

Comprehensive Chemotherapy and Biological Therapies Course Study Guide

Answer Sheet



Administration

1. True
2. New
3. False
4. The Physician
5. Carboplatin
6. Area Under the Curve / Drug Exposure
7. True
8. Three Months
9. True
10. Vesicant; 3
11. True
12. True
13. Bedside / Chairside
14. Central Line
15. Friends
16. 3; 7
17. False

Alkylating Agents

1. Dividing
2. Dividing
3. Nausea, Vomiting, Myelosuppression, Infertility, Hypersensitivity Reactions, Alopecia, Secondary Malignancies, Tumor Lysis Syndrome, Pregnancy Category D
4. Nitrosureas
5. Sterile Alcohol
6. Calvert
7. True
8. Carmustine (BCNU)
9. Busulfan
10. True
11. Ifosfamide
12. Busulfan
13. Cisplatin; Carboplatin; Oxaliplatin
14. Highly
15. Nephrotoxicity
16. False
17. True
18. Increases

19. Neurotoxicity
20. Oxaliplatin; Acute Neurotoxicity

Antimetabolites

1. Myelosuppression, Mucositis, GI Symptoms, Liver Dysfunction
2. True
3. 24 Hours
4. Vitamin B12; Folic Acid
5. True
6. Uridine Triacetate (Vistogard)
7. False
8. Enhance
9. Increases
10. True
11. Within 30 Minutes
12. True
13. Myelosuppression, Hand-Foot Syndrome, Cardiac, GI, Epithelial Ulceration, Hyperbilirubinemia
14. False
15. Cerebellar Toxicity
16. Myelosuppression
17. Radio sensitizer
18. Infection
19. True

Antitumor Antibiotics

1. Anthracyclines, Miscellaneous Agents
2. Cardiac
3. MUGA/ECHO
4. Dexrazoxane (Totect)
5. Red
6. Blue
7. Cool
8. Cardiac
9. SOB, Decrease in Activity, Peripheral Edema, Enlarged Heart
10. Zinecard
11. Myelosuppression, Nausea, Vomiting, Alopecia, Mucositis, Infertility
12. 400-550; 400-550; 150; 160; 900; 400 or a Single Dose of 30
13. Bleomycin
14. PFTs; PFTs

Chemotherapy Error Prevention

1. Cannot
2. Fatigue, Lack of Knowledge, Stress, Understaffing, Poor Communication, Human Error, Environmental Factors
3. Prevent
4. False
5. Patient
6. Document the Spill
7. False
8. False
9. Chemotherapy
10. Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in control of the healthcare provider, patient, or consumer
11. Multidrug Protocols with Varied Schedules and Routines, Narrow Therapeutic Index and Toxicity within Therapeutic Ranges, Complex Regimens, Vulnerable Patient Population

Extravasation

1. Absence of Blood Return, Swelling, Erythema, Inflammation, Leaking at Catheter Entrance Site, Pain, Burning, Stinging
2. Some
3. True
4. Stop the Administration
5. Vesicant
6. Flushes; Blood Return
7. True
8. Oxaliplatin, Cisplatin, Adriamycin, Epirubicin, Dactinomycin, Daunorubicin, Idarubicin, Doxil, Mitoxantrone
9. True
10. False
11. Antitumor Antibiotic; IV

Growth Factors

1. Myelosuppression
2. Neutropenia; Anemia; Thrombocytopenia
3. True
4. Absolute Neutrophil Count
5. $ANC = \text{Total WBC} \times (\text{Segs} + \text{Bands}) / 100$
6. Slight; Minimal; Moderate; Severe
7. GCSF

8. False
9. Bone Pain
10. Neutrophil; Macrophage
11. CBC
12. Kidneys
13. Myeloid
14. Thrombocytopenic

Hormonal Agents

1. False
2. True
3. Selective Estrogen Receptor Modulator, Selective Estrogen Receptor Downregulator; Aromatase Inhibitor
4. Fluvestrant – SERD; Tamoxifen – SERM; Anastrozole – AI
5. Tamoxifen blocks the effects of estrogen in breast tissue. It acts as an estrogen agonist in the uterus, bone, and lipid tissue.
6. Thromboembolic Events, Uterine Malignancies, Ocular Effects, Menopausal Symptoms, Weight Gain or Loss, Mood Swings, and Weakness
7. True
8. True
9. True
10. Gynecomastia, Hot Flashes, Fatigue, Depression, Erectile Dysfunction, Edema, Injection Site Reactions
11. Antiandrogens block the effects of androgen in the prostate.
12. True
13. True

