

COPT Learning Guide – Domain II

Clinical Oncology Skills and Patient Management (25% of Exam)

Overview: Domain II will concentrate on enhancing your clinical knowledge in oncology. The primary areas of study include recognizing laboratory values and understanding their implications. These skills will be applied in the pharmacy to help manage patient side effects, adherence, and compliance. Additionally, you will need to be familiar with the various diagnostic and interventional studies used for cancer staging and restaging.

Instructions: This guide describes the concepts to know and the practice problems for each section of the exam content outline. Use the corresponding hyperlinks in each section to complete this guide.

Important Note: This guide was developed to help you prepare for the COPT examination. It should be utilized in addition to your notes, as it is not an all-inclusive review of all exam topics.

Common Oncolytics Learning Guide: Download the [Common Oncolytics Learning Guide](#). This guide contains 30 of the most common oncolytic medications, and you will be responsible for filling in and knowing the information. You will complete the worksheet as you progress through Domains 2-4.

Objective 2.1: Identify laboratory values and their significance as they relate to oral oncolytic medications.

Description:	Oncology pharmacy technicians must be knowledgeable about the common laboratory values monitored in patients receiving oral oncolytic medications. Lab tests offer valuable insights into a patient's health and help identify any adverse reactions caused by the medication. Key lab tests used to monitor patients undergoing anticancer treatments include hematological and biochemical assessments, such as the Complete Blood Count (CBC), Comprehensive Metabolic Panel (CMP), and Tumor Markers.
Complete Blood Count (CBC)	<p>A Complete Blood Count (CBC) is a common blood used when receiving anticancer therapies and provides important information about the types and numbers of cells in the blood including red blood cells (RBC), white blood cells (WBC), and platelets (PLT). This test helps diagnose various conditions such as anemia, infection, and leukemia, and it's often used as part of routine health exams.</p> <p>Read Understanding Your Complete Blood Count (CBC) Tests and take additional notes.</p> <p>Notes:</p> <p>Review Understanding Your Lab Test Results and take notes on the function of each of the following.</p> <ul style="list-style-type: none"> • White Blood Cell: <ul style="list-style-type: none"> ○ Absolute Neutrophil Count (ANC): ○ Neutropenia: • Red Blood Cells: <ul style="list-style-type: none"> ○ Hemoglobin (Hgb): ○ Hematocrit (Hct): • Platelets: <ul style="list-style-type: none"> ○ Thrombocytopenia: ○ Thrombocytosis:
Comprehensive Metabolic Panel (CMP)	A Comprehensive Metabolic Panel (CMP) is a blood test that is used to check the body's fluid balance, electrolyte levels, and the function of the kidneys and liver. The CMP provides up to fourteen values, of which there are two that oncology pharmacy

	<p>technicians must understand their significance: Blood Urea Nitrogen (BUN) and Creatinine.</p> <p>Blood Urea Nitrogen and Creatinine Blood tests will be done before a CT scan to check if the kidneys are functioning properly. CT IV contrast material can cause damage to a patient's kidneys. Oral oncolytic medications may also cause renal toxicity.</p> <ul style="list-style-type: none"> • Blood Urea Nitrogen (BUN): <ul style="list-style-type: none"> ○ Measures how well kidneys are working ○ Measure the amount of urea nitrogen blood ○ Filtered waste product leaves the body through urine ○ Normal Value: 10-25 mg/dL • Creatinine (serum) <ul style="list-style-type: none"> ○ Measures how well the kidneys filter waste from your blood ○ Kidneys filter creatinine from blood ○ Creatinine exits the body as a waste product in urine ○ Normal Value: 0.7-1.4 mg/dL <p>Please Note: Normal values may vary from laboratory to laboratory. Please check with your individual practices' parameters.</p>
Tumor Markers	<p>A tumor marker is anything present in or produced by cancer or other cells of the body in response to cancer or certain benign (noncancerous) conditions that provides information about cancer, such as how aggressive it is, what kind of treatment it may respond to, or whether it is responding to treatment. Higher tumor marker levels can be a sign of cancer. Tumor Markers, along with other tests, can help doctors diagnose specific types of cancer and plan treatment.</p> <p>Read Biomarker Tests and Cancer Treatment and take additional notes.</p> <p>Notes:</p> <p>Review Tumor Marker Tests in Common Use and take notes on the following tumor markers.</p> <ul style="list-style-type: none"> • CA15-3 <ul style="list-style-type: none"> ○ Cancer Types: ○ What's analyzed: ○ How used: • CEA <ul style="list-style-type: none"> ○ Cancer Types: ○ What's analyzed: ○ How used: • CA 125 <ul style="list-style-type: none"> ○ Cancer Types: ○ What's analyzed: ○ How used: • PSA <ul style="list-style-type: none"> ○ Cancer Types: ○ What's analyzed: ○ How used: • CA-27.29 <ul style="list-style-type: none"> ○ Cancer Types: ○ What's analyzed: ○ How used:
Practice Problems	<p>1. Which of the following laboratory tests monitor if a patient has a low white blood cell count?</p>

