

Effect of Virtual Education on Knowledge, Competence, and Performance in Oncology Pharmacists Attending HOPA Annual Conference

Rationale:

- HER2-positive disease, is observed in approximately a third of all breast cancer cases and is more likely to be aggressively metastatic and more apt to develop resistance to therapy in comparison to other breast cancer subtypes. Fortunately, the advent of targeted therapeutic agents has vastly improved outcomes for patients with HER2-positive disease. Antibody-drug conjugates (ADCs) in particular, appear to be one of the more attractive approaches for targeting HER2, with breast cancer approvals already awarded by the US Food and Drug Administration (FDA). As frontline caregivers, oncology pharmacists are ideally positioned to assist with the integration of new drugs into the paradigm, guide patients through treatment, combat financial toxicity, and properly manage adverse events that may arise with these novel agents.
- Due to travel restrictions as a result of COVID-19, CEC Oncology worked quickly to convert a symposium to be presented onsite at the 2020 Hematology/Oncology Pharmacy Association (HOPA) Annual Conference, to one that was completely virtual overnight. We evaluated the effect of virtual education on knowledge, competence, and performance in oncology pharmacists who participated in this activity. The educational initiative reviewed the role of ADCs in HER2-positive breast cancer, current and emerging agents, and how to incorporate these agents into practice.

Methods:

- Learning and knowledge was objectively assessed by analyzing pre- and post-test results before and after the educational activities. Competence was assessed via post-activity evaluation where participants were asked to identify specific changes they intended to incorporate into practice, as well as any anticipated barriers that would hinder them from making such changes (N=17).
- To determine retention of knowledge over time, follow-up assessments were sent to participants 4-6 weeks after each live activity. Assessment questions in the form of case studies were utilized to gauge whether participants translated knowledge into practice at follow-up. The follow-up assessments also included questions regarding actual changes made and actual barriers experienced in practice (N=4).
- Statistical testing between pre- and post-tests and from pre-test to follow-up were conducted via chi square analysis with *a priori* significance set at 0.05.

Results:

- Improved learners, as determined by significant ($P<0.05$) increases in correct responses, were observed in several specific topic areas from pre- to post-test, as well as from pre-test to follow-up ($P=NS$).
- Improvements in Learning, Knowledge, and Performance (Levels 3 and 5)

- Therapy Selection based on Guideline Recommendations 1st line (50% pre-activity vs. 93% post-activity vs. 75% follow-up)
- Therapy Selection based on Guideline Recommendations 2nd line (58% pre-activity vs. 86% post-activity vs. 75% follow-up)
- Toxicity Prevention and Management (53% pre-activity vs. 100% post-activity vs. 75% follow-up)
- Improvements in Competence and Performance (Levels 4 and 5)
 - Intended vs. Actual Changes in Practice
 - The top changes participants intended to make in practice after this activity were the same at follow-up as they were immediately following the activity. The percentage of participants who intended to make changes compared to those actually made changes were also fairly similar throughout.
 - Collaborate with other members of the oncology care team to ensure the appropriate and successful use of ADCs in breast cancer patients. 60% → 50%
 - Share knowledge obtained with fellow colleagues. 53% → 50%
 - Incorporate the latest clinical guidelines for HER2+ breast cancer treatment into my current practice. 53% → 50%
 - Anticipated vs. Actual Barriers in Practice
 - Most barriers anticipated by participants were actually experienced less often than anticipated. Most notably, 40% of participants anticipated formulary/insurance coverage as a barrier they anticipated, but 0% reported facing this challenge at follow-up. Of note, staying current with rapidly evolving clinical guidelines and trial data was a barrier that almost doubled at follow-up (53% anticipated to 100% of participants actually facing this barrier). The specific changes from the activity to follow-up are outlined below.
 - Staying current with rapidly evolving clinical guidelines and trial data 53% → 100%
 - Lack of colleague and healthcare team knowledge regarding the latest safety and efficacy data for ADCs 40% → 25%
 - Lack of time/staff to appropriately monitor and follow-up with patients regarding ADC adverse events 12% → 25%
 - Lack of patient/caregiver ability to recognize and communicate ADC adverse events 26% → 25%
 - Formulary/insurance coverage 40% → 0%

Conclusions:

- HOPA oncology pharmacists were willing to adapt from a live symposium to webcast on fairly short notice with 100% reporting that teaching methods were effective. This method of education was also found to have a positive impact on knowledge and

performance, as evidenced by the improved scores in pre- and post-test polling, that was sustained at follow-up.

- The top changes actually made by participants of this activity involved collaborating with members of the oncology care team and to share knowledge obtained with their fellow colleagues. However, the most frequently cited anticipated barrier in practice was “staying current with rapidly evolving guidelines”, which was actually experienced in practice by 100% of participants at follow-up. This demonstrates the ongoing need for additional education on this topic.