

TABLE OF CONTENTS

Book 7

Preface.....	i
Editorial Board.....	ii
Book 7 Panel.....	iii
Disclosure of Potential Conflicts of Interest.....	ix
Continuing Education and Program	
Evaluation Instructions.....	x
Book 7 Post Test.....	x
Role of ACCP.....	xv

Women's Health I

SEX-RELATED DIFFERENCES IN DISEASE AND PHARMACOTHERAPY

Learning Objectives .....	.1
Introduction .....	.1
History .....	.1
Classification .....	.1
Sex-Based Differences in Disease .....	.1
Physiologic Differences .....	.1
Abbreviations in This Chapter .....	.2
Pathophysiologic Differences .....	.2
Environment vs. Genetics .....	.2
Hormonal Influence .....	.2
Osteoporosis .....	.2
Systemic Lupus Erythematosus .....	.3
Cardiovascular Disease .....	.3
Overview .....	.3
Hemodynamic Differences.....	.4
Ischemic Heart Disease .....	.4
Heart Failure .....	.4
Electrophysiologic Differences .....	.5
Sex-Based Differences in Pharmacotherapy .....	.5
Overview .....	.5
Pharmacokinetics .....	.5
Absorption .....	.5
Gastric pH and Emptying .....	.6
Active Transport .....	.6
Presystemic Drug Metabolism .....	.6
Distribution .....	.7
Hepatic Clearance .....	.7
Kidney Excretion .....	.7
Drug Interactions .....	.7
Pharmacodynamics/Clinical Outcomes .....	.8
Overview .....	.8

Cardiovascular Disorders .....	.8
Heart Failure Pharmacotherapy .....	.8
Antiplatelet Drugs .....	.9
QT Interval and TdP .....	.9
Opioid Analgesics .....	.9
Anti-retroviral Pharmacotherapy .....	.9
Conclusion and Clinical Impact .....	.9
Annotated Bibliography.....	.10
Self-Assessment Questions.....	.15

UPDATES IN CONTRACEPTION

Learning Objectives .....	.19
Introduction .....	.19
Epidemiology .....	.19
Physiology .....	.19
Understanding the Menstrual Cycle .....	.19
Abbreviations in This Chapter .....	.20
Treatment Goals and Desired Outcomes .....	.20
Combined Oral Contraception .....	.20
Use in Coexisting Medical Conditions .....	.20
Use in Older Women .....	.20
Use in Postpartum and Breastfeeding Women .....	.20
Risk of Breast Cancer .....	.21
Progestin Generation and VTE .....	.21
Use in Obesity .....	.21
Extended Cycle and Continuous	
Cycle Oral Contraceptives .....	.21
Extended Cycle Oral Contraceptives .....	.22
Continuous Cycle Oral Contraceptives .....	.22
Safety of Reducing Menses .....	.22
Initiation Methods .....	.23
Alternative Hormonal Contraception .....	.23
Transdermal Contraceptive Patch .....	.23
Use in Patients with Obesity .....	.23
Risk of VTE .....	.23
Vaginal Contraceptive Ring .....	.24
Depo-medroxyprogesterone Acetate .....	.24
Subcutaneous Formulation .....	.24
Effect on Skeletal Health .....	.24
Subdermal Progestin Implants .....	.25
Progestin-Releasing IUD .....	.25
Emergency Contraception .....	.25
Intrauterine Device .....	.26
Yuzpe Method .....	.26
Progestin Only .....	.26
Common Issues for Oral EC .....	.26
Effectiveness and Timing of Administration .....	.26
Patient Education .....	.27
Pharmacoeconomics .....	.27

Role of the Pharmacist	27
Conclusion	27
Annotated Bibliography.....	27
Self-Assessment Questions.....	31

