2018 Oncology Pharmacy Preparatory Review and Recertification Course Learning Objectives

Women, Men, Pediatric Cancers

Breast Cancer

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with breast cancer.
2. Discuss short- and long-term treatment goals, including post-therapy and survivorship, with a patient with breast cancer and her or his caregiver.
3. Determine appropriate pharmacotherapy for a patient with breast cancer based on genomic test results.
4. Identify appropriate diagnostic and prognostic tests related to breast cancer.
5. Select relevant information and guidance for the public regarding breast cancer-related issues (e.g., risk factors, prevention, screening).

Gynecologic Malignancies

1. Design an appropriate patient-specific treatment, management, and monitoring plan taking into consideration efficacy and safety outcomes of clinical trials and current treatment guidelines for a patient a with a gynecologic malignancy.
2. Discuss short- and long-term goals, including post-therapy and survivorship, with a patient with a gynecologic malignancy and her caregiver.
3. Compare and contrast the efficacy and toxicity of different routes of drug administration, including IP chemotherapy, in the treatment of ovarian cancer.
4. Select relevant information and provide guidance for the public regarding gynecologic malignancy-related issues (e.g., risk factors, prevention and screening) for gynecologic malignancies.

Pediatric Malignancies

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for pediatric patients with cancer.
2. Assess the prognostic impact of relevant cancer-related molecular biology testing for a pediatric patient with cancer.
3. Discuss with a pediatric patient who has cancer and his or her caregiver the short- and long-term treatment goals, including post-therapy and survivorship.
4. Assess the impact of pharmacogenomics on the efficacy and toxicity of relevant anticancer and supportive-care agents for a pediatric patient with cancer.
5. Assess the regulatory, ethical, and patient rights issues related to conducting research, including informed consent and confidentiality.

Prostate Cancer

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with prostate cancer.
2. Identify appropriate diagnostic, prognostic, and monitoring tests for a patient with prostate cancer.

3. Discuss short- and long-term treatment goals, including post-therapy and survivorship, with a patient with prostate cancer and his caregiver.
4. Select relevant information and guidance for the public regarding prostate cancer-related issues (e.g., risk factors, prevention, screening).

GI and GU Cancers and Statistics/Evaluating Literature Design

Bladder, Renal Cell, and Testicular Cancers

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with bladder, renal, or testicular cancer.
2. Determine short- and long-term treatment goals, including post-therapy and survivorship, with a patient with bladder, renal, or testicular cancer and his or her caregiver
3. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with the treatment with tyrosine kinase inhibitors and mTOR inhibitors.

Lower Gastrointestinal and Pancreatic Cancers

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with lower gastrointestinal (GI) or pancreatic cancers.
2. Discuss short- and long-term treatment goals, including post-therapy and survivorship, with a patient with lower GI or pancreatic cancers and his or her caregiver.
3. Assess the impact of pharmacogenomics on the efficacy and toxicity of relevant anticancer and supportive-care agents for a patient with lower GI or pancreatic cancers.
4. Select relevant information and guidance for the public regarding lower GI and pancreatic cancer-related issues (e.g., risk factors, prevention, screening).
5. Devise and communicate appropriate plans for preventing, monitoring and treating adverse reactions associated with pharmacotherapy for lower GI or pancreatic cancers including chemotherapy-induced diarrhea, hand-foot syndrome, hand foot skin reaction, neurotoxicity from oxaliplatin, management of hypersensitivity reactions to monoclonal antibodies used for solid tumors and dermatologic toxicities from epidermal growth factor receptor inhibitors.

Upper Gastrointestinal and Hepatocellular Carcinomas

1. Design an appropriate patient-specific treatment, management, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with esophageal, gastric, or hepatic malignancies.
2. Assess the impact of pharmacogenomics on the efficacy and toxicity of relevant anticancer agents used for gastrointestinal malignancies.
3. Devise and communicate appropriate plans for preventing, monitoring, and treating radiation recall and other complications of radiation therapy.

