Transcript Details
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How the First Metastatic Site Shapes Survival in Breast Cancer Relapse

Ryan Quigley:
Welcome to *AudioAbstracts* on ReachMD. I'm Ryan Quigley, and today, I'll be talking about how the site of metastasis can influence survival in metastatic breast cancer.

We often describe metastatic breast cancer as a single disease. But anyone who treats these patients knows that's not really how it plays out in practice. Metastatic breast cancer can behave very differently depending on where it goes—and that's exactly what this large multicenter study from Japan set out to explore. The researchers asked a deceptively simple but important question: does the organ involved at the *first* distant recurrence shape how patients do after relapse?

To get a clearer answer, they took a very focused approach. This was a retrospective study across six centers in Japan, looking at 309 women who had been treated for early-stage breast cancer and later developed metastatic disease in *one* organ at the time of recurrence. This included brain, lung, liver, and bone metastases. By narrowing the group this way to metastases in only one organ, the investigators could really isolate how organ location, tumor biology, and clinical presentation come together to influence outcomes.

Overall, the median post-relapse survival across the entire group was 39.7 months. But that average hides some pretty striking differences. For instance, patients whose cancer first recurred in the bone or the lung tended to live the longest after relapse. On the other end of the spectrum were patients with brain metastases, whose median post-relapse survival was just under a year—a dramatic and statistically significant difference.

What's especially interesting is how tightly these survival patterns lined up with biology. Bone and lung metastases were much more likely to come from hormone receptor–positive tumors, while brain and liver metastases were enriched for HER2- and triple-negative disease. That's consistent with what we know about molecular "preferences" for certain organs, but this study goes a step further by directly connecting those patterns to survival after relapse.

Detection also turned out to matter. Nearly all brain metastases were diagnosed after patients developed symptoms, while lung and liver metastases were more often picked up during routine surveillance. And that distinction wasn't just academic. Patients whose metastatic disease was diagnosed because of symptoms had significantly worse survival than those whose disease was found through surveillance, regardless of where the metastasis occurred.

When the researchers pulled everything together in a multivariable analysis, a few signals stood out. Older age at metastatic diagnosis, a triple-negative subtype, and symptom-driven diagnosis all independently predicted worse post-relapse survival. Even after adjusting for these factors, brain and liver metastases remained associated with significantly shorter survival compared with bone metastases. And notably, triple-negative disease emerged as a consistently poor prognostic factor across metastatic sites.

Clinically, these findings are a reminder that where breast cancer goes first still matters—not just biologically, but practically. Brain metastases stand out in particular, both for their poor outcomes and because they're almost always detected after symptoms appear, when options may already be limited. That raises important questions about risk stratification and whether earlier detection strategies could change the trajectory for certain high-risk patients.

Now, of course, the study has limitations to consider. It's retrospective, treatment and surveillance weren't standardized, and aggressive disease presentations like visceral crisis were excluded. But by focusing specifically on single-organ metastasis, the study offers a clean and clinically meaningful look at how metastatic site, biology, and presentation intersect, and why those distinctions still matter in metastatic breast cancer.

This has been an *AudioAbstract*, and I'm Ryan Quigley. To access this and other episodes in our series, visit ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!

Reference:

Koyama Y, Horimoto Y, Yamada A, et al. Organ-Specific Clinicopathological Features That Are Associated With Post-Relapse Survival of Metastatic Breast Cancer in Japanese Women: A Multicenter Cohort Study. *World J Oncol*. 2025;17(1):52-62. Published 2025 Dec 17. doi:10.14740/wjon2662