INFERTILITY

Learning Objectives	35
Introduction	35
Epidemiology	35
Optimal Timing of Intercourse to Achieve Pregnancy	35
Pathophysiology	35
Etiology	35
Diagnosis	35
Female Evaluation	35
Abbreviations in This Chapter	36
Male Evaluation	36
Quality Patient Care	36
Ovulation Induction and Fertility Procedures	36
Clomiphene Citrate	37
Gonadotropins	38
Follicle-Stimulating Hormones (Follitropins)	38
Follitropin Treatment Protocols	38
Comparative Effectiveness	38
Male Infertility	38
Human Chorionic Gonadotropins	38
Luteinizing Hormone	38
Gonadotropin-Releasing Hormone Analogues	39
Miscellaneous Agents	39
Aromatase Inhibitors	39
Progesterone	40
Monitoring and Risks	40
Follicular Development	40
Ovarian Hyperstimulation Syndrome	41
Ovarian Cancer	41
Assisted Reproductive Technology	41
Intrauterine Insemination	41
In Vitro Fertilization	41
In Vitro Fertilization Protocols	42
Long Protocol	42
Short Protocol	42
Ultra-Short Protocol	42
Comparative Effectiveness.....	42
Gonadotropin-Releasing Hormone Antagonists and In Vitro Fertilization	42
Oocyte Retrieval.....	42
Oocyte Donation	43
Intracytoplasmic Sperm Injection	44
Infertility in Men	44
Infertility in Women	44
Hypothalamic Anovulation	44
Hyperprolactinemia	44
Polycystic Ovary Syndrome	44
Endometriosis	45
Fertility Preservation in Patients with Cancer	45
Patient Education	45
Psychological Support	45
Patients Not Requiring Infertility Drugs or Procedures	45
Fertility Awareness Methods	45
Patients Requiring Infertility Drugs or Procedures	46
Choosing a Fertility Clinic	46
Conclusion	46
Annotated Bibliography	46
Self-Assessment Questions.....	51

Women's Health II

DRUGS IN PREGNANCY

Learning Objectives	55
Introduction	55
Stages of Pregnancy	55
Pregnancy Dating	55
Abbreviations in This Chapter	56
Trimesters	56
Reproductive Toxicity	56
Parturition	56
Tocolytic Agents	56
Agents for Cervical Ripening and Labor Induction	57
Analgesic Agents	57
Developmental Toxicity	57
Causes of Developmental Toxicity	57
Genetic	57
Chromosome Abnormalities	57
Multifactorial Inheritance	57
Environmental Factors	58
Unknown Factors	58
Criteria for Establishing Drug-Induced Birth Defects	58
Critical Period	58
Dose Relationship	60
Drugs Known to Cause Developmental Toxicity	61
Estimating Embryo and Fetal Risk	61
Are There Human Pregnancy Data for the Drug?	61
Do Other Drugs in the Same Pharmacological Class or with the Same Mechanism of Action Cause Developmental Toxicity?	61
Does the Drug Reach the Embryo or Fetus?	61
Does the Drug Cause Developmental Toxicity in Animals?	62
Role of the Pharmacist	62
Conclusion	63
Annotated Bibliography	63
Self-Assessment Questions.....	71

DRUG USE AND LACTATION

Learning Objectives	77
Introduction	77
In Utero Compared with Breastfeeding Exposure	77
Abbreviations in This Chapter	77
The Lactation Continuum	77
Drug Effects on Lactation	77
Galactagogues	77
Drugs That Decrease Milk Supply	77
Drug Passage into Milk	78
Physicochemical Factors	78
Methods of Expressing Passage of Drugs into Milk	78
Ontogeny and Pharmacogenetics	79
Adverse Drug Effects in Nursing Infants	79
Specific Drug Issues	81
Depression	81
Contraception	81
Respiratory Conditions	81
Mastitis	82
Hyperthyroidism	82
Alcohol	82
Caffeine	83

Smoking	.83
Other Drugs of Concern in Neonates	.83
Breastfeeding Literature	.84
Primary Sources	.84
Secondary Sources	.84
Tertiary Sources	.84
The Pharmacist's Role	.84
Conclusion	.85
Annotated Bibliography	.85
Self-Assessment Questions	.89