Research Design, Statistics, and Evaluating Oncology Literature

1. Evaluate the oncology literature, including study design, methodology, statistical analysis, and applicability of the results to clinical practice for the oncology patient population.

2. Identify potential sources of bias and evaluate the appropriateness of conclusions drawn based on outcomes in an oncology study report.
3. Select an appropriate statistical test (parametric or nonparametric) for use in evaluating the findings from an oncology study based on the type of data (i.e., nominal, ordinal, continuous).
4. Critique the validity and interpret the results of various types of oncology studies (e.g., meta-analyses, noninferiority trials).
5. Interpret findings from the use of study endpoints (e.g., objective response, time to progression, adverse events, quality of life, overall survival) in oncology research.
6. Define, calculate, and interpret sensitivity, specificity, positive and negative predictive values, measures of effect, correlation, and regression for an oncology study.

Blood Cancers and Hematopoietic Stem Cell Transplantation

Adult Acute Leukemias and Myelodysplastic Syndromes

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for adults with acute leukemia or myelodysplastic syndrome.
2. Assess the prognostic impact of relevant cancer-related molecular biology testing for an adult with acute leukemia or myelodysplastic syndrome.
3. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions from pharmacotherapy for acute leukemia and myelodysplastic syndrome in an adult, including tumor lysis syndrome, neurotoxicity, differentiation syndrome, and cardiac toxicity from arsenic trioxide, and other agents as appropriate.
4. Determine appropriate pharmacotherapy for acute leukemia or myelodysplastic syndrome in an adult based on genomic test results.

Chronic Leukemias

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with chronic leukemia.
2. Assess the prognostic impact of relevant cancer-related molecular biology testing in a patient with chronic leukemia.
3. Determine appropriate pharmacotherapy based on genomic test results in a patient with chronic leukemia.
4. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with pharmacotherapy for the treatment of cancers, including:
    - Infusion-related reactions from monoclonal antibodies used in the treatment of hematologic malignancies
    - Hematologic toxicities from tyrosine kinase inhibitors used to treat chronic myelogenous leukemia

Hematopoietic Stem Cell Transplantation

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current guidelines for patients undergoing hematopoietic stem cell transplantation (HSCT).

2. Debate the advantages and disadvantages of various methods of peripheral blood stem cell mobilization.
3. Discern dose-limiting toxicities and appropriate strategies to prevent toxicity from chemotherapy agents employed in HSCT conditioning regimens, and differentiate between myeloablative, non-myeloablative, and reduced-intensity HSCT conditioning regimens.
4. Create a plan for prevention and management of acute and chronic graft-versus-host disease (GVHD) using appropriate systemic and ancillary therapies.
5. Discuss short- and long-term treatment goals, including post-therapy and survivorship, with the patient undergoing HSCT and his or her caregiver.

Lymphomas

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with lymphoma.
2. Assess the prognostic impact of cancer-related molecular biology testing for a patient with lymphoma.
3. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with pharmacotherapy for lymphoma and other cancers, including chemotherapy-induced pulmonary toxicities and extravasation.

Solid Tumor Cancers and Cancer-Related Infectious Diseases

Cancer-Related Infectious Diseases

1. Design an appropriate patient-specific management and monitoring plan to address potential infection-related problems that may arise during or following cancer treatment based on the current guidelines for treating cancer-related infectious diseases.
2. Determine short- and long-term treatment goals, including post-therapy, with a patient with a cancer-related infectious disease and his or her caregiver.

Head, Neck, and Adult Central Nervous System (CNS) Malignancies

1. Design an appropriate patient-specific treatment, management, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with head, neck, or adult central nervous system (CNS) cancer.
2. Assess relevant pharmacogenomic considerations related to anticancer agents used to treat head, neck, or CNS cancer.
3. Select relevant information and provide guidance to the public regarding head and neck-related issues (e.g., risk factors, prevention, screening).
4. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with the treatment of cancers including cachexia, mucositis, and xerostomia.

