Revaccination After Cancer Therapy Is Effective

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The strategy of reimmunizing children following standard chemotherapy or hematopoietic stem cell transplantation for childhood cancer appears effective in protecting a vulnerable population against vaccine-preventable childhood diseases, according to two studies reported in Clinical Infectious Diseases.

"The main advantages of the strategy are its simplicity and the fact that it avoids the expense and difficulty of individual testing of antibodies against vaccine antigens," Dr. Julia Chisholm of Great Ormond Street Hospital, London, wrote in an editorial accompanying the studies (Clin. Infect. Dis. 2007;44:643-5).


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Fifty-nine children with acute leukemia were enrolled in the postchemotherapy study. The median age at diagnosis was 5 years (range: 1-16 years), and the median age at vaccination was 8 years (range: 3-18 years). Forty-six children had acute lymphoblastic leukemia (ALL), and 13 children had acute myeloid leukemia (AML). All children had received chemotherapy according to the Medical Research Council of United Kingdom protocols for ALL or AML, as appropriate.

Thirty-eight children were enrolled in the hematopoietic stem cell transplantation (HSCT) after malignancies study, including 8 autologous HSCT recipients and 30 allogenic HSCT recipients. The median age at transplantation was 9 years (range: 2-17 years), and the median age at vaccination was 13 (range: 4-19 years).

To assess vaccine efficacy, investigators calculated the percentage of children with protective immunity after revaccination. Before leukemia treatment or transplantation, all children in both studies had received some vaccines, and some had degrees of protective immunity.

With each of the vaccines, antibody titers increased significantly following vaccination postchemotherapy or post-HSCT. Long-term protective antibody levels were achieved for most leukemia patients tested.

"Administration of a single vaccine dose 6 months after standard chemotherapy is sufficient to confer protection against common vaccine-preventable diseases in the majority of children treated for childhood leukemia. Similarly, revaccination of pediatric HSCT recipients according to the multiple-dose schedule used in the study provides a high level of protection against these vaccine-preventable diseases," the investigators concluded.

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