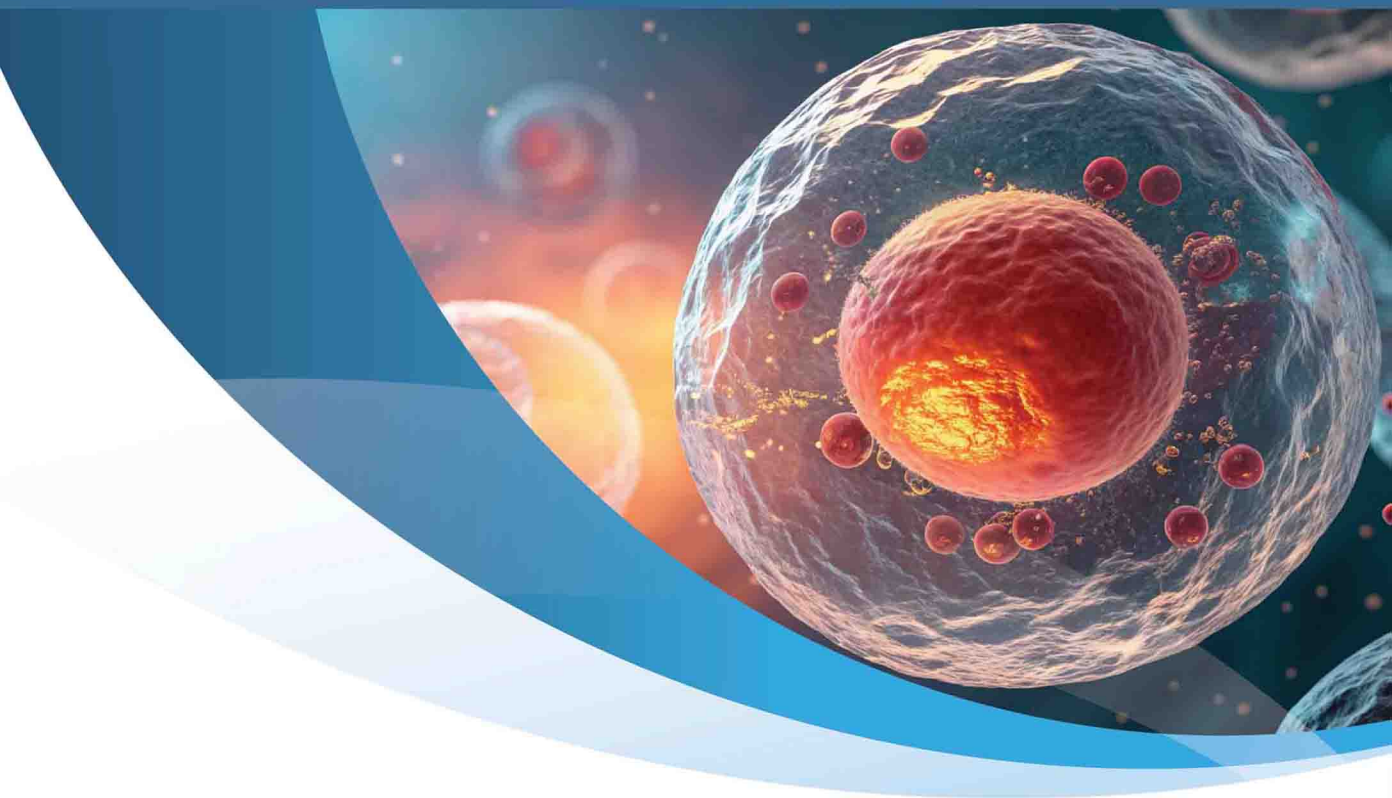
ee.com, for detailed information on obstetrics & gynecology books, visit our website www.ejaypee.com, for detailed information on obstetrics & gynecology books



Mastering the MRCOG Part 1

A Comprehensive Guide

Editors
Neetha George
Aswath Kumar

JAYPEE

CONTENTS

CHAPTER 1: **Pathology** 1
Asha Mary Thomas

CHAPTER 2: **Reproductive Physiology** 39
Jyothi Ramesh Chandran

CHAPTER 3: **Biochemistry** 60
Ajith S, Sangeetha DG

CHAPTER 4: **Anatomy** 89
Jyothi Ramesh Chandran

CHAPTER 5: **Embryology** 219
Georgy Joy Eralil

CHAPTER 6: **Early Pregnancy and Clinical Management** 316
S Mayadevi Kurup, Surya Jayaram

CHAPTER 7: **Microbiology and Immunology** 356
Prameela Menon

CHAPTER 8: **Biostatistics** 392
Megha Jayaprakash, Deepa Balakrishnan

CHAPTER 9: **Endocrinology** 456
Betsy Thomas

CHAPTER 10: **Pharmacology** 488
Resmy CR, N Sunu Chandran

CHAPTER 11: **Biophysics** 501
Shameema Anvarsadath

CHAPTER 12: **Genetics** 524
Georgy Joy Eralil

Index 547

10 CHAPTER

Pharmacology

Resmy CR, N Sunu Chandran

PHARMACOKINETICS

Q1. Which of the following is not a part of phase 1 reactions in drug metabolism?

A. Conjugation
B. Reduction
C. Hydrolysis
D. Oxidation

Q2. Which of the following statements regarding pharmacokinetics is false?

