

New England Journal of Medicine publishes long-term results of Gleevec for patients with chronic myeloid leukemia

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In 2001 the U.S. Food and Drug Administration granted priority review for imatinib mesylate, sold under the name Gleevec, as an oral therapy for patients with chronic myeloid leukemia, or CML.

Today the *New England Journal of Medicine* published results from a nearly 11-year follow-up study, that showed an estimated overall survival rate of 83.3 percent. According to the National Cancer Institute, prior to Gleevec's 2001 FDA approval, fewer than 1 in 3 CML patients survived five years past diagnosis.

Brian Druker, M.D., who led the original clinical development of Gleevec, co-authored the study. The worldwide study enrolled 1,106 participants at 177 cancer centers in more than 16 countries.

"The long-term success of this treatment confirms the remarkable success we've seen since the very first Gleevec trials," said Druker, director of the OHSU Knight Cancer Institute, a Howard Hughes Medical Institute Investigator and JELD-WEN Chair of Leukemia Research in the OHSU School of Medicine. "This study reinforces the notion that we can create effective and non-toxic therapies."

The discovery of Gleevec ushered in the era of personalized cancer medicine, proving it was possible to shut down cells that enable cancer to grow without harming healthy ones.

In an accompanying editorial, "Imatinib Changed Everything," Dan Longo, M.D., professor of medicine, Harvard Medical School; and deputy editor, the *New England Journal of Medicine*, wrote: "The development of imatinib fundamentally altered the field of oncology. Priorities shifted from agents that were active on dividing cells to understanding the biology of individual types of cancer."

In addition to treating patients with CML, Gleevec has proved effective against multiple forms of cancer, including pediatric CML and [gastrointestinal stromal tumor](#), or GIST. A recent study published in *JAMA Oncology* found that nearly 1 in 4 GIST patients treated with Gleevec will survive 10 years.

"Until Gleevec arrived on the scene 15 years ago, patients with advanced GISTs faced a life expectancy of 18 months," said Michael Heinrich, M.D., a professor of medicine (hematology and medical oncology) and cell and developmental biology in the OHSU School of Medicine; researcher with Portland Veterans Affairs Health Care System. "Now we've learned that some might live a decade or longer."

Druker says one advantage to treating CML patients with Gleevec is that most patients are diagnosed in a chronic stage of their illness: "Our results demonstrating Gleevec's high efficacy in CML tell us to realize the full promise of precision [cancer](#) medicine, we need to diagnose and treat patients earlier in the disease course."

More information: Long-Term Outcomes of Imatinib Treatment for Chronic Myeloid Leukemia,
www.nejm.org/doi/full/10.1056/NEJMoa1609324

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