Children With Brain Cancer May Benefit From Targeted Therapy Combination

Combination therapy using Taflinar and Mekinst led to improved response for pediatric patients with low-grade gliomas

June 7, 2022 By Sukanya Charuchandra

For children with low-grade gliomas with BRAF V600 mutations, a combination of Taflinar (dabrafenib) and Mekinst (trametinib) led to a higher overall response rate and prolonged progression-free survival compared with standard chemotherapy, according to study findings presented at the 2022 American Society of Clinical Oncology (ASCO) Annual Meeting.

“This study shows that a new, oral targeted therapy combination can significantly improve outcomes for the most common type of brain tumor in children over standard-of-care chemotherapy that often requires frequent visits to the hospital or clinic and can result in health problems later in life,” Melissa Hudson, MD, an ASCO expert in pediatric cancers, said in a press release. “It is exciting to see success in developing targeted treatments based on the unique genetic features of a tumor in a young patient.”

Gliomas, a type of tumors originating in the brain, are among the most common cancers in children. Low-grade gliomas often require chemotherapy if complete surgical removal is not possible. Some 15% to 20% of low-grade gliomas are attributed to the BRAF V600 mutation.

Eric Bouffet, MD, of the Hospital for Sick Children in Toronto, and colleagues conducted a Phase II/III trial to see whether a combination of targeted therapies would be a better treatment option than a combination of standard chemotherapy drugs (NCT02684058).

The study included 110 children between the ages of 1 and 17 years from 20 different countries. All had low-grade gliomas with BRAF V600 mutations. They were randomly assigned to two different treatment arms. One group received Taflinar twice daily plus Mekinst once daily. The comparison group received a standard chemotherapy regimen of carboplatin and vincristine.

Children using the targeted therapy combination had an overall response rate of 47%, compared with 11% for those on chemotherapy. The clinical benefit rate (the proportion with a complete response, partial response or stable disease for at least six months) was 86% for those using the targeted therapies compared with 46% for those using chemotherapy. The median progression-free survival times were 20.1 and 7.4 months, respectively.

The targeted therapy combination was generally safe. Those who received Taflinar and Mekinst experienced fewer severe adverse events than those on chemotherapy (47% versus 94%) and were less likely to stop therapy (4% versus 18%).

“For pediatric patients with BRAF V600-mutant low-grade glioma, dabrafenib plus trametinib may offer an improved standard of care,” Bouffet said in the press release. “This represents an important advance for the youngest patients with brain cancer, as this is the first combination of targeted therapies developed for patients as young as one year of age.”

The researchers noted that the results highlight the importance of early genomic testing of pediatric gliomas to determine whether patients might benefit from the target therapy combination.

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