A. Absorption after intramuscular injection occurs by simple diffusion
B. Acidic drugs like salicylates bind to albumin
C. Hypoalbuminemia due to liver disease results in increased unbound fraction of basic drugs
D. Therapeutic monitoring is required for digoxin as it has narrow safety range

Q3. All of the physiological changes in pregnancy increase clearance time of drugs except:

A. Nausea and vomiting in early pregnancy
B. Increased body fat
C. Renal blood flow and glomerular filtration rate (GFR) increased by 50%
D. Delayed gastric emptying

Q4. Warfarin inhibits which of the following vitamin K-dependent clotting factors?

A. 2, 7, 9, 10
B. 3, 4, 5, 6
C. 4, 8, 11, 13
D. 2, 5, 6, 11

TERATOGENESIS

Q5. Which of the drug is associated with gray baby syndrome?

A. Chloramphenicol
B. Ciprofloxacin
C. Nitrofurantoin
D. Benzodiazepines

Q6. The purpose of phase one of clinical trial is:

A. Compare the new treatment to existing one
B. Focus on effectiveness and side effects
C. Assess the safety of drug in healthy individuals
D. To research on teratogenicity of drug

Q7. In-utero exposure to which drug is associated with choanal atresia?

A. Carbimazole
B. Propyl thiouracil
C. Ramipril
D. Amoxicillin

Q8. All are features of congenital warfarin syndrome except:

A. Stippled epiphyses
B. Hypoplastic nose
C. Mental retardation
D. Phocomelia

Q9. Females exposed to which drug in utero are at increased risk of developing clear cell adenocarcinoma of lower genital tract:

A. Naloxone
B. Angiotensin-converting enzyme (ACE) inhibitors

JAYPEE BROTHERS

C. Diethylstilbestrol
D. Phenobarbitone

Q10. Among the following oral hypoglycemic drugs which can be continued safely in pregnancy?
A. Glyburide
B. Glimepiride
C. Teneligliptin
D. Voglibose

Q11. Which of the following statements regarding nonsteroidal anti-inflammatory drugs (NSAIDs) in pregnancy is false?
A. They readily cross placenta and reach higher concentration in fetus
B. NSAIDs can lead to oligohydramnios
C. They can be safely given after first trimester
D. Low dose aspirin is used in prophylaxis of early onset preeclampsia

DRUG METABOLISMS AND INTERACTIONS

Q12. One of the following drugs is not a microsomal enzyme inducer.
A. Progestogen
B. Rifampin
C. Ethanol
D. Estrogen

Q13. Which of the statements regarding placental drug transfer is false.
A. Drugs having molecular weight 600 Da cross easily
B. Lipid soluble drugs are not readily transferred
C. Most important mode of transport is diffusion
D. Ion trapping of basic drugs occur as the fetal plasma is acidic

Q14. Drugs which have a low toxic: Therapeutic ratio are all except
A. Anticonvulsants
B. Aminoglycosides
C. Cytotoxic drugs
D. Anti-emetics

Q15. A 30-year-old lady is on phenytoin for seizure control. Which of the following contraceptive methods can be advised for her?
A. CHC patch
B. Progesterone only pill
C. Etonogestrel implant
D. DMPA

Q16. Which of the following is not an enzyme inhibitor?
A. Erythromycin
B. Ciprofloxacin
C. Cimetidine
D. Griseofulvin

ENDOCRINE PHARMACOLOGY AND CONTRACEPTIVES

Q17. A woman who was on regular oral contraceptive pills since last 3 months missed three pills in week 2 after hormone-free interval. What is the immediate step that has to be taken?
A. Take the most recent pill as soon as possible and continue the remaining pills at usual time, and no emergency contraception is required
B. Use condoms or avoid sex and quick start new COC packet
C. Consider emergency contraception if unprotected sexual intercourse has taken place and continue remaining pills at usual time
D. Consider emergency contraception and quickly start new COC packet

Q18. Which of the following statements regarding mifepristone is false?
A. It is a steroidal anti progestogen
B. It also has an antiglucocorticoid and weak antiandrogen

JAYPEE BROTHERS

C. Decreases myometrial sensitivity to prostaglandins
D. Commonly used for medical abortion

Q19. Higher incidence of thromboembolic events noted with which of the following drug:
A. Desogestrel
B. Norethisterone
C. Levonorgestrel
D. Norgestimate

Q20. The continuous use of CHC (combined hormonal pills) has been associated with reduced incidence of all the following cancers except:
A. Colorectal
B. Ovarian
C. Uterine
D. Cervical

Q21. A 23-year-old woman postdelivery day 1 and breastfeeding her baby wishes to use contraception. Which of the following methods is not recommended during this time?
A. Progesterone only pill
B. CHC
C. Progesterone only implant
D. LNG-IUS

Q22. Which of the following drugs is a selective progesterone receptor modulator?
A. Tamoxifen
B. Ulipristal acetate
C. Clomiphene
D. Methotrexate

Q23. A 33-year-old woman with regular cycles had her last menstrual period 14 days back presented after 4 days of unprotected sex seeking for emergency contraception. Among the following emergency contraceptive methods, what is recommended in her case?
A. Copper IUD
B. Ulipristal acetate 30 mg
C. Levonorgestrel 1.5 mg
D. Double dose LNG-EC

Q24. Which of the following statements regarding lamotrigine is false?
A. Lamotrigine monotherapy has least risk of major congenital malformations in offspring
B. Lamotrigine has not been shown to induce liver enzyme
C. Women on lamotrigine can be safely prescribed Combined hormonal pills
D. It is also used in treatment of bipolar disorder