MANAGEMENT OF CHRONIC CONDITIONS DURING PREGNANCY

Learning Objectives	.93
Introduction	.93
Diabetes Mellitus	.93
Pregnancy Outcomes and Complications	.93
Abbreviations in This Chapter	.94
Quality Patient Care	.94
Non-pharmacological Treatment	.94
Guidelines	.94
Other Pharmacological Options	.95
Hypertension	.96
Pregnancy Outcomes and Complications	.96
Quality Patient Care	.96
Non-pharmacological Treatment	.96
Guidelines	.96
Other Pharmacological Options	.97
Asthma	.97
Pregnancy Outcomes and Complications	.97
Quality Patient Care	.98
Non-pharmacological Treatment	.98
Guidelines	.98
Other Pharmacological Options	.98
Thromboembolic Conditions	.98
Pregnancy Outcomes and Complications	.98
Outcomes Caused by Underlying Disease	.98
Outcomes Caused by Therapy	.99
Quality Patient Care	.100
Non-pharmacological Treatment and	
Guidelines	.100
Clinical Controversy	.100
Role of the Pharmacist	.100
Annotated Bibliography	.102
Self-Assessment Questions	.105

PSYCHIATRIC DISORDERS IN PREGNANCY

Learning Objectives	.109
Introduction	.109
Mood Disorders	.109
Major Depressive Disorder	.109
Epidemiology of Major Depression	
During Pregnancy	.109
Pathophysiology/Etiology of Depression	
During Pregnancy	.109
Abbreviations in This Chapter	.110
Risk Factors for Depression	
During Pregnancy	.110
Sequelae of MDD During Pregnancy	.110
Non-pharmacological Treatment	.110
Pharmacological Treatment	.110
Selective Serotonin Reuptake Inhibitors	.110
Atypical Antidepressants	.112
Postpartum Depression	.112
Epidemiology	.112
Risk Factors and Sequelae	.113

Treatment	.113
Bipolar Disorder	.113
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.113
Treatment	.113
Lithium	.113
Valproic Acid	.114
Carbamazepine	.114
Lamotrigine	.114
Oxcarbazepine	.114
Antipsychotics	.115
Anxiety Disorders	.115
Panic Disorder	.115
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.115
Treatment	.115
Obsessive-Compulsive Disorder	.115
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.115
Treatment	.115
Generalized Anxiety Disorder	.115
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.115
Treatment	.115
Post-traumatic Stress Disorder	.116
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.116
Treatment	.116
Pharmacotherapy for Anxiety Disorders	.116
Psychotic Disorders	.116
Schizophrenia	.116
Epidemiology, Pathophysiology, and	
Clinical Characteristics	.116
Treatment	.117
Typical Antipsychotic Drugs	.117
Atypical Antipsychotic Drugs	.117
Aripiprazole	.117
Clozapine	.117
Olanzapine	.118
Quetiapine	.118
Risperidone and Paliperidone	.118
Ziprasidone	.118
The Role of the Pharmacist	.118
Conclusion	.119
Annotated Bibliography	.119
Self-Assessment Questions	.120

Older Adults

ANTI-AGING THERAPIES AND COSMECEUTICALS: AN EVIDENCE-BASED UPDATE

Learning Objectives	.125
Introduction	.125
Overview of Aging in the United States and	
Implications	.125
Definitions Used to Describe	
Aging in the Literature	.125
Abbreviations in This Chapter	.126
An Update on the Biology of Aging	.126
Wear and Tear Theory	.126
Endocrine Theory	.126
Genetic Theory	.126
Anti-aging Interventions	.127
Calorie Restriction	.127
Antioxidants	.127

