Enhancing the Design and Evaluation of Care Delivery for Patients on Oral Anticancer Agents

Benyam Muluneh, PharmD, BCOP, CPP

Oral anticancer agents (OAAs) are now the mainstay of treatment in several cancer types. Although OAAs such as chlorambucil and methotrexate have been in use since the 1970s, widespread and continuous use of OAAs did not become common in cancer care until the approval of imatinib by the United States FDA in 2001. In comparison to the first decade of the 21st century, the second decade has seen an explosion in the approval of OAAs. Although the rate of approvals of OAAs continues to increase, the safe and equitable delivery of cancer care in the context of OAAs has lagged. Medication nonadherence, the high cost of OAAs, unique patterns of adverse events, and the need to use mail-order specialty pharmacies all present unique challenges for cancer centers and patients.

As cancer centers work to design and implement programs to optimize the use of OAAs in clinical practice, there is also a need to evaluate the extent to which these programs are successful. In this issue, Blinder et al report on their study to assess the feasibility of ASCO’s Quality Oncology Practice Initiative (QOPI) program in addressing the need for OAA-specific evaluation tools.

ASCO’s QOPI program was developed in 2013 to offer cancer centers external certification if they demonstrated safe and high-quality care delivery on a prespecified list of measures. QOPI measures were largely based on the 2013 and 2016 Chemotherapy Administration Safety Standards by ASCO and the Oncology Nursing Society (ONS). Although these standards largely focus on chemotherapy preparation and administration in infusion centers, efforts have been made to include and adapt these standards and apply them to patient self-administered OAAs. Blinder et al selected 9 OAA-relevant measures across 3 domains: chemotherapy plan documentation (dose, administration schedule, indications); treatment education (prior to start day, missed dose instructions, toxicities, clinic contact instructions); adherence monitoring; and documentation of height/weight/body surface area. After reviewing data from 192 cancer centers (50 QOPI certified; 142 not certified) that had submitted patient data into the ASCO QOPI database, the study authors found that, for the most part, certification did not predict success on these OAA-specific measures, including for adherence assessment (odds ratio, 2.14; 95% CI, 0.71–6.48). A trend towards significance was seen in certified centers being more likely to provide clinic contact information for patients on OAAs compared with noncertified centers (odds ratio, 4.87; 95% CI, 1.00–24.00). As the wide confidence intervals indicate, the data showed large variability: median performances on individual QOPI measures across cancer centers ranged from 44% to 100%.

The authors concluded that the wide variability in performance across the QOPI measures—and the lack of correlation between QOPI certification and performance on OAA-specific measures—present a clear gap. The wide variability in performance (even among certified centers) may suggest varying degrees of application of the broader QOPI standards to OAAs. Because the QOPI measures were developed using a parenteral chemotherapy framework, it is plausible that application of the measures to OAAs is an afterthought. Even with more recent versions of the standards incorporating

See page 1099 for related article.
constructs that are OAA-specific (eg, centers have an adherence monitoring policy, oral chemotherapy dose is documented), several other sections of the standards could still be better adapted for OAA care (Table 1).4

Therefore, standards that are applicable to both oral and parenteral oncolytics should be stated as such, providing application examples to centers on how specific standards may apply to each whenever possible. For example, standard 3.4, which outlines guidance on how chemotherapy drugs should be labeled, has elements that are more relevant for parenteral chemotherapy (eg, second patient identifier) but omits elements that should be included on the label of an OAA that is dispensed to the patient (eg, specialty pharmacy phone number, frequency of administration, administration with regard to food, refills remaining).7 In addition, currently only 2 measures are designated as OAA-specific as part of the 25 core measures required for QOPI certification.7 There are additional core measures as part of the QOPI program, but several that are OAA-specific are not required for certification, including communicating OAA plan to patients/caregivers and primary care physician, documenting indication for OAA use, and OAA monitoring during visit (including assessing and addressing adherence).7 Currently, no QOPI measures address adverse events or financial toxicity specific to OAs, and these are 2 common contributors to patient nonadherence.8,9

Given current gaps in evaluation metrics of OAA care delivery, Blinder et al5 make key recommendations as a way forward. Primarily, they note the importance of developing standards and measures that are specific for OAs. This could not be overstated in the current regulatory and innovation climate: targeted, self-administered treatments are now a standard part of cancer care. Second, Blinder et al highlight the

