

REFERENCE GUIDE  
FOR THE PHARMACY  
LICENSING EXAM-  
Questions and Answers

THIRD EDITION 2011-2012

*MANAN H. SHROFF*

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# REFERENCE GUIDE FOR THE PHARMACY LICENSING EXAM- Questions and Answers (Third Edition)

Dedicated To  
Krishna

Third Edition-2011-2012

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## **PREFACE:**

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The Reference Guide for the Pharmacy Licensing Exam-Questions and Answers-Third Edition is specifically written for the preparation of NAPLEX® and Canadian Qualifying Exams. It contains over 1200 questions with answers and complete explanations. The exam puts more stress on trade names of drugs and therefore most questions have been formatted by using trade names instead of generic names.

Another impressive feature of this review guide is its case-study format. This will give you the feel of the actual NAPLEX® exam. I have also included TPN, Herbal Drugs and OTC case-studies since these are equally important to achieve a good score in the exam. In addition to this, students must have knowledge about interpreting laboratory tests results; for this I have devoted 30 to 40 questions on this topic; interpreting laboratory results.

I would also recommend you to read the Reference Guide For the Pharmacy Licensing Exam-Theory (covers 65 chapters) and the Reference Guide For Pharmaceutical Calculations (over 500 calculations).

I hope my efforts will help you pass your key exam. I wish you the very best of luck, and any questions or comments are always welcome.

Good luck,

Manan H. Shroff

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**PROFILE:1**

**Name:** Mr. Nathan Morris      **Address:** 1324 Blueberry Blvd.

**Height:** 5'10"      **Age:** 35      **Weight:** 110 lbs.      **Sex:** Male      **Allergy:** Sulfa

Primary diagnosis:    (1) CHF  
                                  (2) Hypertension

Secondary diagnosis:

Lab results:	Date	Date	Date
(1) K+: 2.5meq/l	01/18/10		

NO	Drug	RxNO	Prescriber	Qty	Date	Refill
1	HCTZ 25mg, 1/po/q.d.	13201	Huss	30	01/10/10	5
2	Norvasc 2.5mg, 1/po/q.d.	13202	Huss	30	01/10/10	5
3	Dacodyl 5mg, 1/po/hs	13203	Huss	30	01/10/10	5
4	Lasix 20mg, 1/po/q.d.	13204	Huss	30	01/10/10	5
5	Corgard 80mg, 1/po/q.i.d.	13205	Huss	30	01/11/10	0
6	Valium 5mg, 1/po/hs	13206	Huss	30	01/11/10	5
7	Lanoxin 0.25mg, 1/po/q.d.	13207	Huss	30	01/11/10	3
8	Toradol 10mg, 1/po/q.d.	13208	Huss	3	01/21/10	0
9	Catapres TTS 2, once weekly	13209	Huss	30	01/21/10	5
10	Aldactone 25mg, 1/po/q.d.	13210	Huss	30	01/28/10	5

Pharmacist Notes:

- \* Patient is complaining about muscle cramps, weakness and tiredness.
- \* Difficulty in stool excretion.
- \* Allergy to sulfa products.

1. From the patient's profile, which of the following medications should be discontinued due to his allergy problem?
  - a. Hydrochlorothiazide
  - b. Lanoxin
  - c. Dulcolax
  - d. Azatadine + PSE
  - e. Diazepam
2. An active ingredient of Geodon is:
  - a. Clozapine
  - b. Quetiapine
  - c. Molindone
  - d. Tolterodine
  - e. Ziprasidone
3. Hydrochlorothiazide causes all of the following EXCEPT:
  - a. Hypokalemia
  - b. Hypercalcemia
  - c. Hypouricemia
  - d. Hyperglycemia
  - e. Hyponatremia
4. Hydrochlorothiazide should be avoided with
  - I. Lanoxin
  - II. Lithium
  - III. Questran
  - a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All
5. Dryness of mouth, increased thirst, irregular heartbeat, muscle cramps or pain, nausea and weakness are signs of:
  - a. Digitalis toxicity
  - b. Hydrochlorothiazide toxicity
  - c. Bisacodyl toxicity
  - d. Diazepam toxicity
  - e. Atropine toxicity
6. Which of the following is an orally disintegrating tablet formulation of prednisolone, used to treat exacerbations of asthma and other inflammatory diseases and conditions in children?
  - a. Celestone Soluspan
  - b. PediaPred
  - c. Orapred
  - d. Vasocidin
  - e. Juvéderm
7. A normal therapeutic serum concentration of  $K^+$  is:
  - a. 1 mEq/L
  - b. 1 to 2 mEq/L
  - c. 3.5 to 5 mEq/L
  - d. 10 mEq/L
  - e. 35 mEq/L
8. All of the following diuretics should be avoided in patients suffering from hypokalemia EXCEPT:
  - a. Diulo
  - b. Zaroxolyn
  - c. Hygroton
  - d. Diuril
  - e. Aldactone
9. All of the following are true about Dulcolax EXCEPT:
  - a. It is a stimulant laxative.
  - b. Its onset of action is about 6 to 8 hours when taken orally.
  - c. In a rectal form, an onset of action begins within 15 minutes to 1 hour.

