Banerjee and her fellow researchers note that quality of life during maintenance therapy was not impaired. Instead, patients who received olaparib had more time without "symptoms of toxicity" than those in the placebo group. The researchers also found that PFS was 13.6 months longer when patients began maintenance therapy immediately after completing chemotherapy than when it began only upon relapse.

"These findings have demonstrated benefit to patients beyond what has previously been seen by any other therapy options. They are dramatically changing the landscape for newly diagnosed ovarian cancer, potentially being able to cure more patients of their ovarian cancer than ever before," says Ashley Haggerty, MD, of the Hospital of the University of Pennsylvania in Philadelphia, who wasn't involved in the research.

Results of the phase III PAOLA-1 trial were consistent with SOLO1. PAOLA-1 investigators compared olaparib with placebo as a maintenance therapy in patients—with and without *BRCA* mutations—who received chemotherapy plus the antiangiogenic agent bevacizumab followed by bevacizumab alone (N Engl J Med 2019;381:2416-28). Patients in all subgroups did better when they received olaparib; those with homologous recombination deficient-positive tumors fared particularly well, with a median PFS of 37.2 months vs. 17.7 months, respectively.

These findings suggest that PARP inhibitors are effective not just for those with BRCA mutations, but potentially for all patients. If so, long-term remission, or even a cure, may be possible, researchers say. "Discussion of the use of PARP inhibitors should be standard of care for all newly diagnosed ovarian cancer patients," Haggerty says. *–Gail Dutton* ■

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Case Builds for Booster Shots for People with Cancer

People with cancer who had a SARS-CoV-2 infection show enhanced antibody responses following vaccination, including against the highly transmissible Delta variant now circulating around the world.

The finding—from the prospective, longitudinal CAPTURE study—supports the notion of prioritizing booster vaccines for people with cancer, a particularly vulnerable population often with compromised immunity, experts say.

"It's indirect evidence that three antigen exposures do something positive in these patients," says Matthias Preusser, MD, of the Medical University of Vienna, Austria, who was not involved in the research.

For the CAPTURE study, a team led by Samra Turajlic, MBBS, PhD, of the Francis Crick Institute in London, UK, analyzed the immune responses of 585 patients with different types of cancer after two doses of a COVID-19 vaccine, either the mRNA-based BNT162b2 (Comirnaty; Pfizer/BioNTech) or the adenoviral vectored AZD1222 (Vaxzevria; AstraZeneca).

In line with prior studies, the researchers found that neutralizing antibody responses were greater in patients with solid tumors compared with those with hematologic malignancies—85% and 59%, respectively. Certain patients with blood cancers, including those with B-cell malignancies, such as chronic lymphocytic leukemia, or those receiving B cell–depleting anti-CD20 treatments, produced hardly any antibodies.

But the CAPTURE team added functional relevance to this finding, showing that a much lower percentage of vaccinated patients made antibodies that were capable of combatting worrisome variants (Nat Cancer 2021 Oct 27 [Epub ahead of print]).

The difference in antibody responses was especially pronounced for certain cancer types: Among vaccinated people with multiple myeloma, for example, nearly 90% developed antibodies that could block wild-type SARS-CoV-2, but only 20% to 30% had antibodies that could neutralize the Beta or Delta variants.

Prior exposure to SARS-CoV-2 helped soften the variant blow. Among all patients with previous infections, more than 80% could produce neutralizing antibodies against the variants of concern, compared with only 50% to 60% of individuals without a history of COVID-19. Antibody titers were also about four-fold higher, on average, among the already infected—a finding that mirrors observations from a small study of booster vaccines among patients with solid tumors in which antibody levels increased approximately three-fold following a third dose of BNT162b2 (Nat Med 2021 Sep 30 [Epub ahead of print]).

Looking at the cellular arm of the immune system, Turajlic and her colleagues found that 80% of vaccinated patients developed a T-cell response, with comparable levels among patients with solid and blood cancers. Notably, vaccinated individuals who lacked functional B cells, and thus did not mount neutralizing antibody responses, could still make protective T cells. In fact, patients who had been exposed to SARS-CoV-2 showed some of the most pronounced T-cell responses, both before and after immunization, highlighting the value of additional vaccine doses for them.

"We're starting to realize that patients with B-cell deficiencies are the ones who actually need the boosters now," says John Wherry, PhD, of the University of Pennsylvania Perelman School of Medicine in Philadelphia, who was not involved in the CAPTURE study.

Not everyone stands to gain to the same extent from vaccination, however. As researchers at the Icahn School of Medicine at Mount Sinai in New York, NY, reported in October, some patients with multiple myeloma, especially those taking anti-CD38 or anti-BCMA therapies, do not mount cellular or humoral immune responses after two doses of vaccine (Cancer Cell 2021;39:1442–4).

Study author Samir Parekh, MD, says his team is now routinely monitoring patients for immune responses following vaccination—and to aid those who remain unprotected, clinicians are encouraging all their patients with myeloma to receive booster vaccines and exploring passive antibody therapeutics as a prophylactic measure. *–Elie Dolgin* ■

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Personalized DNA Vaccine Tamps Down HCC

PD-1 inhibitors have dramatically increased survival in many cancer

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