LEARNING OBJECTIVES

On completion of the chapter, the reader will be able to:

1. Describe the multistage process of carcinogenesis, which includes invasion, promotion, transformation, and progression.
2. Identify common genetic and epigenetic alterations associated with more frequent cancers and describe their role in the development of a cancer.
3. Describe the traits that differentiate cancer cells from normal healthy cells.
4. Apply appropriate cancer screening for an individual based on their age, gender, and known risk factors.
5. Describe the staging systems for cancer and how these systems indicate the extent of disease and guide anticancer treatment selection.
6. Compare and contrast the utility of the different treatment modalities, such as surgery, radiation therapy, and anticancer drugs in the treatment of cancer.
7. State the principles of combination anticancer therapy.
8. Define the treatment goals for an individual patient based on the specific cancer, tumor burden, comorbid illnesses and other patient or disease-specific factors.
9. Classify a chemotherapy as cell-cycle phase-specific or phase-nonspecific. Explain the impact this has on the administration schedule.
10. Explain the mechanism of action of commonly used anticancer drugs in language suitable for health care professionals, patients and caregivers.
11. Given a class of anticancer drugs, describe toxicities that are common to the class and toxicities that are unique to specific drugs within that class.
12. Identify the anticancer agents associated with a risk evaluation and mitigation strategy (REMS) program and discuss the benefits and risks of these agents.
13. Define the different terminology including cure, complete response, partial response, stable disease, and progression that is used to evaluate the treatment response.
14. Describe patient- and tumor-specific factors that may affect the response or toxicities of an anticancer regimen in an individual patient.
15. Analyze patient-specific laboratory indicators of hepatic and renal function and recommend necessary dose modification for commonly used anticancer drugs.
16. Develop a treatment and monitoring plan for the treatment or prevention of myelosuppression that is supported by clinical practice guidelines.
17. Develop a treatment plan for a patient who has experienced gastrointestinal, dermatologic, and endocrine toxicities from anticancer treatment.
18. Given a patient at-risk for long-term complications of anticancer treatment, counsel the patient about the late consequences of chemotherapy.