- d. It can be given with antacid to prevent G.I. irritation.
- e. Weakness, incoordination and orthostatic hypotension have been reported because of loss of electrolytes in elderly patients.

10. An active ingredient of Abelcet is:

- a. Rifampicin
- b. Ketoconazole
- c. Amphotericin B
- d. Lisinopril
- e. Isradipine

11. Gardasil is a vaccine indicated for the prevention of which of the following diseases caused by Human Papillomavirus (HPV)?

- a. Vaginal cancer
- b. Hepatitis B
- c. Yellow fever
- d. Tetanus
- e. Tuberculosis

12. Which of the following drug(s) should be avoided with Digoxin?

- I. Erythromycin
- II. Quinidine
- III. Colestipol

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

13. From the patient's profile on 1/11/10, which of the following drug(s) is/are not given according to the recommended therapeutic dose?

- I. Valium
- II. Lanoxin
- III. Corgard

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

14. A physician writes the following prescription:

Zelapar 1.25 mg tablets qty. 30  
1 tab p.o. daily for hypertension.

Which of the following would be the MOST APPROPRIATE action of the pharmacist?

- a. Fill as written.
- b. Call the physician regarding dosage strength.
- c. Call the physician regarding dosage frequency.
- d. Call the physician regarding route of administration.
- e. Call the physician regarding drug indication.

15. Mr. Smith is working at Good Care. His main job is to drive the vehicle and to supply the medicines to various nursing homes. Which of the following antihistamines would you recommended for his runny nose and itchy eyes?

- a. Claritin
- b. Chlor Trimeton
- c. Benadryl
- d. Dimetane
- e. Unisom

16. Which of the following drugs is required to be stored in a refrigerator?

- a. Ery Tab
- b. Prezista
- c. Lucentis

- d. Accolate
- e. Z-Pak

17. The active ingredient(s) of Toradol is/are:

- I. Ketorolac Tromethamine
- II. Flurbiprofen
- III. Oxaprozin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

18. Toradol can be given:

- I. Orally
- II. Intramuscularly
- III. Intravenously

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

19. Because of its serious and dangerous side effects, Toradol should not be given for more than:

- a. 3 days
- b. 5 days
- c. 7 days
- d. 11 days
- e. 14 days

20. Which of the following is NOT TRUE about Toradol?

- a. Toradol is a short term analgesic agent indicated for a severe pain that cannot be controlled by regular NSAIDs.

- b. It causes peptic ulcers and perforation of the stomach, and should be avoided in patients with gastric ulcers.
- c. Toradol is contraindicated in patients with renal impairment.
- d. Toradol inhibits the aggregation of platelets and increases the risk of bleeding.
- e. Toradol is a preferable analgesic agent for epidural and/or intrathecal administration.

21. Which of the following should be avoided with Toradol?

- I. Plicamycin
- II. Valproic acid
- III. Moxalactam

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

22. All of the following drugs should be avoided with Toradol EXCEPT:

- a. Antivert
- b. Cefotetan
- c. Auranofin
- d. Methotrexate
- e. Probenecid

23. A patient has a past history of G.I. ulcers. He needs potassium supplements for the treatment of his hypokalemia. As a pharmacist, which of the following potassium supplements would you recommend for the patient?

- a. K-Dur
- b. K-Tab
- c. Micro K Extentabs
- d. Kaochlor
- e. Klotrix

**24.** The active ingredient(s) of Symbicort is/are:

- I. Budesonide
- II. Formoterol
- III. Ipratropium

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**25.** In Catapres TTS-2, 2 indicates:

- a. 2 mg clonidine/day for 15 days
- b. 0.2 mg clonidine/day for 3 days
- c. 0.3 mg clonidine/day for 7 days
- d. 0.2 mg clonidine/day for 1 week
- e. 0.2 mg clonidine/day for 2 week

**26.** Clonidine is a(n):

- a. Alpha-1 antagonist.
- b. Alpha-2 agonist.
- c. Beta-1 antagonist.
- d. Beta-2 agonist.
- e. 5-HT<sub>3</sub> antagonist.

