Neoadjuvant PD-1 blockade seems effective in glioblastoma

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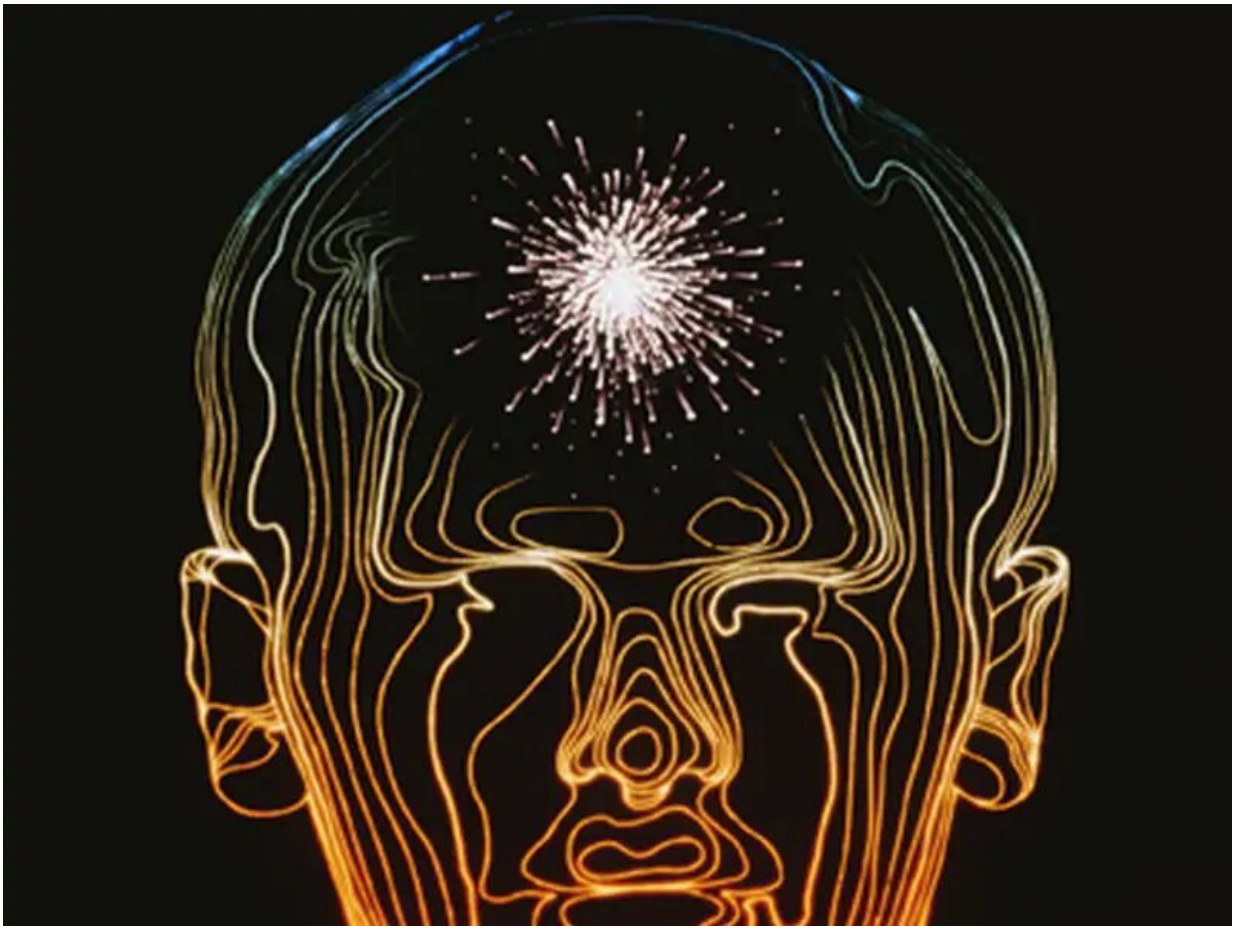

(HealthDay)—Neoadjuvant administration of programmed cell death

protein 1 (PD-1) blockade seems to enhance local and systemic antitumor immune response in glioblastoma, according to a study published online Feb. 11 in *Nature Medicine*.

Timothy F. Cloughesy, M.D., from the University of California in Los Angeles, and colleagues examined immune responses and survival after neoadjuvant and/or adjuvant pembrolizumab therapy in 35 patients with recurrent, surgically resectable glioblastoma in a randomized clinical trial.

The researchers found that compared with patients randomly assigned to receive adjuvant, postsurgical PD-1 blockade alone, those randomly assigned to receive neoadjuvant pembrolizumab with continued adjuvant therapy after surgery had significantly extended overall survival. Upregulation of T-cell and interferon-γ-related gene expression was seen in association with neoadjuvant PD-1 blockade as well as downregulation of cell-cycle-related gene expression within the tumor; this finding was not observed in patients receiving adjuvant therapy alone. Compared with patients treated only in the adjuvant setting, those in the neoadjuvant group more often had focal induction of programmed death ligand-1 in the tumor microenvironment, enhanced clonal expression of T cells, decreased PD-1 expression on peripheral blood T cells, and a decreasing monocytic population.

"This isn't a very big study, and our data need to be replicated, but we have a foot in the door," Cloughesy said in a statement. "We have found a way to use these checkpoint inhibitors in glioblastoma that we previously thought were ineffective."

Several authors disclosed financial ties to biopharmaceutical companies, including Merck and Adaptive Biotechnologies, both of which provided funding for the study.

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