New therapy improves life span in melanoma patients with brain metastases, researchers find

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John Richart, M.D., associate professor of internal medicine at SLU and principal investigator of the study, discusses a patient case with Melinda Chu, M.D., first-year dermatology resident. Credit: Riya V. Anandwala

In a retrospective study, Saint Louis University researchers have found that patients with melanoma brain metastases can be treated with large doses of interleukin-2 (HD IL-2), a therapy that triggers the body's own immune system to destroy the cancer cells.

The study that was recently published in *Chemotherapy Research and Practice*, reviews cases of eight patients who underwent this therapy at Saint Louis University.

John Richart, M.D., associate professor of internal medicine at SLU and principal investigator of the study, first treated a patient with the disease using the HD IL-2 treatment in 1999.

"Traditionally, melanoma patients with brain metastases have not been considered for HD IL-2 because treatment was thought to be futile," Richart said. "Our study shows that having this condition does not exclude a patient from getting this treatment and can in fact improve the length of their life."

Melanoma is the most dangerous form of skin cancer that begins in the melanin-producing cells called melanocytes. In some melanoma patients, the cancer spreads to the brain, causing multiple tumors that are difficult to treat. According to the CDC, melanoma is the third most common cancer causing brain metastases in the U.S. Richart said the median overall survival of patients with melanoma brain metastases is approximately four months whereas in the study, the median overall survival for patients was 8.7 months.

During the treatment, patients are given an IV medication—a chemical the body naturally makes that stimulates the immune system to recognize and destroy melanoma cells—for a period of six days while they are admitted to the hospital and are closely monitored by doctors and nurses. A patient requires four such six-day admission cycles in order to complete the course of the treatment.

To be eligible for HD IL-2 treatment, melanoma patients with brain metastases have to be in healthy shape with good brain function—that is they cannot have brain lesions that are growing rapidly or show any

symptoms of brain lesions. In the past, melanoma patients with brain metastases have been considered ineligible for this treatment because doctors thought that the treatment would cause life-threatening cerebral edema, a complication that causes excess accumulation of fluids in the brain, and neurotoxicity, or irreversible damage to the brain or the nervous system.

"In this review, we found that there were no episodes of treatment-related mortality. Our findings demonstrate that HD IL-2 can be considered as an option for patients with melanoma brain metastases," said Melinda Chu, M.D., a first year dermatology resident at SLU and first author of the study. SLU is the only medical center in the region that provides this treatment.

"We need a highly skilled nursing staff for the HD-IL-2 program to be successful," Richart said. "Our nursing team at SLU is with each patient every step of the way, 24 hours a day. They help patients get through and continue the treatment."

Provided by Saint Louis University