**27.** Abilify is indicated for the treatment of:

- a. Hypertension
- b. Depression
- c. Rheumatoid arthritis
- d. Schizophrenia
- e. Glaucoma

**28.** Lasix is available in:

- I. Tablet
- II. Oral solution
- III. Injection

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**29.** What is the name of the active ingredient in Xolegel?

- a. Fluconazole
- b. Metronidazole
- c. Ketoconazole
- d. Itraconazole
- e. Clotrimazole

**30.** Which of the following is the major side effect of Geodon?

- a. Hypertension
- b. Seizure
- c. Edema
- d. Arrhythmia
- e. Jaundice

**31.** Which of the following is/are true about Toradol?

- I. Orally, it is less bioavailable.
- II. Parenteral administration by I.M. route provides more bioavailability.
- III. Oral route provides more bioavailability compared to parenteral route.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**32.** The dosage of Abilify should be reduced to half when prescribed with:

- I. Prozac
- II. Nizoral
- III. Tegretol

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

- a. Hypertension
- b. Diabetes
- c. Parkinson's
- d. Arrhythmia
- e. Ulcerative colitis

**33.** Patients with heparin sensitivity should avoid which of the following?

- a. Lovenox
- b. Viracept
- c. Rescriptor
- d. Coumadin
- e. Ticlid

**34.** The Food and Drug Administration has divided drugs into five different categories according to their potential to cause birth defect. Which of the following categories indicates the highest risk to the developing fetus?

- a. A
- b. B
- c. C
- d. D
- e. X

**35.** Which of the following is/are angiotensin II receptor antagonist(s)?

- I. Diovan
- II. Cozaar
- III. Avapro

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**36.** Duetact is indicated for the treatment of:

**PROFILE:2**

**Name:** Mr. Chris Anthony

**Address:** 115 Corneal Apt., NY.

**Height:** 6' 2" **Weight:** 190 lbs. **Sex:** Male **Age:** 35 **Allergy:** Belladonna, Phenobarbital

**Primary diagnosis:** Tonic Clonic seizure  
Ulcers  
Insomnia

**Secondary diagnosis:** Pain in GIT

**Lab results:**

NO	Drug	RxNO	Prescriber	Qty	Date	Refill
1	Mysoline 250mg, 1/po/hs	11052	Bill	30	01/11/11	5
2	Depakote 500mg, II/po/hs	11053	Bill	30	01/11/11	5
3	Butibel, 1/po/q.d.	11054	Bill	15	01/12/11	0
4	Scopolamine TDS, use/UD	11055	Bill	30	01/12/11	0
5	Maalox, 30cc/po/q.i.d.	11056	Bill	240	01/12/11	5
6	Tagamet 400mg, II/po/tid	11057	Bill	30	01/12/11	5
7	Cytotec 100, I/po/q.d.	11058	Bill	30	01/13/11	3
8	Fiorinal NO 3, I/po/q4h	11059	Bill	60	01/15/11	1
9	Feldene 20mg, 1/po/b.i.d.	11060	Bill	60	01/22/11	5
10	Xanax 0.5mg, II/po/hs	11061	Bill	60	01/23/11	2

**Pharmacist notes:** Bleeding in GIT on 01/25/11.  
Patient is allergic to Belladonna alkaloid and Phenobarbital.  
Patient should be advised for various activities to get natural sleep.

37. Tegretol is indicated for the treatment of:

- a. Trigeminal neuralgia
- b. Grand mal seizure
- c. Hypertension
- d. Absence seizure
- e. Atonic seizure

38. The active ingredient(s) of Mysoline is/are:

- I. Primidone
- II. Phenobarbital
- III. Mycolic Acid

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

39. Which of the following drug(s) should be avoided by Chris?

- I. Mysoline
- II. Maalox
- III. Cytotec

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

40. Chris is allergic to Elavil. Which of the following drug(s) should he avoid?

- I. Tegretol
- II. Carbatrol
- III. Equetro

- a. I only
- b. III only
- c. I and II only

- d. II and III only
- e. All

41. Humira is NOT indicated for which of the following?

- a. Rheumatoid arthritis
- b. Psoriatic arthritis
- c. Ankylosing spondylitis
- d. Crohn's disease
- e. Irritable Bowel Syndrome

