The intrinsic nature of compromised immune function combined with impaired immune function due to cytotoxic chemotherapy drugs, leaves leukemia patients at high risk for infection.

No previous studies have reported a trend of fatal infections as a cause of death in a large group of leukemia patients. Therefore, a population-based analysis of fatal infections in leukemia patients was carried out to analyze the trends and address the current lack of evidence.

**Introduction**

The relative risk of fatal infection in leukemia patients compared to the general population was 3.38, with the highest in patients with acute monocytic leukemia. These findings will help clinicians identify leukemia patients at high risk for fatal infections and provide personalized care and more informed cancer care decisions.

**Results**

2863 (2.08%) of whom developed fatal infections. Among all leukemia patients, the rate of fatal infection per 100,000-person years was 389.32, and the SMR of fatal infection was 3.38 (95% CI 3.67-3.99, p< 0.05).

Most subtypes had the highest SMR for fatal infections in the first year after diagnosis, including chronic lymphocytic leukemia, other lymphocytic leukemia, acute myeloid leukemia, and chronic myeloid leukemia. (Fig 1)

In patients diagnosed with leukemia at different time-periods, cumulative mortality for fatal infections was significantly lower in patients diagnosed after 2000. Among the different subtypes, patients with acute lymphoblastic leukemia have the lowest cumulative mortality for fatal infections. Chemotherapy is associated with higher cumulative mortality from lethal infections, with a 10-year rate of approximately 5%. Cumulative mortality for fatal infections in leukemia patients increases with age, with a 10-year cumulative mortality rate of more than 10% in leukemia patients over 80 years and under 5% in patients aged 0-19 years. (Fig 3)

**Conclusion**

The authors declare that they have no conflict of interest.