

TABLE OF CONTENTS

Hematology and Oncology I	1
Hematology And Oncology I Panel	3

Pharmacogenomics and Precision Medicine

By Roseann S. Gammal, Pharm.D., BCPS; and Christy S. Harris, Pharm.D., FHOA, BCOP

Introduction	7
Principles of Pharmacogenomics	8
Pharmacogenomic Resources	10
Chemotherapy Pharmacogenomics: Somatic Genetic Variation	11
Chemotherapy Pharmacogenomics: Germline Genetic Variation	14
Supportive Care Pharmacogenomics	16
Role of the Pharmacist on Molecular Tumor Boards	19
Conclusion	19
References	19
Self-Assessment Questions	21

Oral Chemotherapy

By Lisa K. Lohr, Pharm.D., BCPS, BCOP

Introduction	25
OC Care Best Practices	26
OC Adherence	28
Cardiovascular Adverse Effects	30
Metabolic Adverse Effects	39
Dermatologic Adverse Effects	48
Other Adverse Effects	53
Conclusion	56
References	56
Self-Assessment Questions	59

Hematology and Oncology II	63
Hematology And Oncology II Panel	65

Oncology Biosimilars

By Jeremy J. Whalen, Pharm.D., BCOP

Introduction	69
Biologic Manufacturing and Biosimilar Development	70
Federal Regulations That Govern Approval	71
Current Oncology Products Approved	74
Differences from the European Model	74
Potential Benefits to Adoption in the United States	75
Barriers to Adoption in the United States	76

Conclusion	80
References	81
Self-Assessment Questions	83

Immunotherapy

By Justin R. Arnall, Pharm.D., BCOP

Introduction	89
Interleukin-2	91
Sipuleucel-T	92
Talimogene Laherparepvec	93
Overview of ICI Therapy	95
Precision Immunotherapy	100
Evolution and Overview of Cellular Therapy	101
T-cell Redirection Therapies	101
Special Populations	110
Conclusion	110
References	110
Self-Assessment Questions	113

Hematology and Oncology III	117
Hematology And Oncology III Panel	119

Multiple Myeloma

By Tim J. Peterson, Pharm.D., BCOP

Introduction	123
Clinical Guideline Updates in MM	125
Pharmacotherapy for NDMM	126
Pharmacotherapy for Relapsed and Refractory MM	130
Additional Agents in the Pipeline	133
Prevention of SREs	134
Prevention of VTE	137
Conclusion	138
References	139
Self-Assessment Questions	143

Acute Leukemias

By Joshua Pecoraro, Pharm.D., BCOP

Introduction	147
Acute Myeloid Leukemia	152
Acute Lymphoblastic Leukemia	159
Conclusion	164
References	165
Self-Assessment Questions	169

Hematology and Oncology IV	173
Hematology and Oncology IV Panel	175

Interactive Case: Castration-Resistant Prostate Cancer

By Mary Wun-Len Lee, Pharm.D., FCCP, BCPS; and Roohollah Sharifi, M.D., FACS

Interactive Case: Castration-Resistant Prostate Cancer	179
Hyperlink to activity	180
References	180
Self-Assessment Questions	184

Interactive Case: Hematopoietic Stem Cell Transplantation

By Katie S. Gatwood, Pharm.D., BCOP

Interactive Case: Hematopoietic Stem Cell Transplantation	187
Hyperlink to activity	188
References	188
Self-Assessment Questions	189

Hematology and Oncology V	193
Hematology and Oncology V Panel	195

Interactive Case: Breast Cancer

By Sandra Cuellar, Pharm.D., BCOP

Interactive Case: Breast Cancer	199
Hyperlink to activity	199
References	200
Self-Assessment Questions	202

Statistics in Practice: Regression and Correlation – Part 2

By Curtis E. Haas, Pharm.D., FCCP

Statistics in Practice: Regression and Correlation – Part 2	205
Hyperlink to activity	206
References	206
Self-Assessment Questions	207