42. The principal adverse effect(s) of Carbamazepine is/are:

- I. Aplastic anemia
- II. Agranulocytosis
- III. Neurotoxicity

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

43. Which of the following is a long-acting beta-2 receptor agonist?

- a. Proventil
- b. Foradil
- c. Brethine
- d. Maxair
- e. Tonalate

44. Chris falls down on a street. He needs an NSAID to suppress his pain. He usually forgets to take his medicines. Because of his habit to forget things, a pharmacist may have to recommend him which of the following?

- a. Ansaid
- b. Motrin
- c. Feldene
- d. Sulindac
- e. Dolobid

45. Which of the following NSAIDs is a prodrug?

- a. Voltaren
- b. Capoten
- c. Dolobid
- d. Indocin
- e. Anaprox

46. Naproxen is available in:

- I. Tablet
- II. Oral suspension
- III. Suppository

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

47. The normal therapeutic serum concentration of Dilantin is:

- a. 10 to 20 mg/ml
- b. 10 to 20 mcg/ml
- c. 30 to 50 mcg/ml
- d. 10 to 20 ng/ml
- e. 0 to 5 mcg/ml

48. Which of the following auxiliary labels requires before dispensing Noxafil?

- a. Take on an empty stomach.
- b. May cause drowsiness.
- c. For ear use only.
- d. Shake well before use.
- e. Refrigerate.

49. Which of the following is/are adverse effect(s) of Dilantin?

- I. Gingival hyperplasia
- II. Lupus erythematosus
- III. Ataxia

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

50. Nystagmus, slurred speech, a decrease in coordination and mental confusion are side effects of:

- I. Nifedipine
- II. Theophylline
- III. Phenytoin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

51. Depakote mainly acts:

- a. by increasing the concentration of GABA.
- b. by decreasing the concentration of GABA.
- c. by increasing the sodium influx in the brain.
- d. by decreasing the firing of chloride ions in the brain.
- e. by increasing the metabolism of GABA.

52. After initiating therapy with one of the following drugs, Chris feels symptoms of malaise, weakness, lethargy, facial edema, anorexia, and vomiting. His liver enzymes ALT, AST and LH are also elevated. These indicate the toxicity of:

- a. Dilantin
- b. Tegretol
- c. Depakote
- d. Cytotec
- e. Mysoline

**53.** Which of the following drug(s) should be avoided by Chris?

- I. Butibel
  - II. Donnatal
  - III. Spasmolin
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**54.** Tagamet is available in:

- I. Tablet
  - II. Injection
  - III. Oral solution
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**55.** What is the major difference between Travatan and Travatan Z?

- a. different active ingredient
- b. different potency
- c. different manufacturer
- d. different preservative
- e. different drug indication

**56.** Which of the following drugs may interact with Tagamet?

- I. Maalox
  - II. Ketoconazole
  - III. Theophylline
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**57.** All of the following drugs should require a prescription for purchase EXCEPT:

- a. Ritalin
- b. Anaprox
- c. Dilantin
- d. Depakote
- e. Tegretol

**58.** Which of the following is/are true about NSAIDs?

- I. NSAIDs are indicated for the treatment of pain, dysmenorrhea and bursitis.
  - II. G.I. ulceration and bleeding have been reported with the use of NSAIDs.
  - III. Any OTC NSAID should not be used for more than 15 days for pain or 10 days for fever.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**59.** Each Scopolamine transdermal system delivers:

- a. 0.5 mg of scopolamine for 72 hours.
- b. 1.0 mg of scopolamine for 3 days.
- c. 10 mg of scopolamine for 5 days.
- d. 1.5 mg of scopolamine for 7 days.
- e. 0.5 mg of scopolamine for 7 days.

**60.** Which of the following would be the MOST APPROPRIATE information to give the patient who is to receive Travatan Z for the treatment of ocular hypertension?

- a. Avoid installing eye drops in the evening.
- b. Avoid prolonged exposure to the sun.

- c. Doses must be calibrated by using the manufacturer's provided eye dropper.
- d. Shake well before each dose.
- e. Patients should be advised about the potential for increased brown pigmentation of the iris, which may be permanent.

