PQI IN ACTION

Positive Quality Intervention

NCODA

Management of Tucatinib (Tukysa®) and Trastuzumab in HER2-Positive Metastatic Colorectal Cancer

INTRODUCTION

NCODA developed the peer-reviewed Positive Quality Intervention (PQI) as an easy-to-use and relatable clinical guidance resource for healthcare providers. By consolidating quality standards, real-life effective practices, clinical trial results, package insert, and other guidance, PQIs equip the entire multidisciplinary care team with a comprehensive yet concise resource for managing patients receiving oral or intravenous (IV) oncolytics.

This PQI in Action is a follow up to the Tucatinib (TUKYSA®) and Trastuzumab in HER2-positive Metastatic Colorectal Cancer PQI and explores how the medically integrated teams at Johns Hopkins and MD Anderson collaborate and utilize the information found in the PQI as part of their daily practice.

Scan or click here to access Tucatinib (TUKYSA®) and Trastuzumab in HER2-positive Metastatic Colorectal Cancer Positive Quality Intervention

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HER2 AMPLIFICATION IN PATIENTS WITH METASTATIC COLORECTAL CANCER

HUMAN epidermal growth factor receptor 2 (HER2) overexpression has emerged as a biomarker of metastatic colorectal cancer (mCRC), occurring in 1-4% of patients with mCRC, with a higher incidence observed in tumors that are wild-type for RAS and BRAF genes.[1] HER2 functions as an oncogenic driver in this subset, contributing to resistance against anti-EGFR therapies such as cetuximab and panitumumab.[2] As a result, HER2 has gained prominence as a predictive biomarker and therapeutic target in mCRC, prompting the development of targeted therapies including trastuzumab.[3] Clinical trials such as MOUNTAINEER have shown promising efficacy for dual HER2 blockade in patients with HER2-positive, RAS wild-type mCRC.[4]

TUCATINIB: INDICATION AND CLINICAL DATA

TUCATINIB INDICATIONS, MECHANISM OF ACTION, AND CLINICAL TRIAL DATA

Tucatinib is an oral, selective tyrosine kinase inhibitor (TKI) that inhibits HER2.[5] In preclinical studies, it was shown to block the phosphorylation of HER2 and HER3, thereby suppressing downstream MAPK and AKT signaling pathways.[5] This inhibition leads to reduced cellular proliferation and demonstrates anti-tumor activity in tumor cells with HER2 overexpression.[5]

Tucatinib is the first FDA-approved treatment in combination with trastuzumab for patients with HER2-positive mCRC previously treated with chemotherapy.[6] Based on the pivotal MOUNTAINEER trial which assessed the activity of tucatinib in combination with trastuzumab in patients with HER2 expressing, RAS wild type, mCRC refractory to chemotherapy (oxaliplatin, fluoropyrimidine, irinotecan),[4] tucatinib is indicated:[4,5]

- In combination with trastuzumab and capecitabine for treatment of adult patients with advanced unresectable or metastatic HER2-positive breast cancer, including patients with brain metastases, who have received one or more prior anti-HER2-based regimens in the metastatic setting
- In combination with trastuzumab in adult patients with RAS-wild type HER2-positive unresectable or mCRC that has progressed following treatment with fluoropyrimidine-, oxaliplatin-, and irinotecan-based chemotherapy

This indication is approved under accelerated approval based on tumor response rate and durability of response.[5] Continued approval for this indication may be contingent upon verification and description of clinical benefit in confirmatory trials.[5]

The efficacy of tucatinib was evaluated in the phase II MOUNTAINEER trial which enrolled 86 patients who were treated with tucatinib and trastuzumab.[4] Patients included in the study had HER2-positive mCRC, defined as immunohistochemistry (IHC) 3+, or IHC 2+ with a positive in-situ hybridization (ISH) result, or HER2 amplification confirmed by next-generation sequencing (NGS), and were RAS wild-type.[4] Eligible patients had previously received chemotherapy regimens containing fluoropyrimidine, oxaliplatin, and irinotecan, with a median of two prior lines of therapy.[4] Key efficacy outcomes demonstrated an objective response rate (ORR) of 38%, a median duration of response (DOR) of 12.4 months, median progression-free survival (PFS) of 8.2 months, and median overall survival (OS) of 24.1 months.[4] Common treatment-related adverse events included diarrhea (64% any grade, 3.5% Grade 3), fatigue (44%/2.3%), nausea (35%/0%), and abdominal pain (21%/2.3%).[4] Other most frequently reported adverse events (≥20%) included pyrexia, rash, and infusion-related reactions.[6] Common laboratory abnormalities (≥20%) observed

