PubMed 25878190[uid]

Format: Abstract

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Ann Oncol. 2015 Jul;26(7):1346-52. doi: 10.1093/annonc/mdv163. Epub 2015 Apr 15.

Inhibition of the phosphoinositide 3-kinase pathway for the treatment of patients with metastatic metaplastic breast cancer.

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Abstract

BACKGROUND: Mesenchymal/metaplastic breast cancers (MpBCs) are often triple-negative (TNBC), and chemo-refractory, and can harbor phosphoinositide 3-kinase (PI3kinase) alterations; thus, therapy with mTor inhibitors may demonstrate activity.

PATIENTS AND METHODS: Patients with mesenchymal/MpBC treated with temsirolimus-based regimens were evaluated. Mutational analyses [polymerase chain reaction (PCR)-based DNA sequencing method, mass spectrometric detection (Sequenom MassARRAY), or next-generation sequencing] as well as loss of phosphatase and tensin homolog (PTEN) (immunohistochemistry) were performed (archived tissue when available).

RESULTS: Twenty-three patients (one of whom was on two separate trials) were treated using temsirolimus-containing regimens: temsirolimus alone (n = 1 patient) or combined with the following: liposomal doxorubicin and bevacizumab (DAT, n = 18); liposomal doxorubicin (DT, n = 1); paclitaxel and bevacizumab (TAT, n = 2); paclitaxel (TT, n = 1); carboplatin and bevacizumab (CAT, n = 1). Response rate [complete response (CR) + partial response (PR)]