How Pharmacists Help Drive Precision Oncology in Metastatic Breast Cancer

Pharmacists play a vital role in precision oncology, enhancing treatment decisions for metastatic breast cancer through genetic testing and targeted therapies.

At the 2025 San Antonio Breast Cancer Symposium (SABCS), Siddhartha Yadav, MBBS, MD, discussed the critical and expanding role of pharmacists in precision oncology and biomarker-driven treatment decision-making for patients with metastatic breast cancer. Yadav highlighted that pharmacist-led precision oncology consults often involve reviewing germline and tumor genetic testing reports and recommending targeted therapies based on biomarker results, positioning pharmacists as key contributors to multidisciplinary care teams.

Yadav emphasized that pharmacists are frequently the first point of contact when systemic therapies are prescribed, creating opportunities to prompt discussions around treatment selection and biomarker testing. He noted that awareness of a patient's BRCA mutation status can lead to timely consideration of PARP inhibitors and help avoid unnecessary delays in targeted therapy.

Pharmacy Times: Many patients first received PARP inhibitors in later lines of therapy. What role can pharmacists play in ensuring earlier recognition of eligible patients and optimizing PARPi sequencing?

Siddhartha Yadav, M.B.B.S., M.D.: Great question. I think in our practice, for instance, a lot of my precision oncology consults are done by my pharmacist colleagues. They are the ones who usually will review and go through germline or tumor genetic testing reports and recommend therapeutic options based on those. So I think that's a huge role that a pharmacist can play in many different institutions: being part of the precision oncology consult groups where they can look through the reports and say, "Well, what about PARP inhibitors?"

Second, as I mentioned earlier on, pharmacists are the ones who usually see when some drugs are prescribed. They are the first point of contact and can look at that and say, "Well, why this drug? Why not something else?" Being aware of the patient's history and knowing that if a patient has BRCA testing done and is positive for a BRCA mutation, then asking that question: why not a PARP inhibitor right now? Why are we doing chemotherapy or something else?

I think that's a reasonable question to ask. If the patient has not had the testing done, then ask, "Why don't we do testing?" So I think pharmacists have a huge role to play in how we address this problem of undertesting, but also in thinking about how we get the right drug to the right patient.

The same applies for PIK3CA and PTEN. Again, these are targeted therapy options that are showing promising results in clinical trials, and we do not want our patients to miss out on these opportunities.

Pharmacy Times: Your analysis showed numerically longer survival for patients who received PARP inhibitors compared with those who did not. How should clinicians interpret these real-world survival trends when making treatment decisions?

Yadav: I think there are limitations to real-world data. One of the things we have to think about is whether there is a bias in the data itself—that maybe patients who receive PARP inhibitors may have a better overall survival compared to those who do not. One obvious question would be whether patients who receive PARP inhibitors are healthier or younger, which is why they receive those therapies and why their survival could be better.

But the second thing to think about is whether it is also the benefit of the PARP inhibitor itself. Ideally, these questions need to be answered in clinical trials, and we have to be a little bit cautious in terms of how we interpret real-world data. But the bottom line is that PARP inhibitors do improve progression-free survival in clinical trials, and that data is quite robust.

There is also some subgroup analysis from the OlympiAD clinical trial data, which shows that if you use a PARP inhibitor early on, there might, in fact, be overall survival benefits. So our data is somewhat consistent with what is known in the field, but I do caution folks about overinterpreting data from the real-world setting.

The only thing I would want to add is that it is critical that we think about germline and tumor testing in many patients with metastatic breast cancer. I urge every clinician to think about how to standardize this in their practice. This is where I think about pharmacists being engaged with their clinicians as well—thinking about how they can work together to identify biomarkers but also to get patients the right drugs based on those biomarker test results.

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