ABSTRACT

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Impressive response to dabrafenib and trametinib plus silybin in a heavily pretreated IDH wild-type glioblastoma patient with BRAFV600E-mutant and SOX2 amplification.

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Isocitrate dehydrogenase wild-type glioblastoma is the most frequent primary brain tumor in adult patients and its prognosis is still dismal with a median survival of about 1 year. BRAFV600E mutation, an important target for personalized therapy, has been identified in about 3% of these patients, but few data are available from prospective studies on the role of anti-BRAF drugs in adult glioblastoma patients. Moreover, SOX2 gene amplification and overexpression can represent an important mechanism of resistance to BRAF inhibitors by STAT3 gene activation. We present the case of a heavily pretreated 42-year-old man with BRAFV600E mutant and SOX2 amplification glioblastoma having a radiologic and metabolic [analyzed by a brain 18F-fluoro-ethyl-tyrosine([18F]FET) PET/MRI] complete response to the combination therapy with dabrafenib plus trametinib and silybin, a potent STAT3 inhibitor. The patient is currently undergoing treatment after a total of 24 months of continuation therapy with a good safety profile. In conclusion, we showed a promising activity of the personalized treatment of BRAF and MEK inhibitors in patient with BRAFV600E mutant glioblastoma; silybin can play an important role in decreasing drug resistance during BRAF inhibitor therapy, especially in patients with SOX2 amplification.

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