New cancer drug shows promise for treating advanced melanoma

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Researchers from UCLA's Jonsson Comprehensive Cancer Center report that a new drug in preliminary tests has shown promising results with very manageable side effects for treating patients with melanoma, the deadliest form of skin cancer.

The results were presented at the 2013 meeting of the American Society of Clinical Oncology today in Chicago by Dr. Antoni Ribas, professor of medicine in the UCLA division of hematology-oncology, who led the research. Following Ribas' presentation, the study was published online ahead of press in the *New England Journal of Medicine*.

The results are from the first clinical trial of the drug lambrolizumab (MK3475), which was discovered and developed by Merck. Researchers analyzed 135 patients with advanced metastatic melanoma who were divided into three groups with different treatment regimens.

Overall, 38 percent of patients taking lambrolizumab saw confirmed improvement of their cancer across all dose levels. Of those taking the lowest dose of lambrolizumab, 25 percent showed improvement, while 52 percent of those who received the highest dose improved. The rate of any tumor response across all patients was 77 percent. Researchers have not yet determined the average duration of response to the drug, because only five patients who had initial responses were taken off the study after their cancers got worse. To date, the longest response has been over one year.

Side effects with lambrolizumab are usually mild and easily managed. These include fatigue, fever, skin rash, loss of skin color and muscle weakness. Thirteen percent of patients had side effects that were more severe, including inflammation of the lung or kidney, and thyroid problems.

"This study is showing the highest rate of durable melanoma responses of any drug we have tested thus far for melanoma, and it is doing it without serious side effects in the great majority of patients," Ribas said.

Serving as the immune system's soldiers, T cells find and destroy invaders that cause infections and diseases. Cancers like melanoma are usually not detected by the immune system, and they spread without T cells destroying them. One problem may be that a protein called PD-L1 on the surface of cancer cells allows them to hide from T cells that express the protein PD-1 on their surfaces.

Lambrolizumab is an antibody that blocks PD-1 and reactivates an immune response to the cancer cells.

"Lambrolizumab turns on the body's immune system to attack the cancer, and the immune system seems to remember that the melanoma is the enemy and continues to control it long term," Ribas states.

These data have led to a series of additional studies testing lambrolizumab in patients with melanoma and other cancers, including lung cancer.

Lambrolizumab received "breakthrough therapy" designation from the U.S. Food and Drug Administration in April. Enacted as part of the 2012 FDA Safety and Innovation Act, the breakthrough therapy designation was created by the agency to expedite the development and review of a potential new medicine if it is "intended, alone or in combination with

one or more other drugs, to treat a serious of life-threatening disease or condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints."

Provided by University of California, Los Angeles