**61.** The prescription for Maalox Plus suspension can be substituted by:

- I. Mylanta II
- II. Gelusil
- III. Gaviscon

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**62.** A patient has a past history of severe constipation. Which of the following antacids(s) should be avoided?

- I. Basaljel
- II. Amphojel
- III. Mylanta

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**63.** Which of the following is/are true about Cytotec?

- I. The active ingredient, Misoprostol, is a prostaglandin analog.
- II. It should not be given to pregnant women.
- III. The principal adverse effect of Cytotec is diarrhea.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**64.** Which of the following sedative agents is useful in the treatment of status epilepticus?

- a. Valium
- b. Xanax
- c. Halcion
- d. Doral
- e. Centrax

**65.** Which of the following sedative hypnotic agents is useful as an antiemetic agent for treatment of cancer chemotherapy-induced nausea and vomiting?

- a. Doral
- b. Klonopin
- c. Centrax
- d. Librium
- e. Ativan

**66.** Diazepam is available as a(n):

- I. Oral solution
- II. Tablet
- III. Injection

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**67.** Fentora is an effervescent buccal formulation of the potent opioid analgesic:

- a. Oxycodone
- b. Morphine
- c. Fentanyl
- d. Oxymorphone
- e. Codeine

**68.** Chris is currently taking Captopril, 25 mg two times daily. He comes to your pharmacy and asks about an equivalent dose of Zestril for Captopril. As a pharmacist you would tell him:

- a. 5 mg twice daily.
- b. 10 mg twice daily.
- c. 12.5 mg twice daily.
- d. 25 mg twice daily.
- e. You cannot switch two drugs on equivalent bases.

**69.**

HEALTHCARE PHARMACY  
Mr. Moose                      08/18/10

Duragesic TDS.....25 mcg #20  
Sig: Apply one patch every 72 hours  
for pain.

Dr. Bill Burk  
Refill-5                      EXP-09/18/10

Mr. Moose comes to your pharmacy with the above prescription to fill. You can refuse because the:

- I. Dispensing quantity is wrong.
- II. A number of allowable refills is wrong.
- III. Physician's signature and DEA number are missing.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**70.** The active ingredient(s) of DuoNeb is/are:

- I. Isoprenaline
- II. Albuterol
- III. Ipratropium

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**71.** Which of the following is an intranasal steroidal agent?

- a. Isuprel
- b. Accolate
- c. Atrovent
- d. Xopenex
- e. Nasonex

**72.** Pylera is indicated for the treatment of:

- a. Hepatitis B infection
- b. Helicobacter pylori infection
- c. P.Carinii.Pneumonia infection
- d. H. influenza infection
- e. S. pneumoniae infection

PROFILE:3

**Name:** Teddy Zang

**Address:** 505 Brick Drive, MD.

**Height:** 5' 9" **Weight:** 150 lbs.

**Age:** 40

**Sex:** M

**Allergy:** NK

**Primary diagnosis:** Schizophrenia  
 Hypertension  
 Gout arthritis  
 Asthma

**Secondary diagnosis:**

**Lab Test**

<b>Date</b>	<b>Lab result</b>	<b>Date</b>	<b>Lab result</b>
08/28/10	WBC: 2900/mm <sup>3</sup>	08/28/10	Uric acid blood level: 12mg/dL
08/28/10	BUN: 30 mg/dL		
08/28/10	CrCl: 25 ml/min		

<b>Drug</b>	<b>RxNO</b>	<b>Prescriber</b>	<b>Qty</b>	<b>Date</b>	<b>Refill</b>
1 Haldol 50mg, I cc/im/q.d./1wk	1132	Deepak	15	08/29/10	0
2 Methotrexate 2.5mg, II/po/q4h	1133	Deepak	30	08/28/10	1
3 Coumadin 2.5mg, I/po/q.d.	1133	Deepak	30	08/28/10	0
4 Azmacort MDI, II/puffs/q.i.d.	1134	Deepak	17	08/28/10	5
5 Accupril 10mg, I/po/q.d.	1135	Deepak	30	09/01/10	5
6 Cozaar 25mg, I/po/q.d.	1136	Deepak	30	09/01/10	1
7 Atrovent MDI, II/puffs/b.i.d.	1137	Deepak	14	09/02/10	5
8 Proventil MDI, II/puffs/b.i.d.	1138	Deepak	17	09/05/10	5
9 Actifed 2.5/60mg, II/po/hs	1139	Deepak	30	09/10/10	1
10 Aspirin EC 325mg, II/po/q.i.d.	1140	Deepak	30	09/11/10	1
11 HCTZ 50mg, I/po/q.d.	1141	Deepak	30	09/11/10	5
12 Maalox, 15cc/po/hs	1142	Deepak	240	09/12/10	0
13 Xanax 0.5mg, 1/po/hs	1143	Deepak	30	09/13/10	0