---

### Table 1. Considerations for Adapting ASCO’s QOPI Standards to OAs

<table>
<thead>
<tr>
<th>Domain</th>
<th>2020 ASCO QOPI Standards</th>
<th>Consideration for Adaptation to OAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Creating a safe environment</td>
<td>1.1 Policies to define qualifications of clinical staff who order, prepare, and administer chemotherapy</td>
<td>Determine whether qualifications should differ when prescribing or refilling OAs. Chemotherapy administration substandards should specify “parenteral” vs “oral.”</td>
</tr>
<tr>
<td></td>
<td>1.2 Preadministration documentation</td>
<td>Changing “administration” to “initiation” would include patients on OAs. Financial assessment should be included given high cost of OAs. Social support and health literacy should be documented.</td>
</tr>
<tr>
<td></td>
<td>1.3 Clinical encounter assessments</td>
<td>Medication adherence should be included for patients on OAs (specifically number of doses missed since last visit and barriers to adherence). Medication access should be documented (eg, change in insurance? Change in address? Change in pharmacy?).</td>
</tr>
<tr>
<td>2. Treatment planning, consent, and education</td>
<td>2.1 Policy for consent</td>
<td>Determine whether consent process should differ for parenteral vs oral oncolytics.</td>
</tr>
<tr>
<td></td>
<td>2.2 Patient education</td>
<td>Importance of medication adherence should be included. Information regarding the specialty pharmacy process including phone number to call for refills.</td>
</tr>
<tr>
<td>3. Ordering, preparing, dispensing, and administering chemotherapy</td>
<td>3.1 Chemotherapy orders</td>
<td>There should be a distinct section on chemotherapy prescriptions (for OAs) in addition to “orders” which are for parenteral chemotherapy administered in the clinic.</td>
</tr>
<tr>
<td></td>
<td>3.2 &amp; 3.3 Chemotherapy preparation</td>
<td>OAA preparation within a specialty pharmacy may be out of scope. If an institution has a medically integrated pharmacy, then how OAA orders are verified and prepared for dispensation should be evaluated.</td>
</tr>
<tr>
<td></td>
<td>3.4 Chemotherapy label</td>
<td>There should be a distinct section for OAA drug labels – which should follow state regulations.</td>
</tr>
<tr>
<td>4. Monitoring for adherence, toxicity, and complications</td>
<td>4.2 &amp; 4.3 Adherence policy</td>
<td>In addition to adherence assessment, documentation should include how nonadherence is addressed. Patient symptoms (being a common contributor of nonadherence) should be assessed using a standardized approach (eg, PRO-CTCAE) and addressed in a timely manner.</td>
</tr>
</tbody>
</table>

Abbreviations: OAA, oral anticancer agent; PRO-CTCAE, Patient-Reported Outcomes version of the Common Terminology Criteria for Adverse Events; QOPI, Quality Oncology Practice Initiative.
need to leverage electronic medical records to standardize documentation practices for OAAs. Standardizing OAA documentation can help cancer centers operationalize QOPI standards to the OAA context. Third, the authors acknowledge the need for an interdisciplinary approach to OAA management, including integration of pharmacy and nursing teams into the workflow. Updates to QOPI standards should reflect ever-changing cancer care delivery teams, especially the key role clinical oncology pharmacists can play in assessing and addressing adherence, symptoms, and financial toxicity, and providing patient education.2 The 2018 Hematology/Oncology Pharmacist Organization’s OAA best practice standards and the 2022 ONS Guidelines to support patient adherence to OAAs both highlight how an interdisciplinary model can enhance the quality of care delivered for patients on OAAs.

Given the many components and systems required to deliver safe and high-quality care to patients taking OAAs, implementation science methods, along with quality improvement approaches, could be ideal in guiding the design, execution, and evaluation of OAA interventions. In particular, systematic planning frameworks, such as intervention mapping and implementation mapping, integrate practical approaches to define clear program outcomes and objectives (ie, who needs to do what) with evidence- and theory-based strategies that target mechanisms of change (ie, what must change to allow individuals and systems to perform outcomes and objectives). Such systematic approaches—which are often stakeholder-driven—yield multicomponent and complex interventions and strategies along with an evaluation plan and relevant measures.

As the study by Blinder et al3 illustrates, because the paradigm of cancer treatment is shifting, the implementation and evaluation of OAA services must also shift. An OAA-specific measurement approach, perhaps as a distinct track within the QOPI program and in collaboration with other organizations, should be considered. Next, testing the success of newer measures in diverse settings—following the approach Blinder et al used—can facilitate further refinement of the measures before broader dissemination.

References

Disclosures: Dr. Muluneh has disclosed serving as a consultant for Servier Pharmaceuticals and having a spouse who is employed by and a stockholder of Novartis Pharmaceuticals.

Correspondence: Benyam Muluneh, PharmD, BCOP, CPP, University of North Carolina Eshelman School of Pharmacy, 301 Pharmacy Lane, CB 7569, Chapel Hill, NC 27599. Email: bmuluneh@unc.edu