Tucatinib: Indication and Clinical Data - continued

during treatment were decreased hemoglobin, increased creatinine, decreased leukocytes, elevated ALT and AST levels, increased glucose, decreased albumin and lymphocytes, elevated bilirubin and alkaline phosphatase, and decreased sodium.[6]

A recent phase III trial, MOUNTAINEER-03, evaluated tucatinib in combination with trastuzumab and modified FOLFOX[6] versus modified FOLFOX6 ± bevacizumab or cetuximab in previously untreated patients with HER2-positive, RAS wild-type mCRC.[7]

EMPOWERING CARE TEAMS THROUGH MEDICALLY INTEGRATED PHARMACY

MEDICALLY integrated pharmacy (MIP) plays a pivotal role in streamlining patient care, empowering clinical teams to closely manage therapies like tucatinib with improved continuity and coordination. Through embedded pharmacy operations and access to the same electronic medical records, care teams are better positioned to monitor patient progress, manage side effects, and adapt treatments in real time. Providers and pharmacy professionals consistently highlighted how MIP enhances responsiveness and reinforces trust among care teams and patients. The medically integrated teams at Johns Hopkins and MD Anderson highlighted the importance of seamless coordination between clinical staff and patient services in ensuring timely access to therapy, minimizing treatment delays, and delivering comprehensive support across the continuum of care.

As Megan McGugan, PharmD, MS, BCPS, Manager of Specialty Pharmacy at MD Anderson, explained, **"One of our benefits is that we're on the same dispensing platform as our health record. Our clinical teams have access to all the prescription fill statuses—whether they're filled, pending prior authorization, or have copay information. That's really nice for our physicians, advanced practice providers, and pharmacists when they are monitoring."** Joanna Yala, PharmD, Pharmacy Operations Coordinator at Johns Hopkins, echoed the importance of seamless coordination, particularly around insurance and patient expectations: **"Our prior authorization team does a lot of behind-the-scenes work, so by the time it gets to my staff, it is usually good to go. But when something skips that process, patients get anxious because they're expecting to pick up the medication and don't realize insurance still needs to approve**

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- Joanna Yala, PharmD

MEDICALLY INTEGRATED COLLABORATION: A PATH TO IMPROVED PATIENT OUTCOMES

Improved patient outcomes in mCRC management stem from the strength of a medically integrated team where pharmacists, providers, nurses, pharmacy technicians, and patient support staff work in close coordination. At institutions like Johns Hopkins and MD Anderson, oncology clinicians emphasized that collaboration across roles not only streamlines treatment initiation but also enhances patient confidence and safety throughout the therapy journey. As Paige Griffith, NP, GI Oncology Nurse Practitioner from Johns Hopkins shared, **"From a patient's standpoint, having the multiple layers of contact and expertise is important... Nurses have been a great layer for being that first point of contact to then navigate the next levels, whether it's a pharmacist or the physician."** Jenille Caeg, RN, BSN, CMSRN , Outpatient GI Oncology Nurse from MD Anderson, added a crucial perspective on patient communication within a team model: **"The multidisciplinary team is beneficial since it gives the patient multiple resources to ask their questions."**

Pharmacists within these integrated teams play a vital role in ensuring the safe and effective use of therapies like tucatinib. Their contributions span from evaluating eligibility and drug interactions to patient education and treatment monitoring. Positioned within the care team, pharmacists are empowered to make clinical interventions, provide real-time support, and reinforce education alongside other providers. McGugan emphasized, **"We pride ourselves on trying to get the medication to the patient as quickly and safely as possible while ensuring that we're still there for any side effect management."** Together, the MIP team illustrates how medically integrated collaboration not only supports efficiency but also improves communication and patient-centered care.