Q25. Regarding clomiphene citrate all are true except:
A. It is an aromatase inhibitor
B. Usually taken for 5 days from day 2 of menstrual cycle
C. It has higher rate of multiple pregnancies
D. Less common side effect is visual disturbances

Q26. Which of the following is an anti-androgenic drug?
A. Cyproterone acetate
B. Mifepristone
C. Letrozole
D. Ritodrine

ANTIHYPERTENSIVES

Q27. Which of the following drug is not an ACE inhibitor?
A. Trandolapril
B. Ramipril
C. Enalapril
D. Verapamil

Q28. A 38-year-old gravida 3 with chronic hypertension controlled with two different drugs develops atonic pph. Among the following drugs which should be avoided?
A. Misoprostol
B. Carboprost
C. Ergometrine
D. Oxytocin

JAYPEE BROTHERS

Q29. Which of the following statements regarding anti-hypertensive drugs in pregnancy is false?

A. Methyldopa can cause depression and should be avoided in the postpartum period
B. Atenolol is associated with low birth weight and low placental weight
C. $MgSO_4$ is recommended for recurrent seizure in eclamptic woman
D. Woman with chronic hypertension on ACE inhibitors can continue the same drug in pregnancy

Q30. Which of the following drugs is an alpha 2 adrenergic agonist?

A. Labetalol
B. Prazosin
C. Clonidine
D. Diltiazem

Q31. Prophylactic aspirin daily from 12 weeks of pregnancy is recommended in women with which of the following risk factor:

A. Type 1 or 2 diabetes
B. Pregnancy interval of 5 years
C. Previous miscarriage
D. 35 years age

Q32. The drug associated with increased risk of placental abruption is:

A. Cocaine
B. Benzodiazepines
C. Cannabis
D. Ketamine

GENERAL AND LOCAL ANESTHETICS

Q33. Which of the statements is false regarding neuromuscular blocking agents?

A. Succinylcholine is a depolarizing agent
B. Non depolarizing agents act by increasing the frequency of channel opening
C. Neonates are relatively resistant to depolarizing agents
D. Non depolarizing agents have synergistic effects with ether anesthesia

Q34. Condition causing prolongation of non-depolarizing NM blockade include all except

A. Hyperkalemia
B. Hypothermia
C. Hypocalcemia
D. Metabolic alkalosis

Q35. Which of the statements is true of lidocaine?

A. It has intrinsic vasoconstrictor activity
B. Do not cross BBB
C. It is an amide type local anesthetic
D. Vasoconstriction occurs in the injected area

Q36. Features of nitric oxide

A. Odorless gas with low potency
B. Decrease the activity of sympathetic system
C. It is highly soluble in blood
D. It can be effectively used alone as an anesthetic agent

Q37. What is the first treatment for malignant hyperthermia?

A. Succinylcholine
B. Dantrolene
C. Halothane
D. Morphine

DRUGS AFFECTING UTERINE ACTIVITY

Q38. Which of the drug is an oxytocin antagonist?

A. Atosiban
B. Isoxsuprine
C. Nifedipine
D. Ritodrine

Q39. Among the following statements regarding oxytocin which is false?

A. Oxytocin receptor belongs to rhodopsin type of G protein coupled receptor family

JAYPEE BROTHERS

B. Excessive dose causes water intoxication
C. Intramuscular injection acts in 3–5 minutes
D. Atosiban is an oxytocin agonist

ANTICOAGULANTS

Q40. Regarding dalteparin which of the following statements is false?
A. It is used in treatment of DVT
B. It acts by increasing the formation of factor Xa
C. Considered safe to use in pregnancy
D. Therapeutic dose of dalteparin for a 70-kg pregnant woman is 8,000 IU twice daily

Q41. Which of the statements is false regarding heparin?
A. Heparin does not cross the placenta
B. It acts through interaction with glycosaminoglycans
C. Immune thrombocytopenia occurs 2–5 days after therapy
D. Osteoporosis is a known complication with heparin

Q42. Which of the listed drug inhibits warfarin metabolism?
A. Clopidogrel
B. Aspirin
C. Cimetidine
D. Rifampin

ANTI-INFLAMMATORY

Q43. Which of the following statements regarding tranexamic acid is false?
A. It is an antifibrinolytic
B. Greater caution is recommended in people with kidney disease
C. It is category C in pregnancy and contraindicated
D. Adverse events include changes in color vision

Q44. Regarding mefenamic acid, the false statement is:
A. An anti-prostaglandin agent
B. Prolonged use may lead to reduced fertility
C. Reduces MBL by 25%
D. Is ineffective in IUCD-induced menorrhagia

Q45. The known complication of use of NSAID in pregnancy:
A. Polyhydramnios in the last trimester
B. Structural defects if used in first trimester
C. Premature closure of ductus arteriosus
D. Thrombocytopenia

ANTIMICROBIALS AND ANTIVIRALS

Q46. Which of the following drugs is wrongly matched with its mechanism of action?
A. Ciprofloxacin-inhibit DNA gyrase
B. Penicillin-inhibit cell wall synthesis
C. Clindamycin-inhibit protein synthesis
D. Metronidazole-inhibit synthesis of ergosterol

Q47. The drug of choice in treatment of syphilis in pregnancy is:
A. Penicillin G
B. Doxycycline
C. Erythromycin
D. Ceftriaxone