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Objective 2.2: Differentiate between imaging and diagnostic techniques in their application for staging and monitoring different malignancies.

Description	<p>Oncology Pharmacy Technicians need to be familiar with different types of imaging studies that are commonly used to diagnose and monitor patients on oral oncolytic medications. Imaging studies are vital for helping healthcare providers locate tumors, identify cancer stages, and changes in the disease.</p> <p>Imaging and diagnostic techniques also serve as invaluable tools for assessing the response to cancer therapies, enabling healthcare professionals to make informed decisions about treatment adjustments or modifications based on observed changes in the imaging results. Regular monitoring through imaging studies</p>
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	contributes to personalized and optimized cancer care, improving patient outcomes and overall treatment efficacy.
Positron Emission Tomography (PET)	<p>A Positron Emission Tomography (PET) scan is a type of nuclear scan that can help identify cancer in the body and assist in staging the cancer. Often, a physician will order a Computed Axial Tomography (CAT) scan along with a PET scan, which provides more information about the cancer.</p> <p>Review PET Scan and take additional notes.</p> <p>Notes:</p>
Bone Scan	<p>A bone scan is a type of nuclear scan that helps diagnose and track several types of bone diseases and cancers. It is also an important tool for detecting cancer that has spread (metastasized) to the bone from a tumor's original location.</p> <p>Review Bone Scan and take additional notes.</p> <p>Notes:</p>
Magnetic Resonance Imaging (MRI)	<p>Magnetic Resonance Imaging (MRI) is a medical imaging technique that creates detailed images of organs and tissues.</p> <p>Review Magnetic Resonance Imaging (MRI) and take additional notes.</p> <p>Notes:</p>
Cancer Staging	<p>Cancer staging is a way to figure out how advanced someone's cancer is. Providers use tests and imaging to see how big the tumor is and if it has spread to other parts of the body. This helps to determine the best treatment plan.</p> <p>Review Cancer Staging and take additional notes.</p> <p>Notes:</p>
Practice Problems	<ol style="list-style-type: none"> Which of the following best describes the primary use of a PET scan? <ol style="list-style-type: none"> To determine the appropriate chemotherapy dosage To visualize the structure of the tumor To assess the metabolic activity of cancer cells To measure the patient's overall health status A patient undergoing chemotherapy is scheduled for an MRI scan. Which of the following considerations is most important for the oncology pharmacy technician to communicate to the healthcare team? <ol style="list-style-type: none"> Contrast Agent Safety Duration of the MRI Procedure Loud Noise During the MRI Patient's Comfort and Positioning What does TNM stand for? Answer:

Objective 2.3: Identify potential adverse reactions associated with oral oncolytic medications.

