

## **Clinical value of decitabine monotherapy in patients with acute myeloid leukemia**

Acute myeloid leukemia, or AML, is a form of blood cancer that compromises healthy cell production. Patients with AML are generally treated with intensive chemotherapy. However, while advances in treatment have led to improvements in outcomes for younger patients with AML, little progress has been made in improving outcomes for patients older than 60. That's especially true for patients who are, for one reason or another, not eligible for standard treatment with chemotherapy. A review of clinical and real-world studies suggests that the use of the hypomethylating agent decitabine can be a valuable treatment option for this at-risk population.

Decitabine works by inhibiting the methylation of DNA. This disruption of methylation can make way for anti-tumor genes to be re-ignited and mount a defense against cancer cells.

In 2012, a phase-III registration trial was published in which the effects of decitabine in 485 older patients was examined. Patients were aged 65 or older, had newly diagnosed or secondary AML, and were not eligible to receive standard chemotherapy. These patients were divided into a treatment group receiving decitabine and a control group receiving the physician's treatment of choice of cytarabine, or supportive care alone.

Patients in the treatment group received decitabine by 1-hour infusion daily for five consecutive days every 4 weeks.

The results of the trial were favorable for the group receiving decitabine. The median overall survival for these patients was 7.7 months, 2.7 months longer than the overall survival of patients in the control group.

Similar differences in favor of the decitabine group were observed for event-free survival, progression-free survival, and clinical response based on complete remission.

Real-world studies from Belgium, Italy, and the United States confirmed the benefits of decitabine for overall survival in AML patients not eligible to receive chemotherapy. Explorative analyses from within these trials also showed more pronounced positive value in terms of extended survival rates in patients in complete remission or treated for more than 4 cycles.

Furthermore, data from both the registration trial and real-world studies show that the toxicity associated with decitabine is relatively mild and that adverse events are manageable, with no additional adverse events reported in the real-world studies relative to the more controlled clinical trials.

The findings also suggest benefit for patients with specific aberrations in their chromosomal profile, namely those who are positive for a monosomal karyotype. Furthermore, decitabine may partially overcome the adverse prognostic effect of a TP53 mutation.

In conclusion, although more work is needed to identify AML patients who are most likely to benefit from decitabine, the clinical and real-world evidence gathered to date show clearly the survival improvements possible in patients typically facing poor prognoses.

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