and non–small cell lung cancer (NSCLC) patients found PD-L1 is potentially a predictive biomarker for drug response.

In melanoma, the overall response rate was 46% when tumors expressed PD-L1 compared to 17% when tumors had no PD-L1. In NSCLC, the response rates to pembrolizumab were 37% in patients whose tumors had high pretreatment levels of PD-L1 versus 11% in those with low pretreatment levels. The findings were presented at the American Association for Cancer Research's 2014 Annual Meeting in April.

The FDA has granted priority review to pembrolizumab for advanced melanoma, with a decision anticipated by October 28.

O'Day hailed pembrolizumab as infinitely preferable to the "high collateral damage" of cytokine therapy for melanoma. "This is truly a brave new world for immunotherapy," he said. "The revolution is here, and it's bursting out of melanoma into other solid tumors." ■

Blocking CD47 Shrinks Pancreatic Tumors

In a new study, blocking CD47, which was found at elevated levels on the surface of pancreatic cancer cells, caused tumors to shrink in preclinical models, suggesting a potential therapeutic strategy for patients with the disease. The research was presented at the American Association for Cancer Research special conference, Pancreatic Cancer: Innovations in Research and Treatment, held May 18–21 in New Orleans, LA.

Researchers in the laboratory of Irving L. Weissman, MD, director of the Institute for Stem Cell Biology and Regenerative Medicine and the Ludwig Center for Cancer Stem Cell Research, both at Stanford University School of Medicine, Stanford, CA, obtained tumor samples from 39 patients with pancreatic neuroendocrine tumors and from 39 patients with pancreatic ductal adenocarcinoma who had surgery to remove their tumors. They found that CD47 was expressed at elevated levels on the surface of cells from both types of tumors and on tumor-initiating cells, which propagate disease and cause metastasis.

"CD47 is a widely expressed cell-surface protein that functions as a 'don't eat-me' signal," explained Geoffrey W. Krampitz, MD, who presented the team's work. "It binds to its receptor, SIRPα, [found] on macrophages and dendritic cells, inhibiting [the cancer cells'] ability to phagocytose." As a result, the cancer can continue to grow and spread.

The researchers tested the effects of blocking CD47 in multiple preclinical models of both pancreatic neuroendocrine tumors and pancreatic ductal adenocarcinomas using the monoclonal antibody Hu5F9. In one model, tumors from patients with the diseases were implanted into mice that were subsequently treated with Hu5F9. Krampitz said that the tumors were eliminated and that the animals experienced fewer metastases and lived longer than controls.

"Furthermore, we have shown that blocking CD47 with monoclonal antibodies and other agents can dramatically enhance the efficacy of cancer-targeting immunotherapies, including rituximab [Rituxan] for lymphoma and trastuzumab [Herceptin] for breast cancer," noted Krampitz. "In addition, we have shown that anti-CD47 antibody treatment selectively increases the ability of macrophages to prime and activate cytotoxic T lymphocytes, which may limit tumor growth beyond the time of anti-CD47 monoclonal antibody treatment."

Based on their preclinical data, Krampitz said that later this year his team will begin to examine the safety profile of Hu5F9, which is also under investigation in hematologic malignancies, in patients with pancreatic cancer. ■

For more news on cancer research, visit *Cancer Discovery* online at http://CDnews.aacrjournals.org.

NOTED

- **The FDA reclassified sunlamp products and UV lamps intended for use in these products from low-risk to moderate-risk devices, which will subject them to greater regulation,** such as the need to obtain FDA clearance before marketing them. In addition, sunlamp products must now carry a visible black-box warning that explicitly states that they should not be used on people under age 18.
- **Private insurers and Medicare should pay for proton beam therapy for ocular melanoma, certain brain tumors, and other relatively uncommon cancers** for which the treatment has proven effective, according to a "model policy" issued by the American Society for Radiation Oncology and available at www.astro.org.
- **Asymptomatic, nonpregnant adults and adolescents at high risk of hepatitis B virus (HBV) infection should be screened for it,** according to a recommendation from the U.S. Preventive Services Task Force, which reviewed evidence of potential risks and benefits of screening (Arch Intern Med 2014;161:58–66). The recommendation is a reversal of the task force's 2004 position on HBV screening. About 15% to 25% of people with chronic HBV infection die of cirrhosis or hepatocellular carcinoma.
- **Myriad Genetics (Salt Lake City, UT) sued Pathway Genomics (San Diego, CA) for infringement of its patent claims on *BRCA1* and *BRCA2* genetic testing.** The suit was spurred by Pathway's launch in June of a next-generation sequencing test called *BRCA*True that assesses alterations in the two genes.
- The Centers for Disease Control and Prevention reported that **cigarette smoking rates among high school students have dropped to the lowest levels since the National Youth Risk Behavior Survey began in 1991.** According to the 2013 survey results, the teen smoking rate is down to 15.7% (see www.cdc.gov/mmwr/pdf/ss/ss6304.pdf).
- *The Times of India* reported that **the Indian Patent Office denied a patent for Celgene's anticancer drug Abraxane (nab-paclitaxel),** claiming that it lacks "an inventive step." Under Indian law, patents cannot be granted to new forms of known substances unless they show enhanced efficacy over the known substance.