Description	The Prescribing Information (PI) reflects the Food and Drug Administration's (FDA's) finding regarding the safety and effectiveness of a human prescription drug under the labeled condition of use. It is extremely important for oncology pharmacy
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	<p>technicians to understand how to read the PI to submit an accurate prior authorization for approval and process oral oncolytic prescriptions.</p> <p>The PI includes the following information:</p> <ul style="list-style-type: none"> • Adverse Reactions • Warnings and Precautions • Indications and Usage • Dosage and Administration • Dosage Forms and Strength • Contraindications • Drug Interactions <p>This section will cover Adverse Reactions. Other PI information will be covered in Domain 4.</p>
Prescribing Information: Adverse Reactions	<p>The Adverse Reaction section of the Prescriber Information lists all possible side effects that were reported by individuals who took the medication during testing.</p> <p>Side effects, also called adverse reactions, are an undesired effect of a drug or treatment. These effects are grouped according to the body system affected (e.g., liver, skin, stomach), the group of people tested (e.g., adults, children), and perhaps also by how many people reported having each side effect.</p> <p>Examples of adverse reactions include diarrhea, vomiting, rash, nausea, thrombocytopenia, and anemia.</p>
Common Terminology Criteria for Adverse Events (CTCAE)	<p>The Common Terminology Criteria for Adverse Events (CTCAE) is a standardized classification system that grades the severity of adverse reaction associated with medical treatments. CTCAE provides a common language for healthcare professionals to communicate and document adverse events.</p> <p>Oncology pharmacy technicians must be aware of the CTCAE as it is a crucial resource for improving patient care through monitoring and management. A clear understanding of the grades is essential for determining the appropriate intervention needed for the patient.</p> <p>Review Common Terminology Criteria for Adverse Events and take notes on the CTCAE Grades located on page 2.</p> <ul style="list-style-type: none"> • Grade 1: • Grade 2: • Grade 3: • Grade 4: • Grade 5:
Common Oncolytics Learning Guide: Adverse Reactions	<p>For this section, you will fill out the Adverse Events section of your Common Oncolytics Learning Guide.</p> <ol style="list-style-type: none"> 1. Download the list of the most used Common Oncolytics Learning Guide. 2. Fill out <i>Column 2: Adverse Events</i> for all tables. <ul style="list-style-type: none"> ○ Use each medication's attached Prescribing Information insert and place the Adverse Reaction information in all tables. <ul style="list-style-type: none"> ▪ Most information can usually be found on pages 1 and 2 of the inserts. ○ Be sure to include the following information about Adverse Reaction: <ul style="list-style-type: none"> ▪ The most common adverse reactions.

	<ul style="list-style-type: none"> ▪ Symptoms that may result in dose reductions or discontinuation of medication.
Practice Problems	<ol style="list-style-type: none"> 1. In the Indications and Usage section of the Prescribing Information, which of the following would you NOT expect to find? <ol style="list-style-type: none"> a. Detailed instructions for administering the medication b. Potential interactions with other medications c. Recommended dosage adjustments based on patient age d. Approved indications for the use of the medication in treating specific types of cancer 2. For the medication abemaciclib, which adverse event is commonly associated with its use and requires monitoring due to its potential impact on patient safety? <ol style="list-style-type: none"> a. Diarrhea b. Headache c. Nausea d. Constipation 3. Match each adverse event with its description, as seen in patients receiving sorafenib therapy. <ol style="list-style-type: none"> a. Choose an item. is redness, swelling, and/or peeling of the palms of the hands and soles of the feet. b. Choose an item. is increased blood pressure levels, requiring careful monitoring and possible intervention. c. Choose an item. is the occurrence of bleeding in the digestive tract, which may manifest as bloody stools or vomiting blood. d. Choose an item. is excessive tiredness or weakness, often interfering with daily activities. 4. A patient has recently started nilotinib. During the refill call, she complained of diarrhea. She states that she has 3 loose stools over her baseline of 1 stool per day. What grade of diarrhea is she experiencing? <ol style="list-style-type: none"> a. Grade 1 b. Grade 2 c. Grade 3 d. Grade 4

Practice Problem Answers

Objective 2.1

1. b. CBC
2. b. Rising CA 27.29
3. c. The pharmacist or prescriber should be notified. The patient has elevated BUN and Creatinine levels.

Objective 2.2

1. c. To assess the metabolic activity of cancer cells
2. a. Contrast agent safety
3. Primary tumor (T), Regional lymph nodes (N), Distant metastasis (M)

Objective 2.3

1. c. Recommended dosage adjustments based on patient
2. a. Diarrhea
3. a. Hand-Foot Skin Reaction, b. Hypertension, c. Gastrointestinal (GI) Bleeding, d. Fatigue
4. a. Grade 1