

Chemotherapy prep for transplant works for acute leukemia, but risks of relapse are higher

People with acute leukemia who got only chemotherapy (chemo) to prepare them for transplant lived almost as long as people who got chemo plus radiation, but their risks for leukemia recurrence were higher.

Acute lymphoblastic leukemia (ALL) is a blood cancer. It causes bone marrow to make abnormal white blood cells. Blood or marrow transplant (BMT) can cure some cases of ALL. To prepare for BMT, people get either chemo or chemo and radiation to kill unhealthy cells. Then, they get a transplant of healthy cells donated by someone else.

This study looked back at the medical records of adults who got different preparations for BMT to kill the unhealthy cells.

One group got busulfan, a type of chemo. The other group got a type of radiation called total-body irradiation, or TBI. Although both busulfan and TBI are strong enough to kill leukemia cells, TBI has more side effects.

People had fewer side effects with chemo-only prep

People who got busulfan and TBI lived equally long, in this study. Scientists studied about 1,100 adults, aged 18 to 60, who had acute lymphoblastic leukemia (ALL).

After 3 years:

- About the same number of people in both groups were alive.
- People who got TBI were more likely to have side effects, including infections and lung problems.

People had more leukemia relapse with the chemo-only prep

- People who got busulfan had a nearly 10% higher chance of the leukemia recurring (relapse).

Here's a closer look at the risk of relapse. The ALL came back for:

- 28% of the people who had TBI (about 3 in 10)
- 37% of the people who had busulfan (about 4 in 10)

Keep in mind

- The study cannot answer all questions about busulfan. Some of the people who got busulfan also got other chemo medicines. These other medicines might have changed the results.

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Ask your doctor

If you have ALL and are planning to get BMT, you may want to ask your doctor:

- What is the best way for me to prepare for BMT?
- What are the side effects of radiation and chemo?

Learn more about

- [This research study](#)
- [BMT for ALL](#)

Source

Kebriaei P, Anasetti C, Zhang M-J, et al. Intravenous busulfan compared to total body irradiation pre-transplant conditioning for adults with acute lymphoblastic leukemia. *Biology of Blood and Marrow Transplantation*. 2018 April 1; 24 (4): 726–733. doi:10.1016/j.bbmt.2017.11.025. Epub 2017 Nov 29.

About this research summary

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