Q48. What is the mechanism of action of clindamycin?
A. Inhibition of bacterial protein synthesis at the level of 50S ribosome
B. Interacts with DNA, causes helical DNA structure and strand breakage
C. Inhibit bacterial enzyme topoisomerases
D. Preventing new cell wall formation

Q49. The recommended drug of choice for malaria prophylaxis in a 28-week pregnant traveler to high-risk area is:
A. Mefloquine
B. Primaquine

JAYPEE BROTHERS

C. Artesunate
D. Clindamycin

Q50. A pregnant lady at 37 weeks is diagnosed with UTI. Culture report shows sensitivity to following drugs. Which drug should be avoided in this case?
A. Trimethoprim
B. Cefixime
C. Nitrofurantoin
D. Amoxicillin

Q51. A 25-year-old sexually active woman presents in outpatient clinic with complaints of redness and itching of genitals with an abnormal vaginal discharge. On examination greenish discharge with strawberry cervix seen. What is the recommended first-line treatment for this condition?
A. Ofloxacin
B. Fluconazole
C. Metronidazole
D. Doxycycline

Q52. Which of the following is a nucleoside reverse transcriptase inhibitor?
A. Zidovudine
B. Raltegravir
C. Efavirenz
D. Ritonavir

Q53. True statement about co-trimoxazole:
A. Cause hypokalemia
B. Safe in all trimesters of pregnancy
C. Can be used with clopidogrel
D. Can be safely used with ACE inhibitor

ANTINEOPLASTIC

Q54. Which of the following statements regarding methotrexate is false?
A. It is an antimetabolite
B. Excreted mainly through liver
C. Major dose limiting toxicity is myelosuppression
D. Resistance occurs due to increase in dihydrofolate reductase levels

Q55. Which of the following cytotoxic drugs binds to microtubular protein-tubulin and damages it?
A. Vincristine
B. Azathioprine
C. Cisplatin
D. Etoposide

Q56. Which of the following statements is false?
A. Platinum compounds react with DNA to form intra- and interstrand cross links
B. Cisplatin is nephrotoxic and ototoxic
C. Carboplatin has a different mechanism of action to cisplatin
D. Myelosuppression is a dose limiting toxic side effect

PSYCHOTROPIC DRUGS

Q57. All are recommended in treatment of premenstrual syndrome except:
A. Escitalopram
B. Combined hormonal pills
C. GnRH analogs
D. Lithium

Q58. Which of the following is a selective serotonin reuptake inhibitor?
A. Fluoxetine
B. Amitriptyline
C. Venlafaxine
D. Lithium

Q59. Which of the following is dopamine antagonist drug?
A. Bromocriptine
B. Metoclopramide
C. Cabergoline
D. Ropinirole

Q60. Which is the true statement regarding lithium use in pregnancy?
A. Use in pregnancy is not associated with fetal abnormality
B. It is never indicated for treatment of bipolar disorder in pregnancy

JAYPEE BROTHERS

C. Ebstein anomaly occurs with the use of lithium
D. No association to preterm delivery

MISCELLANEOUS

Q61. To which class of drugs does metformin belong to:
A. Progesterone agonist
B. Antimetabolite
C. Biguanide
D. Anti-glucocorticoids

Q62. Which of the following drugs is a beta 3 agonist used in treatment of urge incontinence?
A. Mirabegron
B. Oxybutynin
C. Trospium
D. Desmopressin

Q63. Which of the following is a live attenuated vaccine?
A. Rabies
B. Tetanus
C. Varicella
D. Influenza

Q64. Regarding loperamide, all the statements are true except:
A. Binds to opiate receptor in large intestine
B. Antidiarrheal agent
C. It acts on delta opioid receptor
D. It does not cross blood-brain barrier

Q65. Which of the following is not an indication for anti-D immunoglobulin in woman with Rh negative blood group?
A. Ectopic pregnancy
B. Molar pregnancy
C. Complete abortion
D. Repeated uterine bleeding with pain

Q66. The first-line antiemetic recommended in hyperemesis treatment is:
A. Ondansetron
B. Corticosteroids
C. Metoclopramide
D. Cyclizine

Q67. Which of the statements is false regarding diuretics?
A. Furosemide is a loop diuretic
B. Thiazide diuretics act on the ascending loop of Henle
C. Potassium sparing diuretics can be co-administered with loop/thiazide diuretics in hypertension
D. Acetazolamide is a carbonic anhydrase inhibitor and may cause familial periodic paralysis

Q68. Which of the following statements about tocolytics are false:
A. Beta mimetics act through adenylate cyclase to decrease cAMP
B. Tocolytics have not shown to reduce perinatal morbidity and mortality
C. Indomethacin inhibits cyclooxygenase and reduces synthesis of prostaglandins
D. Magnesium sulphate acts by competition with Ca at motor end plate or at the cell membrane

ANSWER KEYS

Q1. Ans: A
Hepatic elimination occurs in two phases: Phase I can involve reduction, oxidation or hydrolysis which changes the drug to an active, inactive or toxic state and in Phase II the drugs become more soluble by conjugation, e.g., with glucuronate, and they can then be excreted in urine

Q2. Ans: C
Acidic drugs bind to albumin, (e.g., salicylates, warfarin, NSAIDs) whereas basic drugs bind to alpha 1-acid glycoprotein (e.g., local anesthetics, beta-blockers, opioid analgesics). Hypoalbuminemia leads to reduced binding and an increase in unbound fraction of acidic drugs.