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NCODA'S PQI RESOURCE

The PQI resource contains peer-reviewed clinician-directed guidance and criteria designed to support the multidisciplinary team in treatment approaches. It illustrates how medically integrated pharmacists support physicians and health care staff through clinical and administrative expertise. ***The Tucatinib (TUKYSA®) and Trastuzumab in HER2-positive Metastatic Colorectal Cancer Positive Quality Intervention*** covers clinical trial data, molecular testing strategies, dosing considerations, side effects management, monitoring strategies, and patient-centered counseling pearls. Yala values the PQI resource for its ability to distill essential clinical insights into an easily accessible format. She noted, **"This is actually a really nice, condensed version of things that we could counsel patients on, specific to the medication."** Echoing this sentiment, Allison Robinson, R.CPhT, Pharmacy Business Manager at Johns Hopkins, emphasized the resource's comprehensiveness and practical utility: **"I appreciate that it's a condensed version and touches on every aspect of the medication. I would feel comfortable sharing this information with others."** Their feedback underscores the PQI's value in supporting multidisciplinary patient-centered responsibilities and enhancing confidence in patient education and communication.

BEST PRACTICES BEFORE INITIATING THERAPY

Before initiating therapy with tucatinib and trastuzumab, it is essential to confirm a patient's molecular profile to ensure they are a suitable candidate. Best practices emphasize evaluating HER2 status, confirmed as positive by IHC 3+ or IHC 2+/ISH+, and verifying that patients are RAS and BRAF wild

NCODA'S PQI Resource - continued

type, while also ruling out microsatellite instability-high (MSI-H) status.[1] This foundational genetic profiling is critical to inform treatment decisions and tailor therapy to the patient's unique disease biology. Ryan Huey, MD, MS, GI Medical Oncologist at MD Anderson, stated, **"One of the key components of treating colorectal cancer is to understand that multiple diseases and it is not just all in one. We have to know what a patient's mutational profile is. Historically, that has been RAS and BRAF status, but more recently, it's the presence or absence of HER2 amplification as well. These are patients that are typically identified by IHC on their original pathology specimen, sometimes with confirmation by ISH or NGS. These are all critical components of caring for anyone with colorectal cancer."**

Complementing this, Makenna Smack, PharmD, BCOP, Clinical Pharmacy Specialist from MD Anderson emphasized the pharmacist's role in early evaluation: **"From a workup standpoint, I sit with the physicians so we could have that discussion when a patient reaches that point in their treatment and evaluate their biomarker testing."** These collaborative efforts between oncology providers and pharmacists ensure that treatment decisions are not only evidence-based but also timely, giving patients the opportunity for effective, personalized care.

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>
> - Ryan Huey, MD, MS

THE PQI PROCESS: TUCATINIB DOSING CONSIDERATIONS

Once confirmation of patient's HER2 status is identified, clinicians confirm correct dosing for their patient population. Tucatinib is available in 50 mg and 100 mg tablets.[5] The recommended dosage for adult patients is 300 mg taken orally twice daily with or without food.[5] For patients with severe hepatic impairment, the recommended dosage is 200 mg orally twice daily. No renal dose adjustments are required; however, dose adjustments may be required based on coadministration with CYP3A4 inhibitors/inhibitors and adverse reactions.[5] Dose adjustments for potential drug-drug interactions are shown in **Table 1**.

TABLE 1: TUCATINIB DOSE ADJUSTMENTS FOR POTENTIAL DRUG-DRUG INTERACTIONS[5]

Avoid concomitant use of tucatinib with a strong CYP3A4 inducer or a strong or moderate CYP2C8 inducer
Avoid concomitant use of tucatinib with a strong CYP2C8 inhibitor
Avoid concomitant use of tucatinib with CYP3A4 substrates with narrow therapeutic indexes; if concomitant use cannot be avoided, reduce the dose of the CYP3A4 substrate and monitor
If using tucatinib with a concomitant P-gp substrate with a narrow therapeutic index, consider reducing the dose of the P-gp substrate and monitor