**Pharmacist notes:**

73. The active ingredient(s) of Advair Diskus is/are:

- I. Zileuton
- II. Fluticasone
- III. Salmeterol

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

74. All of the following indicate side effects of antipsychotic drugs EXCEPT:

- a. Dystonic reaction
- b. Akathisia
- c. Drug induced Parkinsonism
- d. Tardive dyskinesia
- e. Priapism

75. Haloperidol is available as a(n):

- I. Oral solution
- II. Tablet
- III. Injection

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

76. Which of the following would indicate that a patient understands why he is taking Brovana?

- a. "I have bipolar disorder."
- b. "I have obsessive compulsive disorder."
- c. "I have post-herpetic neuralgia."
- d. "I have severe diabetic peripheral neuropathy."
- e. "I have chronic bronchitis."

77. Aceon is indicated for the treatment of:

- a. Depression
- b. Schizophrenia
- c. Arrhythmia
- d. Hypertension
- e. Parkinsonism

78. The FDA has recently approved Risperdal-M Tab for which of the following indications?

- a. Obsessive Compulsive Disorder
- b. Schizophrenia
- c. Irritability associated with Autism
- d. Bipolar mania
- e. Parkinsonism

79. Effervescent granules of acetaminophen (OTC) are available under:

- a. Alka Seltzer
- b. TUMS
- c. Dolanex
- d. Tylenol
- e. Bromo Seltzer

80. After initiation of therapy, Mr. Zang suddenly suffers from spasm of the face and neck. Which of the following drug(s) should be given to alleviate the above symptoms?

- I. Valium injection
- II. Benadryl
- III. Cogentin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**81.** The major adverse effect of Clozaril which restricts its use in antipsychotic therapy is:

- a. Agranulocytosis
- b. Hepatitis
- c. Seizure
- d. Orthostatic hypotension
- e. Syncope

**82.** Treatment with Clozaril should not be initiated if the patient's WBC count is less than:

- a.  $3500/\text{mm}^3$
- b.  $7000/\text{mm}^3$
- c.  $11,000/\text{mm}^3$
- d.  $95,000/\text{mm}^3$
- e.  $5,000/\text{mm}^3$

**83.** A patient should avoid sunlight when on:

- I. HydroDiuril
- II. Mellaril
- III. Sumycin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**84.** Methotrexate is a(n):

- a. Folic acid antagonist
- b. Prostaglandin antagonist
- c. Alpha-1 blocker
- d. Cyclooxygenase enzyme inhibitor
- e. Thromboxane antagonist

**85.** Which of the following is/are folic acid antagonists?

- I. Pyrimethamine
- II. Triamterene
- III. Trimethoprim

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**86.** Methotrexate should be avoided in this patient because of his:

- I. High uric acid blood level
- II. Renal failure
- III. Hepatic failure

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**87.** Rheumatrex is available in a:

- I. 5 mg/wk dose pack
- II. 7.5 mg/wk dose pack
- III. 10 mg/wk dose pack

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**88.** Nexium is available as a(n):

- I. Delayed release capsule
- II. Delayed release oral suspension
- III. Injection for intravenous use

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**89.** An overdose of Methotrexate can be treated by:

- a. Acetylcysteine
- b. Sodium Polystyrene Sulfonate
- c. Etidronate sodium
- d. Leucovorin calcium
- e. Mesna

**90.** During Methotrexate therapy, a patient should be monitored for:

- I. Creatinine clearance
- II. SGPT level
- III. WBC counts

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**91.** An active ingredient found in Paregoric is:

- a. Loperamide HCl
- b. Attapulgate
- c. Diphenoxylate
- d. Camphorated opium
- e. Kaolin Pectin

**92.** Januvia is classified as a(n):

- a. 5- $\alpha$ -azoreductase inhibitor
- b. HMG CoA inhibitor
- c. Dipeptidyl peptidase-4 inhibitor
- d. ACE inhibitor
- e. Aldehyde dehydrogenase inhibitor

**93.** An onset of action of Insulin Lispro is:

- a. 5 to 15 minutes
- b. 30 to 60 minutes
- c. 8 to 16 hours
- d. 1 to 2 hours
- e. 5 to 10 hours

**94.** Which of the following is/are MAO-A inhibitor(s)?

- I. Marplan
- II. Nardil
- III. Parnate

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**95.** Which of the following is/are true about Marplan?