JAYPEE BROTHERS

An acute phase reaction leads to increase in alpha 1-acid glycoprotein levels and thereby reduced availability of basic drugs.

Q3. Ans: D

Drug metabolism in pregnancy is affected by various physiological changes. The delayed gastric emptying resulting in slow peak levels of readily absorbed drugs and increased bioavailability of slowly absorbed drugs.

Q4. Ans: A

The vitamin K-dependent clotting factors are II, VII, IX, X, proteins C and S.

The mechanism of action of warfarin is by interfering with cyclic conversion of vitamin k to its active metabolite, which is required in carboxylation of glutamic acid residues of vitamin K-dependent coagulation factors.

Q5. Ans: A

Gray baby syndrome is a life-threatening reaction to chloramphenicol characterized by abdominal distension, hemodynamic collapse and ashen-gray skin discoloration in neonates. Benzodiazepine intake in late pregnancy is associated with floppy infant syndrome. Nitrofurantoin is avoided after 36 weeks due to risk of neonatal hemolysis.

Q6. Ans: C

Clinical trials are conducted in four phases, I–IV.

Phase I: Carried out in healthy 10–100 participants, and main objective is to determine safety of the drug and the maximum tolerated dose.

Phase II: Conducted in about 50–500 patients and main objective is to assess the effectiveness of the drug and to determine effective dose range. Further evaluation of safety and pharmacokinetics is also done.

Phase III: Aim is to confirm the efficacy of the drug in large number of patients.

Phase IV: It is postmarketing surveillance.

Q7. Ans: A

In utero exposure to carbimazole has been associated with aplasia cutis congenita, as well as choanal atresia and esophageal atresia.

Q8. Ans: D

Warfarin embryopathy is characterized by stippled epiphyses and nasal hypoplasia and CNS anomalies. Phocomelia is associated with thalidomide.

Q9. Ans: C

Women exposed to diethylstilbestrol (DES) in utero were at elevated risk of clear-cell adenocarcinoma of the vagina and cervix. ACE inhibitors can cause fetal-growth restriction and calvarium maldevelopment, and oligohydramnios may lead to pulmonary hypoplasia and limb contractures.

Q10. Ans: A

Insulin is only FDA-approved medication for use in pregnancy and has greatest evidence for safety. Metformin and glyburide are most commonly used OHAs in pregnancy.

Q11. Ans: C

Nonsteroidal anti-inflammatory drugs (NSAIDs) should be used only between 12 and 28 weeks of gestation. If given in last trimester NSAIDs can cause premature closure of ductus arteriosus and neonatal hypertension.

Q12. Ans: D

Drugs which cause microsomal enzyme inhibition include estrogen, ciprofloxacin, fluconazole, omeprazole, and quinidine.

Anticonvulsants, progestogens, rifampin, theophylline, ethanol, griseofulvin are enzyme inducers.

Q13. Ans: B

Lipid soluble drugs are readily transferred.

Q14. Ans: D

Anticonvulsants, aminoglycosides, cytotoxic drugs, anticoagulants, antihypertensives, oral contraceptives, cardiac glycosides have a low toxic: Therapeutic ratio

JAYPEE BROTHERS

Q15. Ans: D
Copper intrauterine devices (IUDs), the levonorgestrel-releasing intrauterine system (LNG-IUS) and medroxyprogesterone acetate injections are reliable methods of contraception that are not affected by enzyme-inducing AEDs.

Q16. Ans: D
The common CYP450 inducers are carbamazepine, rifampin, alcohol (chronic), phenytoin, griseofulvin, phenobarbitone, and sulphonylureas.

The enzyme inhibiting agents are cimetidine, erythromycin, ciprofloxacin, sodium valproate, isoniazid, ketoconazole, alcohol (acute), and chloramphenicol.

Q17. Ans: A
The woman if she has missed one pill in week 1 after hormone-free interval (HFI), no emergency contraception (EC) is required, she has to take the missed pill as soon as possible and continue the remaining pills at the usual time.

If she has missed 2–7 pills in week 1 after HFI, emergency contraception is required if unprotected sex has taken place, the most recent missed pill should be taken as soon as possible, the remaining pills to be continued at the usual time and condoms should be used or sex avoided until pills have been taken for 7 consecutive days.

If the woman has 2–7 pills missed in week 2 or week 3 after HFI, EC is not required (if consistent, correct use in the previous 7 days), the most recent missed pill to be taken as soon as possible, the remaining pills to be continued at the usual time and condoms should be used or sex avoided until pills have been taken for 7 consecutive days.

(*Source:* Faculty of Sexual and Reproductive Healthcare (FSRH) CEU Guidance: Recommended Actions after Incorrect Use of Combined Hormonal Contraception. 2020)

Q18. Ans: C
Mifepristone acts by being antagonist of progesterone and glucocorticoid receptors. It is used in the medical termination of pregnancy. It increases myometrial sensitivity to prostaglandins such as misoprostol.

Q19. Ans: A
Women using CHC containing drospirenone, gestodene, or desogestrel have increased risk of developing VTE compared to other types. The estimated risk is 9–12/10,000 compared to 5–7/10,000 in women using CHC containing levonorgestrel, norethisterone or norgestimate.

Q20. Ans: D
Women should be advised that current use of CHC for >5 years is associated with a small increased risk of cervical cancer whereas CHC use is associated with decreased risk of endometrial, ovarian, and colorectal cancer.

