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IN BRIEF

Two New Drugs for AML

The FDA has approved two new drugs for treatment of specific subtypes of acute myeloid leukemia (AML).

Pronunciation Key

Enasidenib: en" a sid' e nib
Vyxeos: vicks e' os
Idhifa: eyed hee' fuh

Vyxeos (Jazz Pharmaceuticals) is a liposomal fixed-dose combination of daunorubicin and cytarabine, the standard drugs used for induction treatment of AML. It is approved for induction and consolidation treatment in adults with newly diagnosed chemotherapy- or radiation-related AML or AML with myelodysplasia-related changes. Patients with these subtypes of AML have a poor prognosis. The rationale for development of the combination was that nano-scale liposomal drug delivery vehicles prolong and maintain drug concentrations, resulting in increased efficacy in animal studies.[1] In a trial in 309 patients 60-75 years old with these subtypes of AML, median overall survival was significantly longer in those treated with the liposomal combination than in those treated with conventional daunorubicin and cytarabine (9.56 vs 5.95 months). Adverse effects of the liposomal combination were similar to those with the conventional formulations.[2]

Enasidenib (*Idhifa* – Celgene) is approved for treatment of adults with relapsed or refractory AML who have mutations in isocitrate dehydrogenase-2 (IDH2); these mutations occur in about 12% of patients with AML. The new drug inhibits mutant-IDH2 enzymes, which block cellular differentiation. In a single-arm trial of enasidenib in 239 such patients, the overall response rate was 40.3%, the median duration of response was 5.8 months, and median overall survival was 9.3 months. A complete remission was achieved in 34 patients (14%). The responses were associated with differentiation of the myeloblasts rather than individual cytotoxicity. Indirect hyperbilirubinemia without apparent liver toxicity (38%) and nausea (23%) were the most common adverse effects of enasidenib in clinical trials. A life-threatening "differentiation syndrome" that affected multiple organs occurred in 23 patients (10%); it generally responded to treatment with corticosteroids, but two patients died from the acute effects of leukocyte proliferation.[3] ■

1. EJ Feldman et al. First-in-man study of CPX-351: a liposomal carrier containing cytarabine and daunorubicin in a fixed 5:1 molar ratio for the treatment of relapsed and refractory acute myeloid leukemia. J Clin Oncol 2011; 29:979.
2. JE Lancet et al. Final results of a phase III randomized trial of CPX-351 versus 7+3 in older patients with newly diagnosed high risk (secondary) AML. J Clin Oncol 2016; 34:15 suppl 7000.
3. EM Stein et al. Enasidenib in mutant IDH2 relapsed or refractory acute myeloid leukemia. Blood 2017; 130:722.

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