THE PQI PROCESS: ADVERSE EVENT MANAGEMENT AND MONITORING PATIENTS

Common adverse events (≥20%) for tucatinib are diarrhea, fatigue, rash, nausea, abdominal pain, infusion related reactions, and pyrexia.[4,5] The most common laboratory abnormalities (≥20%) are increased creatinine, increased glucose, increased ALT, decreased hemoglobin, increased AST, increased bilirubin, increased alkaline phosphatase, decreased lymphocytes, decreased albumin, decreased leukocytes, and decreased sodium.[4,5] Before initiating therapy, it is recommended to obtain baseline laboratory tests, including serum chemistry, liver function tests (LFT), and a complete blood count (CBC), along with an assessment of cardiac function through an echocardiogram or a multigated acquisition (MUGA) scan if these have not already been completed.[5] These evaluations are critical for identifying any pre-existing conditions that may impact treatment safety or require dose modifications. Specifically, the initial dose of tucatinib should be reduced in patients with severe hepatic impairment (Child-Pugh Class C),[5] as noted in **Table 2**. Additionally, since treatment with trastuzumab may exacerbate pre-existing cardiac dysfunction,[5] it is essential to assess cardiac status beforehand. **Table 3** provides guidance on dose modifications for adverse reactions. Tucatinib monotherapy is also not recommended due to its limited efficacy, underscoring the importance of combination treatment and thorough pre-treatment evaluation.[4]

TABLE 2: TUCATINIB DOSE REDUCTION LEVELS[5]

Tucatinib Dose Reduction Levels	
Initial recommended dose*	300 mg twice daily
Dose level -1	250 mg twice daily
Dose level -2	200 mg twice daily
Dose level -3**	150 mg twice daily

*For patients with severe hepatic dysfunction (Child Pugh class C), initiate tucatinib at 200 mg twice daily

**Permanently discontinue tucatinib for patients unable to tolerate 150 mg twice daily

"Because tucatinib is given in conjunction with trastuzumab, we always get a baseline echocardiogram as an important component of clinical care. We have to think about the potential for hepatic toxicity—there could be an increase in AST or ALT or even bilirubin. These, along with basic labs, are essentially our baseline assessments."

– Ryan Huey, MD, MS

Dosing, Monitoring, and AE management - continued

TABLE 3: RECOMMENDED DOSE MODIFICATIONS FOR ADVERSE REACTIONS[5,8]

Adverse Reaction	Severity	Management
Diarrhea	Grade 3 without antidiarrheals	Hold tucatinib and initiate antidiarrheals. Resume tucatinib at same dose level once improved to Grade ≤ 1
	Grade 3 with antidiarrheals	Hold tucatinib. Intensify antidiarrheals, if appropriate. Resume tucatinib at next lower dose level once improved to Grade ≤ 1
	Grade 4	Permanently discontinue tucatinib
Hepatotoxicity	Grade 2 bilirubin (>1.5 to 3x ULN)	Hold tucatinib until recovery to Grade ≤ 1, then resume at the same dose level
	Grade 3 AST or ALT (>5 to 20x ULN) OR bilirubin (>3 to 10x ULN)	Hold tucatinib until recovery to Grade ≤ 1, then resume at the next lower dose level
	Grade 4 AST or ALT (> 20 × ULN) OR bilirubin (> 10 × ULN)	Permanently discontinue tucatinib
	AST or ALT > 3x ULN AND bilirubin > 2x ULN	Permanently discontinue tucatinib
Other adverse reactions	Grade 3	Hold tucatinib until recovery to Grade ≤ 1, then resume at the next lower dose level
	Grade 4	Permanently discontinue tucatinib

AST, aspartate aminotransferase; ALT, alanine transaminase; ULN, upper limits of normal.

Dosing, Monitoring, and AE management - continued

The oncology multidisciplinary team emphasized the need for baseline and ongoing assessments to monitor toxicity and early intervention. Baseline laboratory evaluations, including liver function tests, complete blood counts, and metabolic panels, along with cardiac function assessments such as echocardiograms, are routinely recommended. These evaluations are particularly important due to the risk of hepatotoxicity and cardiotoxicity associated with the treatment combination.