Hypersensitivity Reactions

1. True
2. Adaptive
3. Platinums
4. True
5. Rituximab, Cetuximab, Alemtuzumab, Gemtuzumab, Ofatumumab, Trastuzumab
6. After 6 Cycles

Interferons, Interleukin 2, L-asparaginase, and Vaccine Therapy

1. True
2. Depression
3. Tumor
4. Cytokine Induced Capillary Leak Syndrome, Increased Liver Function, Pruritis, Flu-Like Symptoms, Neurotoxicity, Infection, Oliguria, Increased Creatinine, Nausea, Vomiting, and Diarrhea

5. Hypotension; Tachycardia; Fever; Chills
6. CBC with Diff, CMP, Weight, Strict I/O
7. False
8. L-asparagine
9. False
10. Pancreatitis, Hepatitis, Anaphylaxis, DIC, Fever
11. Attachment of a PEG to a drug or therapeutic protein can “mask” the agent from the hosts’ immune system, decreasing immunogenicity and subsequent reactions.
12. Fibrinogen
13. Vaccine; PAP-GM-CSF
14. Melanoma

Miscellaneous Drugs

1. False
2. EKG
3. Calcium; Potassium; Magnesium
4. True
5. APL Differentiation Syndrome
6. Steroids
7. CBC; Hepatic Function
8. mTOR; With or Without
9. Impaired Wound Healing
10. B

Monoclonal Antibodies

1. A; D; B; C
2. False
3. True
4. False
5. Murine; Chimeric; Humanized; Fully Human
6. True
7. Ramucirumab, Ziv-Aflibercept
8. Acneiform
9. True
10. Cytokine Release Syndrome; Neurological Toxicities
11. Breast; HER 2
12. Nivolumab, Pembrolizumab, Atezolizumab, Avelumab, Durvalumab, and Ipilimumab

Organ Toxicities

1. Acute, Delayed, Anticipatory
2. Volume
3. 40%
4. Pain Management, Mouth Care Before and After Meals, Rinsing Mouth with Normal Saline, Water-Based Moisturizers to Protect Lips, Patient Education Including Proper Oral Hygiene and Avoiding Tobacco and Alcohol
5. Age, Pre-Existing Cardiac Conditions, Cumulative Drug Dose, Radiation to Chest, Receiving Multiple Cardio-Toxic Drugs, HSCT, Host Susceptibility, Hepatic or Renal Dysfunction, Smoking, Diabetes
6. Zinecard
7. Anthracyclines
8. 450
9. False
10. Myelosuppression
11. Nausea
12. Mesna
13. True
14. True

Plant Alkaloids

1. Vincristine
2. Stocking/Glove, Neuropathic Pain, Autonomic Dysfunction, Constipation
3. Liver; Hepatic
4. False
5. True
6. True
7. Early – Atropine (Lomotil); Late - Imodium
8. Hypotension
9. Wheezing, Bronchospasm, Hypotension
10. False
11. B and C
12. Antihistamine; Steroid; H2 Blocker; Anti-Emetic
13. A, B, and C

Principles of Cancer Drug Therapy

1. Monotherapy; Combination Therapy
2. Cytotoxic
3. Cytostatic

4. Tumor cells can become resistant to single agent dosing and combination therapy has more efficacious dosing and differing mechanisms of action and toxicity patterns.
5. Resistance
6. True

Protectants

1. Leucovorin, Dexrazoxane, Amifostine, Palifermin, Mesna
2. Leucovorin
3. Leucovorin
4. Heart
5. Bone Marrow
6. Radiation
7. Bladder
8. Ifosfamide
9. True

Tyrosine Kinase Inhibitors

1. True
2. CYP3A4; CYP3A4
3. False
4. False
5. Hepatic
6. Weight Gain, Shortness of Breath, Ankle Swelling
7. True
8. Empty
9. Diarrhea
10. Blood Pressure
11. True
12. RET, MET, VEGFR, KIT, and FLT-3
13. True
14. D
15. Imatinib, Regorafenib, Alectinib, Midostaurin
16. Erlotinib, Sorafenib, Lapatanib, Nilotinib, Pazopanib, Cabozantinib, Dabrafenib, Trametinib, Afatinib, Ceritinib