One in Four Cancer Patients Lack Sufficient Immunity Against Measles and Mumps

Younger adults and stem cell transplant recipients are at highest risk for measles and mumps.

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Researchers at **Fred Hutchinson Cancer Research Center** published findings in the journal **JAMA Network Open** indicating that many cancer patients lack sufficient immune protection against the measles and mumps viruses. The highest risk groups within the study were young adults and bone marrow transplant recipients, providing information to clinicians that wasn't readily available before and will be useful in preventing future infection in cancer patients.

"Our findings really emphasize the need to increase immunity at the community level, particularly among health care workers or caregivers who have frequent contact with cancer patients, in order to protect this vulnerable population," said Elizabeth Krantz, biostatistician at Fred Hutch and co-senior author of the study.

Krantz and the study team analyzed antibody results from 959 patients at the **Seattle Cancer Care Alliance** and found that 25% of study participants didn't have adequate protective antibodies against measles virus and 38% didn't have adequate antibodies against mumps virus. In addition, the study also found that levels of antibodies against those viruses varied significantly by age, cancer type and treatments.

Although childhood immunizations have been responsible for limiting outbreaks of measles and mumps, COVID-19 is slowing progress of that public health achievement. Compared to SARS-CoV-2, measles is far more contagious, and should an outbreak occur it would pose a serious threat to cancer patients. In recent years, childhood vaccination rates for measles, mumps and rubella have been **dipping in parts of the country**, even as new treatments are helping many cancer patients survive.

"People have stopped going to doctor's appointments, and we've stopped sending people out into the field to vaccinate children. My worry is that measles outbreaks are going to happen throughout the world because we have not addressed this, or put resources into it," pointed out **Dr. Steve Pergam**, infectious disease specialist at Fred Hutch, medical director of infection prevention at SCCA and study co-senior author. "Mumps and measles outbreaks are potentially something that

will be in our future if we don’t catch up with vaccines.”

Drilling down deeper into the data, the study team found nuances that will give clinicians perspective on the findings. They hypothesized that the lower rates of antibody protection among young people in the study could have been driven by the kinds of cancers young people are more likely to have, such as hematologic malignancies.

“Because solid tumor cancers are more prevalent in older people, the younger patients in the study were more likely to have hematologic malignancies,” noted Krantz. “A careful analysis of the data suggested that both age and type of cancer are likely important factors in measles and mumps immunity.”

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