Dr. Huey described the standard assessments prior to therapy: **"Because tucatinib is given in conjunction with trastuzumab, we always get a baseline echocardiogram as an important component of clinical care. We have to think about the potential for hepatic toxicity—there could be an increase in AST or ALT or even bilirubin. These, along with basic labs, are essentially our baseline assessments."** To manage cardiovascular risks, Smack explained: **"We get a baseline echocardiogram and check it at least every six months while on this regimen. That's particularly for the trastuzumab component - we need that at baseline and coordinate it around treatment days."** Dr. Huey shared that another important side effect of interest to monitor during therapy is hypertension. Ongoing management may require adjustments to the patient's existing antihypertensive regimen or the initiation of new therapies to maintain safe blood pressure levels throughout treatment.

Diarrhea is the most common and potentially serious side effect of tucatinib. Dr. Huey stressed the importance of both early education and management: **"We really think about diarrhea, including the possibility of severe diarrhea. We offer two antidiarrheal agents, loperamide or combination diphenoxylate and atropine. We want patients to be proactive about using these medications and to call us early and often."** Caeg aligned on this proactive approach in

PQI PROCESS[5,8]

- **Ensure the patient has mCRC and has been previously treated with, or has a contraindication to, a fluoropyrimidine, oxaliplatin, and irinotecan**
- **Evaluate molecular testing to make sure patient is HER2-positive (IHC 3+ or IHC 2+/ISH positive or NGS), RAS and BRAF wild type, and not MSI-H**
- **Recommend baseline labs (serum chemistry, liver function, and complete blood count) and cardiac function (echocardiogram or multigated acquisition scan) if not already completed and when:**
    - **Initial dose of tucatinib requires dose reduction for patients with severe hepatic impairment (Child Pugh class C)**
    - **Treatment with trastuzumab may worsen pre-existing cardiac dysfunction, and tucatinib monotherapy is not recommended based upon limited efficacy**
- **Assess medication list for potential drug-drug interactions (see Table 1)**
- **Ensure female patients are not pregnant nor breastfeeding prior to starting tucatinib**
- **Patients should be monitored for diarrhea, which may be severe and contribute to dehydration, acute kidney injury, and death; pre-emptive antidiarrheals are not routinely recommended**
    - **Evaluate any diarrhea to rule out infectious or other causes. Diarrhea not caused by infection should be treated with anti diarrheals**
    - **Withhold tucatinib for Grade 3 or 4 diarrhea**
- **Monitor liver function labs at least every 3 weeks during treatment**

Dosing, Monitoring and AE management - continued

her nursing practice: **"We definitely encourage patients when they do have diarrhea to let us know how severe it is and if they're staying well hydrated. If they're showing any signs of dehydration, we guide them as they need intravenous (IV) fluids or further evaluation."** Nausea is another common side effect that clinicians should monitor for. As Caeg mentioned, clinicians should discuss with patients on their symptoms and ask how often patients are taking their anti-nausea medications, if any.

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>
> - Jenilee Caeg, RN, BSN, CMSRN

PRIORITIZING

THE Patient-Centered Activities section follows the PQI Process and gives patient-centered guidance for the multidisciplinary team. The ***Tucatinib (TUKYSA®) and Trastuzumab in HER2-positive Metastatic Colorectal Cancer*** suggests providing the patient with ***Patient Education Sheets***. Patient Education Sheets are an NCODA-led initiative that provides information about oral chemotherapy drugs and their side effects to cancer patients and caregivers. In the 2025 ASCO publication Medically Integrated Dispensing Pharmacy: ASCO-Network for Collaborative Oncology Development & Advancement Standards Update, formal education by an experienced clinical educator (e.g., nurse, physician, pharmacist, nurse practitioner, or physician assistant) should be conducted prior to initiating an oral anticancer medication.[9]

Scan or click here to access Tucatinib (Tukysa®) Oral Chemotherapy Education Sheet

EDUCATING FOR IMPACT: SUPPORTING PATIENTS ON TUCATINIB

THE next steps involve educating the patient on adverse effects that may be experienced while on tucatinib. Patients are advised to report adverse effects such as diarrhea, nausea, cardiac dysfunction, and liver dysfunction.[5,8] Patient education involves a multidisciplinary approach between pharmacists, physicians, nurses, and advanced practice providers. Caeg described the layered approach used at MD Anderson: **"We try to provide patients with education into what to expect in regard to side effects, the treatment regi-**