- I. Marplan should be discontinued 14 days before initiation of Prozac therapy.
- II. Prozac should be discontinued 5 weeks before initiation of Marplan therapy.
- III. Patients should avoid cheese, pickles, meats and fish during the therapy.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**96.** A physician writes the following prescription:

Omnaris 50 mcg qty. 1  
2 inhalations by mouth once daily for the treatment of allergic rhinitis.

Which of the following would be the MOST APPROPRIATE action of the pharmacist?

- a. Fill as written.
- b. Call the physician regarding dosage strength.
- c. Call the physician regarding dosage frequency.
- d. Call the physician regarding route of administration.
- e. Call the physician regarding drug indication.

**97.** The hepatic toxicity is more common with:

- I. Marplan
- II. Nardil
- III. Parnate

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**98.** The final dosage form of which of the following drug(s) could not be an elixir ?

- I. Cefobid
- II. Moxalactam
- III. Flagyl

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**99.** The active ingredient of an Azmacort is:

- a. Ipratropium
- b. Triamcinolone
- c. Flunisolide

- d. Metaproterenol sulfate
- e. Beclomethasone Dipropionate

**100.** A patient is using an inhaler for the first time. As a pharmacist you would advise him to:

- I. Hold the aerochamber and shake vigorously 3 to 4 times.
- II. Breathe in slowly and deeply through the mouth until you have taken a full breath.
- III. Hold breath for 5 to 10 seconds and repeat the steps.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**101.** Hyperkalemia is reported with:

- a. Lasix
- b. Benicar
- c. Singulair
- d. Brevibloc
- e. Inderal

**102.** Megace is used for:

- a. Achlorhydria
- b. Anorexia
- c. Dysmenorrhea
- d. Mania
- e. Dementia

**103.** Seroquel XR is indicated for the treatment of:

- I. Schizophrenia
- II. Bipolar Disorder
- III. Social Anxiety Disorder

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**PROFILE:4**

**Name:** Mr. Keith, Alta      **Address:** 2020 Bill Blvd., NY

**Height:** 6' 3"    **Weight:** 220lbs      **Sex:** Male      **Age:** 45      **Allergy:** NK

**Primary diagnosis:**

Hypertension  
 Asthma  
 Depression  
 Diabetes

**Secondary diagnosis:**

**Lab results:**

Blood glucose	180 mg/dL	08/18/10
K <sup>+</sup>	5.5 mEq/L	08/18/10
Na <sup>+</sup>	135 mEq/L	08/18/10
Cl <sup>-</sup>	95 mEq/L	08/18/10

NO	Drug	RxNO	Prescriber	Qty	Date	Refill
1	Questran, i/po /pack/q.d.	11322	Jack	30	08/12/10	5
2	Zocor 20mg, i/po/q.d.	11323	Jack	30	08/12/10	5
3	Elavil 50mg, i/po/hs	11324	Jack	30	08/12/10	5
4	Minipress 1mg, 1/po/hs	11325	Jack	30	08/13/10	5
5	Micronase 2.5mg, i/po/b.i.d.	11326	Jack	30	08/14/10	5
6	Precose 50mg, i/po/b.i.d.	11327	Jack	30	08/20/10	5
7	Zaroxolyn 2.5mg, i/po/q.d.	11328	Jack	30	08/20/10	5
8	Prozac 20mg, i/po/q.d.	11329	Jack	30	08/20/10	5
9	Tornalate MDI, iii/puffs/b.i.d.	11330	Jack	14	08/20/10	5
10	Beclovent MDI, ii/puffs/q.i.d.	11331	Jack	17	08/22/10	2
11	Atrovent MDI, ii/puffs/q.i.d.	11332	Jack	14	08/22/10	2
12	Motrin 400mg, ii/po/tid/prn	11333	Jack	30	08/25/10	0
12	Coumadin 2.5mg, i/po/qd	11334	Jack	30	09/02/10	1

**Pharmacist notes:**

**104.** Which of the following drug(s) should be avoided with Questran?

- I. Lanoxin
  - II. HydroDiuril
  - III. Vancomycin
- 
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**105.** Which of the following should not be used with Questran?

