COVID-19 Infection in Children with Acute Lymphoblastic Leukemia Receiving Maintenance Therapy: Don't Discount the Risk

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Abstract

Background: Unlike other pediatric cancers, acute lymphoblastic leukemia (ALL) treatment includes a prolonged maintenance phase during which children typically resume regular activities. As COVID-19 transmission persists despite the end of the public health emergency declaration, physicians need data regarding the impact of COVID-19 in this population to guide families in managing risk. Procedure: The Pediatric Oncology COVID-19 Case Report (POCC) collected de-identified clinical and sociodemographic data on children with cancer and COVID-19. This subset analysis compares 481 children ([?]21yo at COVID-19 infection) with ALL in maintenance (ALL-MTN) to other children with cancer and COVID-19 (n=1,190). Results: Children in ALL-MTN had fewer hospitalizations, (23% vs 29%, p=0.01), intensive care unit admissions (ICU: 3% vs 5%, p=0.01), and were less likely to die (0% vs 2%, p=<0.01). However, they more often had cancer therapy changed (50% vs 33%, p=<0.01). Lower odds of hospitalization and ICU admission persisted in multivariable analyses adjusting for age, race/ethnicity, insurance, ANC, and comorbidities. There were independent associations among children in ALL-MTN with sociodemographic factors (Hispanic ethnicity, public insurance) and clinical characteristics (comorbid conditions, neutropenia) and both hospitalization and ICU admission. Vaccination decreased odds of hospitalization. Conclusions: Children in ALL-MTN continue to have significant COVID-19 risks, with less hospitalization and ICU admission but more therapy changes than other children with cancer. These risks should be addressed when discussing participation in activities (school, camp, sports, etc.), prevention (COVID-19 vaccination) and mitigation (masking) strategies. The high level of therapy modifications could have long-term consequences and should continue to be followed.

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Supp Table 4, POCC Consortium Representatives.docx available at https://authorea.com/users/653538/articles/660478-covid-19-infection-in-children-with-acute-lymphoblastic-leukemia-receiving-maintenance-therapy-don-t-discount-the-risk