Educating For Impact: Supporting Patients on tucatinib - continued

men, signs to look out for when to contact the team versus taking the PRN medication. We do a lot of teaching with nausea, such as treatment for first line, second line, and how to stay on a regimen to get ahead of it." Similarly, Smack emphasized comprehensive education tools: **"We review the main adverse effects, then the supportive care options for patients, and other resources that may be available. We try to give patients all the resources for oral drugs, such as drug monographs, patient education, and the Oral Chemotherapy Education Sheets."**

Education around diarrhea management is a particularly strong focus. Patients are taught how to escalate treatment from over-the-counter agents to prescription interventions, and to monitor signs of dehydration. The importance of hydration and timely communication is a recurring recommendation. Dr. Huey stated, "**It is very important to stay hydrated and stay in front of symptoms so they don't worsen over time."** Griffith provided a critical reminder of when patients should seek unscheduled evaluation, especially related to hepatic toxicity: **"If patients notice a different color of their urine, such as yellowing of their skin or their eyes, these are reasons to call in between scheduled lab visits. That would result in needing to be seen with new labs more quickly."**

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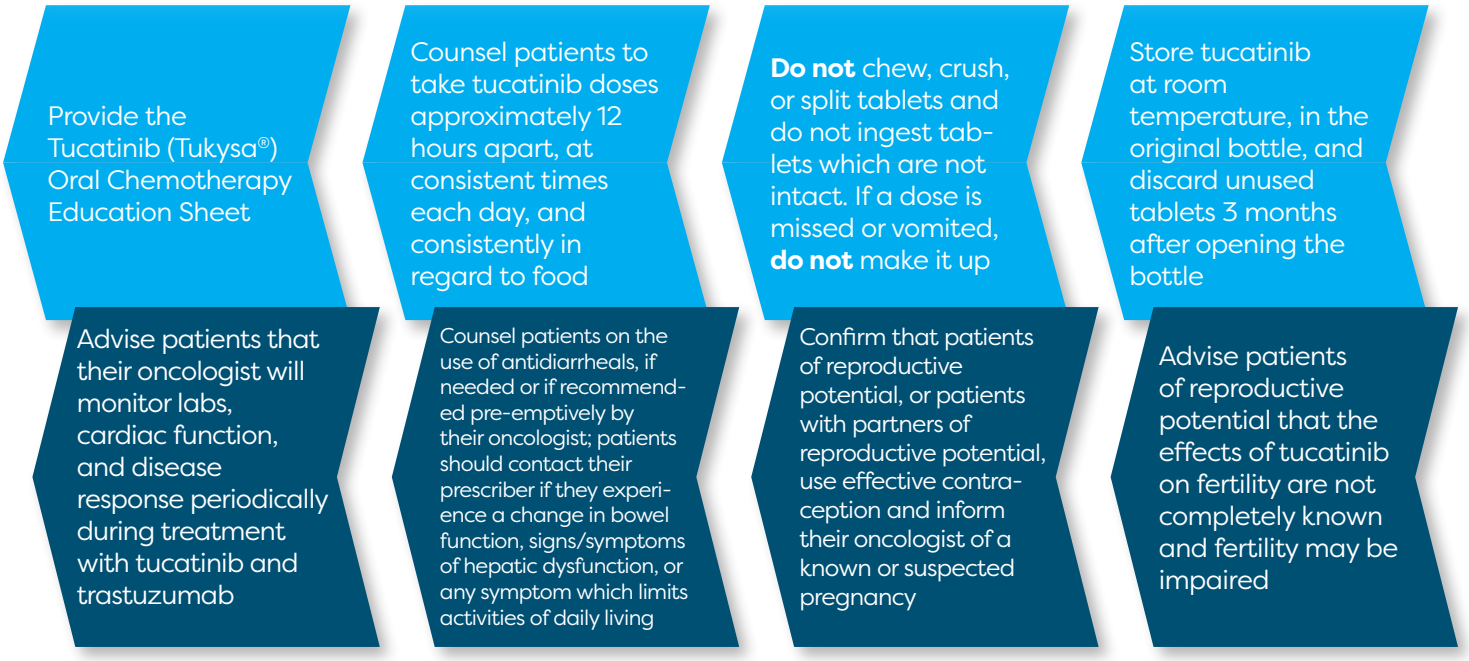
– Makenna Smack, PharmD, BCOP

FIGURE 1: PATIENT-CENTERED ACTIVITIES[8]



OVERCOMING BARRIERS TO TREATMENT ACCESS

ENSURING timely and affordable access to oral oncology therapies like tucatinib requires a coordinated, multi-layered approach. Multidisciplinary teams, including pharmacists, pharmacy technicians, nurses, social workers, and prior authorization specialists, play a critical role in navigating complex insurance processes and removing logistical barriers. These efforts are essential to prevent treatment delays and maintain continuity of care.

