Engaging pathologists in a social peer-to-peer learning collaborative to discuss the emergence of HER2-low breast cancer

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INTRODUCTION

Recent advances in research have shown clinical effectiveness when targeting the lower range of HER2 expression (ie, HER2-low) in patients with metastatic breast cancer. The American Society for Clinical Pathology (ASCP) worked in collaboration with Q Synthesis to develop a peer-to-peer learning collaborative to proactively prepare pathologists for HER2-low and to discuss the clinical implications around this emerging classification.

> On August 5, 2022, the FDA approved fam-trastuzumab deruxtecan-nxki for the treatment of adult patients with **HER2-low** (IHC 1+ or IHC 2+/ISH-) breast cancer who have received a prior chemotherapy in the metastatic setting or developed disease recurrence during or within six months of completing adjuvant chemotherapy

METHODS

ASCP launched a peer-to-peer (P2P) learning collaborative (HER2 Breast Trailblazers) where small groups of pathologists met to discuss some of the practical implications associated with HER2-low. 38 pathologists from a mix of academic and community settings participated in this CME program. For foundational knowledge, learners completed online modules covering scientific updates on HER2-low. Through small-group, case-based discussions, learners reviewed operational challenges and opportunities to prepare for HER2-low. They applied this knowledge to lead projects at their own institutions focusing on the anticipated changes around HER2-low.

ASCP also launched a series of peer-led Twitter Chats that were designed to reach a broad audience and foster open dialogue about the emerging science of HER2-low breast cancer. This approach engaged Twitter users who were eager to share and disseminate the education to their colleagues. Twitter Chats provided peer-to-peer feedback regarding ways to navigate obstacles, barriers, and other challenges affecting HER2 testing in breast cancer.

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SUMMARY

- The working definition of "HER2-low" is IHC 1+ or IHC 2+/ISH-

- Pathologists need to understand the clinical relevance of this new category called HER2-low and work with oncologists to help them identify patients who may be eligible for targeted therapy

- Pathologists need to know how to navigate real-world challenges that impact how they perform HER2 testing in breast cancer, classify results, and report their findings

- Twitter Chats are effective ways to reach a broad audience of pathologists and increase awareness about HER2-low

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RESULTS

The learners identified the following challenges and opportunities:

Defining HER2-low: Several learners had heard misconceptions around the definition of HER2-low. Recent studies have defined HER2-low as IHC 1+ or IHC 2+ with ISH-negative.

Interobserver concordance with IHC 0 vs 1+: Several learners discussed the challenges around interpreting IHC 0 vs 1+. They felt that some pathologists may need guided feedback to improve their diagnostic skills.

Use of IHC vs. ISH: Several learners only performed ISH for HER2 testing on all breast cancer samples. Once HER2-low emerges as a third category, they would need to return to performing IHC.

Implications for non-metastatic breast cancer: Recent HER2-low studies have focused on patients with metastatic breast cancer. If HER2-low emerges as a third category, it is unclear whether this designation will apply in patients who have early-stage breast cancer.

Leadership: As pathologists prepare for HER2-low, they have opportunities to lead projects to assess and improve IHC interobserver concordance, coach others on IHC interpretation, increase operational efficiency, strength communication skills, and build up the team by proactively anticipating challenges around the diagnosis, classification, and reporting of HER2-low.

CONCLUSIONS

HER2-low breast cancer appears to be emerging as a new classification and pathologists need to be prepared to ensure accurate testing and interpretation. Through a peer-to-peer learning collaborative, pathologists identified ways to proactively prepare and demonstrate leadership so that cancer centers and laboratories may be ready to embrace a new paradigm of HER2 classification in breast cancer. A series of public Twitter Chats broadened this discussion and increased awareness among pathologists.