Vitamin E	128
Coenzyme Q10	128
Hormones and Nutrients	128
DHEA and Testosterone	128
Human Growth Hormone	128
Vitamin D	129
Gene Regulation, Sirtuins, and Sirtuin-Activating Compounds	129
Role of the Pharmacist	130
Cosmeceuticals	130
Normal Structure of the Skin	130
Pathophysiology of Aging of the Skin	130
Factors That Accelerate Aging of the Skin	130
Skin Care Products	131
Role of the Pharmacist	132
Annotated Bibliography	132
Self-Assessment Questions	137

HEALTH ISSUES IN OLDER WOMEN

Learning Objectives	141
Introduction	141
Menopause	141
Introduction	141
Abbreviations in This Chapter	142
Pathophysiology Review	142
Diagnosis	142
Therapeutic Goals/Outcomes	142
Lifestyle Management	142
HT Update	142
Benefits of HT	142
Vasomotor Symptoms/Vaginal Atrophy	142
Depression	142
Osteoporosis	142
Diabetes Mellitus	143
Risks of HT	143
Cardiovascular Disease	143
Thromboembolism/Stroke	143
Breast Cancer	144
Cognitive Decline or Dementia	144
Treatment Plan	144
Hormone Therapy	144
Types of Products	144
Dosing	144
Role of Low-Dose HT	144
Discontinuation of HT	144
Role of Androgens	145
Nonhormonal Therapy	145
Alternative Therapies	145
Phytoestrogens, Isoflavones, Soy, and Dietary Supplements	146
Natural (Bioidentical) HT	146
Perimenopause and Surgical or Chemical Menopause vs. Postmenopause	146
Urinary Incontinence	146
Introduction	146
Pathophysiology Review	146
Overactive Bladder	146
Stress Incontinence	146
Mixed UI	147
Functional UI	147
Overflow UI	147
Diagnosis	147
Treatment Goals and Outcomes	147
Behavioral Therapy	147
Use of UI Supplies	147
Pharmacotherapy	147

OAB and Urge UI	147
Antimuscarinic Therapy	147
Stress UI	148
Overflow UI	148
Functional or Iatrogenic UI	149
Other Interventions or Surgical Treatment	149
Osteoporosis	149
Introduction	149
Pathophysiology Review	149
Types of Osteoporosis	149
Risk Factors	150
Diagnosis	150
Treatment Goals/Outcomes	150
Lifestyle, Diet, and Nutritional Supplements	150
Exercise and Fall Prevention	150
Update on Calcium and Vitamin D	150
Pharmacotherapy	151
Bisphosphonates	151
Raloxifene	151
Calcitonin	151
Parathyroid Hormone	152
Strontium Ranelate	152
Treatment Plan	152
Combination Therapy	152
Conclusion	152
Annotated Bibliography	153
Self-Assessment Questions	155

HEALTH ISSUES IN OLDER MEN

Learning Objectives	161
Introduction	161
Benign Prostatic Hyperplasia	161
Introduction and Pathophysiology	161
Updates on Pharmacological Management of BPH	161
α -Blockers	161
Abbreviations in This Chapter	162
5 α -Reductase Inhibitors	162
Other Pharmacological Management	163
Research and Future Directions in Management of BPH	164
Prostatitis	164
Presentation and Classification	164
Focus on CP/CPPS	164
Updates in Pathophysiology	164
Updates in Medication Management	164
Updates on Chronic Bacterial Prostatitis	166
Prostate Cancer	166
Introduction and Updates on Screening	166
Chemoprevention	167
Role of 5 α -Reductase Inhibitors in Prostate Cancer	168
Erectile Dysfunction	168
Updates in Pathophysiology	168
New PDE-5 Inhibitors	169
Considerations for PDE-5 Inhibitors	169
Treating ED When PDE-5 Inhibitors Fail	169
Men with Cardiovascular Disease	169
New-Onset Vision Deficits	170
The Pharmacist's Role	170
Conclusion	170
Annotated Bibliography	171
Self-Assessment Questions	173