At Weinberg Community Pharmacy at Johns Hopkins, Robinson described a comprehensive patient support framework: **"We manage prior authorizations, copay assistance, and use a patient assistance program to help identify affordability options, including manufacturer free drug programs. Our team ensures the drug is in stock, arranges same-day delivery if needed, and schedules medication refills up to seven days in advance to support adherence."** She emphasized that pharmacy staff work closely with social workers and other support services to make sure patients are not burdened by costs or access issues.

McGugan from MD Anderson highlighted the advantage of medically integrated pharmacy: **"One of our benefits is we are on the same dispensing platform as our health record, so our clinical teams have access to real-time prescription fill status, prior authorization progress, and copay information."** This transparency allows physicians, advanced practice providers, and pharmacists to monitor patients' access and intervene early when issues arise. She also noted that health systems are often able to deliver medications more quickly than external pharmacies, enabling faster treatment starts and consistent side effect management. **"We receive prescriptions through treatment plans, initiate prior authorizations, and pursue financial assistance—whether that's copay cards or formal manufacturer support programs,"** McGugan added. **"Once we know the prescription is approved and affordable, we handle education and counseling."**

Griffith further emphasized the complexity of modern access workflows: **"There are so many new drugs and the process of getting them to patients is constantly evolving. That's why we rely on layers of support such as patient assistance programs, technicians, social work, nurses, and pharmacists, all navigating appeals and prior authorizations together."** She explained how providers or advanced practice clinicians initiate the process by submitting prior authorizations through their electronic medical record system. If the request is denied or comes back with a high copay, nurses or internal patient assistance coordinators step in to submit paperwork or escalate through appeal letters. **"Pharmacists are often involved in writing letters of medical necessity and tracking appeal progress to ensure follow-through,"** she noted.

Ultimately, this coordinated infrastructure ensures patients receive their medication efficiently, whether approved on label or through appeal. It reflects a shared commitment among care teams to reduce administrative friction and focus on delivering uninterrupted, patient-centered treatment.

Scan or click here to access the NCODA Financial Assistance Tool

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- Allison Robinson, R.CPhT

"One of our benefits is we're on the same dispensing platform as our health record, so our clinical teams have access to real-time prescription fill status, prior authorization progress, and copay information. We receive prescriptions through treatment plans, initiate prior authorizations, and pursue financial assistance—whether that's copay cards or formal manufacturer support programs."

- Megan McGugan, PharmD, MS, BCPS

SUMMARY

THE multidisciplinary team agreed that the PQI Clinical Resource delivers accessible, evidence-based drug information to support molecular confirmation of HER2 status and care management. The primary objective of the PQI is to equip the team with the tools and education needed to enhance patient-centered outcomes. Providers noted that it reinforces best practices around baseline assessments, toxicity monitoring, and education, while also serving as a patient counseling guide. Ultimately, the resource helps unify the care team around consistent, high-quality standards that promote timely access, minimize complications, and improve outcomes for patients receiving tucatinib and trastuzumab combination therapy.