Q21. Ans: B
Women who are breastfeeding should wait until 6 weeks after childbirth before initiating a CHC method. The available evidence indicates that progesterone-only methods of contraception have no adverse effects on lactation, infant growth, or development.

Q22. Ans: B
Tamoxifen and clomiphene are selective estrogen receptor modulators (SERMs). Methotrexate is an antimetabolite which competes for binding sites on dihydrofolate reductase and inhibits folic acid binding.

Q23. Ans: A
Ulipristal acetate EC (UPA-EC) has been demonstrated to be effective for emergency contraception (EC) up to 120 hours after unprotected sexual intercourse and levonorgestrel EC is licensed for EC up to 72 hours after UPSI. A Cu-IUD can be inserted up to 5 days after the first UPSI in a cycle.

Oral emergency contraception is ineffective after ovulation.

(Source: Faculty of Sexual and Reproductive Healthcare (FSRH) Guideline Emergency Contraception. 2017*)*

JAYPEE BROTHERS

Q24. Ans: C

Oral hormonal contraceptives can alter the efficacy of some AEDs by increasing the metabolism of glucuronidated drugs through induction of uridine diphosphate-glucuronosyltransferase. Although lamotrigine is not an enzyme-inducer, oral contraceptive use has been associated with a 25–70% decrease in lamotrigine trough levels, with a drop of >20% in the first 3 days after taking the pill and this can lead to worsening of seizure.

Q25. Ans: A

Clomiphene blocks estrogen receptors in the hypothalamus and the pituitary and thus acts by inhibiting the negative feedback that usually occurs at the hypothalamus and stimulate the release of gonadotropins, follicle-stimulating hormone (FSH), and luteinizing hormone (LH), which leads to the development and maturation of ovarian follicle. It is commonly used to induce ovulation in the fertility of women with anovulatory cycles, e.g., in women with polycystic ovary syndrome. Side-effects include visual disturbance, hot flushes, ovarian hyperstimulation, multiple pregnancy, hair loss, breast tenderness, and headache.

Q26. Ans: A

Cyproterone acetate is an antiandrogen, which also causes a negative feedback to hypothalamic receptors and leads to reduced production of both gonadotrophins and testosterone. It is used in the treatment of severe male hypersexuality, for hirsutism and acne in women and to treat hot flushes, where other methods have failed and as a palliative in prostatic cancer. Hepatotoxicity, gynecomastia, low cortisol, low aldosterone, and osteoporosis are side effects of the drug.

Q27. Ans: D

Verapamil is a calcium antagonist.

Q28. Ans: C

Ergometrine is an ergot alkaloid which can stimulate uterine contractions and used in medical management of PPH. It is given 0.5 mg by slow intravenous or intramuscular injection. In women who are already hypertensive, a transient but considerable increase in blood pressure may follow intravenous ergometrine.

Q29. Ans: D

Angiotensin-converting enzyme (ACE) inhibitors inhibit the conversion of angiotensin I to angiotensin II resulting in reduction of arterial pressure and cardiac load. In pregnancy, particularly in the first trimester, it is associated with problems such as fetal skull defects, cardiovascular malformation, fetal renal problems, and oligohydramnios.

Methyl dopa is a prodrug that is metabolized into norepinephrine and acts centrally to decrease adrenergic neuronal outflow.

Side effects include depression, sedation, decreased libido, and hyperprolactinemia.

Atenolol is beta1-selective antagonist. Some studies have reported IUGR with its use.

Q30. Ans: C

Labetalol is a competitive blocker at alpha 1, beta 2- and beta 1-adrenergic receptors. Prazosin is selective alpha-adrenergic blocker. Diltiazem is a calcium channel blocker.

Q31. Ans: A

Pregnant women at high risk of preeclampsia are advised to take 75–150 mg of aspirin daily from 12 weeks until the birth of the baby. Women at high risk are those with any of the following: Hypertensive disease during a previous pregnancy, chronic kidney disease, autoimmune disease such as systemic lupus erythematosus or antiphospholipid syndrome, type 1 or type 2 diabetes and chronic hypertension.

Q32. Ans: A

Cocaine can cause HTN, a decrease in uterine blood-flow, fetal hypoxia, placental abruption, and neonatal addiction.

Q33. Ans: B

Nondepolarizing blocking agents (competitive) are long acting—tubocurarine, pancuronium, Intermediate acting—vecuronium, atracurium, short acting—mivacurium.

JAYPEE BROTHERS

They act by *decreasing* the frequency of channel opening resulting in action potential. Succinylcholine is a depolarizing agent which act by depolarizing the membrane by opening sodium channels.

Q34. Ans: A

Clinical conditions which prolong the non-depolarizing NM blockade include hypokalemia, hypocalcemia, hypermagnesemia, hypothermia, metabolic alkalosis, and Respiratory acidosis.

Q35. Ans: D

Lidocaine is an amide type local anesthetic, classified as a Vaughan Willaim class 1 anti-arrhythmic drug. It has no intrinsic vasoconstrictor activity. It crosses the BBB. It causes vasodilation at the site of injection.

Q36. Ans: A

Nitric oxide (NO) is an odorless gas with low potency. It increases the activity of sympathetic system, is highly insoluble in blood and tissues, hence rapid induction and emergence. It is not an ideal sole anesthetic agent.

Q37. Ans: B

Malignant hyperthermia is a life-threatening condition triggered by exposure to anesthetic agents. Clinical signs and symptoms of patients include muscular rigidity, followed by a hypermetabolic state with increased oxygen consumption, increased carbon dioxide production, tachycardia, and hyperthermia. IV dantrolene is used in treatment.