Lung Cancer

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with lung cancer.
2. Identify relevant cancer-related molecular biology testing for a patient with lung cancer.

3. Assess the impact of pharmacogenomics on the efficacy and toxicity of relevant anticancer and supportive-care agents for a patient with lung cancer.
4. Select relevant information and guidance for the public regarding lung cancer-related issues (e.g., risk factors, prevention, screening).
5. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with pharmacotherapy for lung cancer, including pulmonary toxicities from PD1 inhibitors.
6. Develop and communicate a prevention and management strategy for chemotherapy-induced nausea and vomiting for patients with any type of cancer.

Melanoma and Non-Melanoma Skin Cancers

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for patients with melanoma or non-melanoma skin cancer.
2. Identify relevant cancer-related molecular biology testing for a patient with melanoma skin cancer.
3. Determine long-term treatment goals, including post-therapy and survivorship, with a patient with melanoma or non-melanoma skin cancer and his or her caregiver.
4. Select relevant information and guidance for the public regarding melanoma and non-melanoma skin cancer-related issues (e.g., risk factors, prevention, screening).
5. Devise and communicate appropriate plans for preventing, monitoring, and treating adverse reactions associated with the treatment of melanoma and non-melanoma skin cancers, including thyroid level monitoring for chemotherapy agents, immune-mediated toxicities, and toxicity from BRAF inhibitors.

Thyroid Cancers

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan to include effectiveness, toxicities and outcomes, based on the most current guidelines for patients with thyroid cancer.
2. Devise and communicate appropriate plans for preventing, monitoring and treating adverse reactions associated with the pharmacotherapy for thyroid cancers.

Practice Management, Multiple Myeloma, Adult Sarcoma, and Pharmacogenomics

Adult Sarcomas

1. Design an appropriate patient-specific treatment, management, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current treatment guidelines for adult patients with sarcoma.
2. Adjust treatment and monitoring plans as needed based on the pharmacokinetics of anticancer and supportive-care agents (e.g., methotrexate).
3. Devise and communicate appropriate plans for preventing, monitoring, and managing common problems associated with the treatment of adult patients with cancer including neurotoxicity from ifosfamide and hemorrhagic cystitis.

Multiple Myeloma

1. Design an appropriate patient-specific treatment, supportive care, and monitoring plan taking into consideration efficacy and safety outcomes from clinical trials and current guidelines for patients with multiple myeloma.
2. Evaluate oncology pharmacy services for compliance with established REMS regulations and standards.
3. Devise and communicate appropriate plans for preventing, monitoring and treating adverse reactions associated with the treatment of cancers, including bone metastases in multiple myeloma patients and thromboembolism, hypercalcemia of malignancy, and spinal cord compression all oncology patients.

Pharmacogenomics in Oncology

1. Identify appropriate considerations for genetic interpretation in both the germline and somatic settings utilizing next generation sequencing techniques.
2. Translate the results from somatic genetic testing into therapy recommendations based on prognostic, predictive and patient characteristics.
3. Recognize the place in therapy for companion diagnostic testing related to therapy decisions.

Oncology Practice Management

1. Evaluate oncology pharmacy services for compliance with established regulations and standards.
2. Select quality-improvement activities that enhance the safety and effectiveness of the medication-use process in oncology patient care.
3. Examine the professional practice standards and guidelines for the safe handling and administration of hazardous drugs.
4. Consider the national accreditation and federal regulatory requirements for the care of cancer patients receiving chemotherapy or other hazardous drugs.
5. Consider medication reimbursement and patient assistance programs to optimize drug availability for oncology patients.
6. Evaluate the resources and develop methods for handling and disposal of hazardous drugs and related materials.
7. Evaluate policies and procedures related to conducting research involving investigational drugs, including drug management in patients with cancer.