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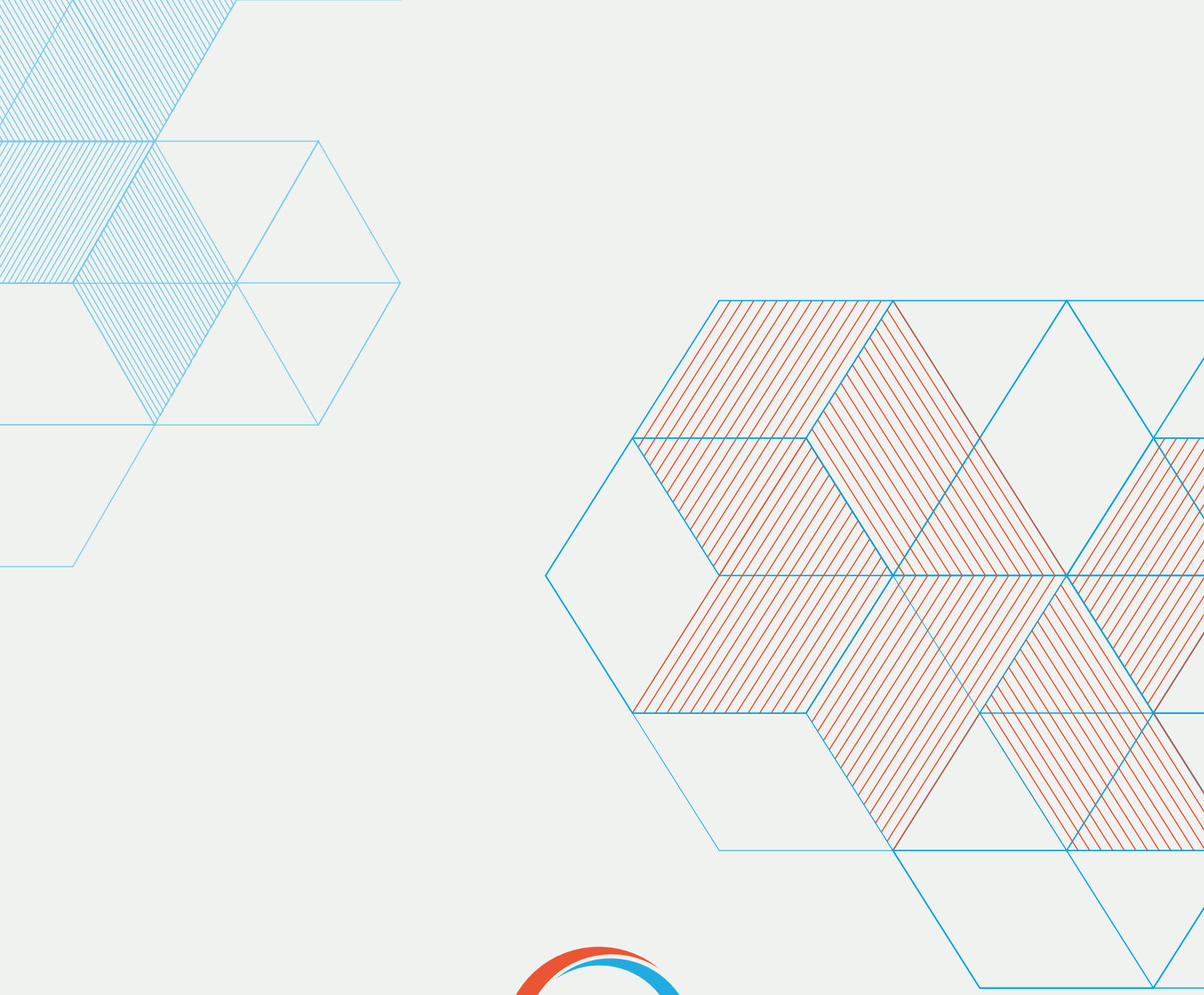

Practice panelist's comments reflect their experiences and opinions and should not be used as a substitute for medical judgment.

Important notice: NCODA has developed this Positive Quality Intervention in Action platform. This platform represents a brief summary of medication uses and therapy options derived from information provided by the drug manufacturer and other resources. This platform is intended as an educational aid and does not provide individual medical advice and does not substitute for the advice of a qualified healthcare professional. This platform does not cover all existing information related to the possible uses, directions, doses, precautions, warning, interactions, adverse effects, or risks associated with the medication discussed in the platform and is not intended as a substitute for the advice of a qualified healthcare professional. The materials contained in this platform are for informational purposes only and do not constitute or imply endorsement, recommendation, or favoring of this medication by NCODA, which assumes no liability for and does not ensure the accuracy of the information presented. NCODA does not make any representations with respect to the medications whatsoever, and any and all decisions, with respect to such medications, are at the sole risk of the individual consuming the medication. All decisions related to taking this medication should be made with the guidance and under the direction of a qualified healthcare professional.