Q38. Ans: A

Atosiban is a selective oxytocin receptor antagonist used as a tocolytic to suppress preterm labor. The other drugs (isoxsuprine, nifedipine, and ritodrine) are tocolytics but are not oxytocin antagonists.

Q39. Ans: D

Oxytocin is a nonapeptide hormone which is made in the hypothalamus and released from the posterior pituitary gland. The receptor belongs to G protein coupled receptor family. Oxytocin has 5% of the antidiuretic effect of vasopressin (ADH). Hyponatremia and water intoxication can occur at high doses. Atosiban is a tocolytic agent and is an oxytocin antagonist. It is used in threatened preterm labor.

Q40. Ans: B

Dalteparin mechanism of action is to increase the activity of antithrombin III (AT-III), a plasma protein that inhibits factor IIa (thrombin), factor Xa, and several other clotting factors.

Q41. Ans: C

Heparin induced thrombocytopenia (HIT) and osteoporosis are the complications of heparin. Two types of thrombocytopenia are—non-immune (milder, occurs 3–5 days after initiation) and immune thrombocytopenia (due to IgG antibodies, occurs 3–4 weeks after therapy).

Q42. Ans: C

Omeprazole, metronidazole, cimetidine, and amiodarone are enzyme inhibitors which can exacerbate the anticoagulant effect of warfarin. Rifampin induces P450 and so reduces the anticoagulant effects of warfarin.

Q43. Ans: C

Tranexamic acid binds to the lysine binding site on plasminogen and prevents its combination with fibrin leading to fibrinolysis. Main side effects are nausea and diarrhea. Thrombo-embolic events, disturbed color vision and allergic reactions are infrequent. It is category B drug and can be used in pregnancy.

Q44. Ans: D

Mefenamic acid is an NSAID that acts by anti-prostaglandin effect. It is effective in reducing MBL by 25% and effective for dysmenorrhea. It is effective in IUCD induced menorrhagia. Long-term use may be associated with reduced fertility by affecting ovulation.

Q45. Ans: C

Aspirin and NSAIDs do not cause structural defects in fetus. They cross the placenta and have higher concentration in the fetus. May increase the risk of neonatal hemorrhage by inhibiting

JAYPEE BROTHERS

platelet function. Oligohydramnios may occur due to renal effect. In third trimester it may cause premature closure of ductus arteriosus and neonatal hypertension. Hence it should be discontinued by 36 weeks.

Q46. Ans: D

Metronidazole is selectively toxic to anaerobic and microaerophilic microorganisms. After entering the cell by diffusion, its nitro group is reduced by certain redox proteins operative only in anaerobic microbes to a highly reactive nitro radical which damages microbial DNA and cause death of organism. Ketoconazole is an imidazole antifungal which acts by preventing the synthesis of ergosterol, thereby increasing membrane fluidity and preventing growth of the fungus.

Q47. Ans: A

Penicillin G is the only known effective antimicrobial for treating fetal infection and preventing congenital syphilis.

Q48. Ans: A

Clindamycin binds to bacterial ribosomes and suppress protein synthesis. Quinolones target bacterial DNA gyrase and topoisomerase IV and inhibit DNA replication. Penicillin kills bacteria by inhibiting the completion of the synthesis of peptidoglycans, the structural component of bacterial cell wall.

Q49. Ans: A

Mefloquine (5 mg/kg once a week) is the recommended drug of choice for prophylaxis in the second and third trimesters for chloroquine-resistant areas. With very few areas in the world free from chloroquine resistance, mefloquine is essentially the only drug considered safe for prophylaxis in pregnant travelers.

Q50. Ans: C

Nitrofurantoin in late pregnancy is associated with hemolytic anemia in newborn.

Q51. Ans: C

The recommended first-line treatment for trichomoniasis is metronidazole.

Q52. Ans: A

Efavirenz is a non-nucleoside reverse transcriptase inhibitors (NNRTIs), raltegravir is an integrase inhibitor and ritonavir a protease inhibitor.

Q53. Ans: C

Co-trimoxazole is a combination of sulfonamide and trimethoprim. Bacteriostatic effect through inhibition of folic acid synthesis. It is teratogenic in early pregnancy due to effect on folic acid synthesis. Hyperkalemia is a known side effect, which may be increased with ACE inhibitors.

Q54. Ans: B

Methotrexate is a folate antagonist and kills cells in S phase. Methotrexate is well absorbed orally, little metabolized and largely excreted unchanged in urine. Mucositis and diarrhea are common side effects. Desquamation and bleeding may occur in GI tract. The major dose limiting toxicity is myelosuppression.

Q55. Ans: A

Vincristine and vinblastine bind to tubulin and cause arrest in metaphase of cells.

Q56. Ans: C

Carboplatin has a similar mechanism of action and clinical spectrum, and is relatively well tolerated.

Q57. Ans: D

Combined hormonal pills or low dose SSRIs are used as first line in treatment of PMS. GnRH analogues are used as third line treatment.

Q58. Ans: A

Serotonin and noradrenaline reuptake inhibitor (SSRI) inhibits the reuptake of serotonin into presynaptic cells and hence increases extracellular levels of serotonin.

Amitriptyline is a tricyclic anti-depressant. The most prominent action of TCAs is their ability

JAYPEE BROTHERS

to inhibit norepinephrine transporter (NET) and serotonin transporter (SERT) located at neuronal/platelet membrane at low and therapeutically attained concentrations. Venlafaxine is a SNRI.

Lithium is used only for manic depressive psychosis and can be highly toxic, causing polyuria and, in high doses, encephalopathy. Lithium can cause fetal anomalies mainly cardiovascular. Ebstein anomaly (tricuspid valve distortion and displacement) is seen in lithium exposed infants.

Q59. Ans: B

Dopamine agonists: Bromocriptine, pramipexole, and ropinirole

Dopamine antagonists: Chlorpromazine, haloperidol, and metoclopramide

Q60. Ans: C

Ebstein anomaly is tricuspid valve distortion and displacement occurs in lithium exposed babies. Maternal lithium therapy is reported to be associated with preterm delivery.

Q61. Ans: C

Metformin is an oral antidiabetic drug that belongs to the biguanide class and is commonly used as first-line therapy for type 2 diabetes mellitus.

Q62. Ans: A

Mirabegron works by activating the β_3 adrenergic receptor in the bladder and relaxes it. This drug is prescribed when antimuscarinics are not suitable for patient or there is no relief of symptoms or side effects are not tolerable.

The most common anti-muscarinics used to treat urge incontinence include oxybutynin, tolterodine, darifenacin. The possible side effects include dry mouth, constipation, blurred vision and fatigue. In rare cases it can cause angle closure glaucoma.

Q63. Ans: C

Live viral vaccines include mumps, measles, rubella, varicella, and OPV.

Rabies and influenza are viral killed vaccines. Tetanus is a toxoid.

Q64. Ans: C

Loperamide is an opiate analogue with major peripheral μ opioid and additional weak anticholinergic property. As a constipating agent it is much more potent than codeine. Because of poor water solubility—little is absorbed from the intestines. Entry into brain is negligible.

Q65. Ans: C

In pregnancies <12 weeks gestation, anti-D immunoglobulin prophylaxis is only indicated following ectopic pregnancy, molar pregnancy, therapeutic termination of pregnancy and in cases of uterine bleeding where this is repeated, heavy or associated with abdominal pain. The minimum dose should be 250 IU. A test for fetomaternal hemorrhage (FMH) is not required.

Q66. Ans: D

Recommended first-line drugs in hyperemesis: Cyclizine, prochlorperazine, promethazine, and chlorpromazine.

Second-line drugs: Metoclopramide, domperidone, and ondansetron

Third line drugs: Corticosteroids

Q67. Ans: B

Thiazide diuretics act on the distal convoluted tubule and inhibits Na transport.

Q68. Ans: A

Beta mimetics act through adenylate cyclase to increase cAMP.

Side effects of beta mimetics include pulmonary edema, cardiac dysrhythmia, myocardial ischemia, hypotension, and hypokalemia.

JAYPEE BROTHERS

for detailed information on obstetrics & gynecology books, visit our website www.ejaypee.com, for detailed information on obstetrics & gynecology books, visit our

Mastering the MRCOG Part 1
A Comprehensive Guide

Salient Features

- Includes MRCOG part 1 oriented Q&A in the most precise and concise manner
- Includes questions and discussions from recent updates and guidelines from RCOG
- Faculty are MRCOG examiners and mentors
- Additional points for extra reading on the relevant important topics for part 1 added
- A handbook for last moment preparation
- Comprehensive coverage of high-yield information



Neetha George MS DGO FICOG FMAS holds advanced diplomas in laparoscopy, hysteroscopy, and urogynecology from Kiel, Germany along with a Diplomate qualification in Cosmetic and Aesthetic Gynecology. She serves as an Associate Professor, Jubilee Mission Medical College and Research Institute, Thrissur, Kerala, India, and is a Visiting Consultant at MI Mission Hospital, Thrissur. She is the Vice President of the Thrissur Obstetrics and Gynecology Society and the MRCOG Course Coordinator for TOGS, in addition to being a Member of the FDMSE Committee of FOGSI. Dr George also coordinates Dr VP Paily's Masterclass in Obstetrics. Her academic contributions include chapters in undergraduate textbooks and multiple research papers in national and international journals. A sought-after Faculty Member, she has been invited to speak at state, national, and international conferences and has received several awards at both state and national levels. She has also served as the past Chairperson of the EmOCaLS and PPMD Committees of KFOG.



Aswath Kumar MBBS MD FICOG is a distinguished Gynecologist with advanced training that includes a Fellowship in Gynecologic Oncology from GCRI and a Diploma in Advanced Laparoscopy from Strasbourg, France. A national leader in postgraduate medical education, he serves as the National Coordinator for major PG training initiatives such as FOGSI Gurukul, FOGSI-ICOG Medha, and SAFOG Paathshala. With over 20 years of experience as a PG Teacher and Examiner, he has authored several books for both postgraduate and undergraduate students. He has held prominent positions, including FOGSI Vice President in 2019 and KFOG President in 2023. He has delivered 20 orations and over 250 faculty presentations at national and international conferences and is widely recognized as a leading Faculty Member for PG training programs across India. He is also the Chief Editor for the DigiNerve postgraduate training platform. Currently, he serves as Professor and Unit Chief, Department of Gynecology, Jubilee Mission Medical College and Research Institute, Thrissur, Kerala, India.

Shelving Recommendation
OBSTETRICS & GYNECOLOGY

ISBN 978-93-7545-741-1

9 789375 457411

Buy from ejaypee

JAYPEE BROTHERS