- a. Elavil
- b. Coumadin
- c. Bactrim
- d. Zaroxolyn
- e. Monopril

**106.** Which of the following drugs can be substituted for Questran?

- a. Compoz
- b. Cleocin
- c. Colestid
- d. Minipress
- e. Erythromycin

**107.** Which of the following is/are HMG-COA reductase enzyme inhibitor(s)?

- I. Zocor
  - II. Pravachol
  - III. Mevacor
- 
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**108.** Keith suddenly lost consciousness. Upon reviewing his electrocardiogram, his heartbeat showed 120-160 beats/minute. He also suffered from symptoms of tachycardia and mental confusion. All of these symptoms indicated the adverse effects of:

- a. Elavil
- b. Equanil
- c. Minipress
- d. Zocor
- e. Zaroxolyn

**109.** To alleviate the symptoms mentioned in Q.108, the pharmacist should give what advice to Keith before initiating the therapy?

- I. Restrict the initial dose of a drug to 1 mg.
  - II. The risk of tachycardia is greater when initial dose exceeds 2 mg/day.
  - III. Take the initial dose of drug at bed time to reduce chances of above symptoms.
- 
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**110.** A hospital pharmacist has just received a new medication order for Tyzeka. The pharmacist wishes to confirm the appropriateness of this order and calls the nurse for the patient's diagnosis. Which of the following diagnoses would confirm that the Tyzeka order is APPROPRIATE?

- a. Metastatic bone lesions
- b. Benign prostatic hyperplasia
- c. Epilepsy
- d. Glaucoma
- e. Hepatitis B

**111.** Prazosin is a(n):

- a. Beta-1 blocker
- b. Beta-2 blocker
- c. Alpha-1 blocker
- d. Alpha-2 blocker
- e. 5-HT blocker

**112.** First dose syncope is more commonly reported with:

- I. Minipress
  - II. Hytrin
  - III. Cardura
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**113.** Hytrin is indicated for the treatment of:

- I. Hypertension
  - II. B.P.H.
  - III. Depression
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**114.** Prozac is available as a(n):

- I. Pulvules
  - II. Oral Solution
  - III. Tablet
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**115.** Fluoxetine HCl is a:

- a. Reuptake inhibitor of norepinephrine.
- b. Reuptake inhibitor of epinephrine.
- c. Reuptake inhibitor of serotonin.
- d. Reuptake inhibitor of dopamine.
- e. Reuptake inhibitor of tyramine.

**116.** Which of the following is/are reported side effects of Tyzeka?

- I. Lactic acidosis
  - II. Severe hepatomegaly with steatosis
  - III. Acute exacerbations of hepatitis B
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**117.** The effectiveness of Coumadin therapy can be monitored by regularly checking:

- a. Bleeding time
- b. Clotting time
- c. Prothrombin time
- d. Anticoagulant plasma concentration
- e. Thromboplastin time

**118.** Which of the following is/are true about monitoring an anticoagulant therapy?

- I. The PT determination should be performed prior to initiating the therapy.
- II. The PT determination should be done within 24 hours of initiating therapy to establish the maintenance dose for an anticoagulant.
- III. Once the maintenance dose is established, the PT determination should be done once or twice a week.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**119.** Coumadin therapy should be monitored by regularly checking:

- I. PT
- II. INR
- III. PTT

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**120.** Which of the following informations about Nitromist is/are NOT TRUE?

- I. At the onset of an attack, one or two metered sprays should be administered on or under the tongue.
- II. A spray may be repeated approximately every 5 minutes as needed.
- III. No more than 5 metered sprays are recommended within a 15-minute period.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**121.** Which of the following is indicated for the treatment of nocturnal enuresis?

- a. Sinequan
- b. Tofranil
- c. Vivactil
- d. Asendin
- e. Anafranil

**122.** Which of the following drug(s) is/are indicated for the treatment of obsessive compulsive disorder?

- I. Anafranil
- II. Tofranil
- III. Asendin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**123.** A prescription for Micronase can be substituted with:

- a. Oramide
- b. Diabinese
- c. Glucotrol
- d. DiaBeta
- e. Dymelor

**124.** Keith is taking Benadryl elixir to treat his allergy problem. Suddenly one night he suffers from flushing, throbbing headaches, breathing difficulty, nausea, vomiting, weakness, and blurred vision. These symptoms are because of:

- a. Ativan
- b. Vivactil
- c. Diabinese
- d. Coumadin
- e. Benadryl

**125.** A patient hypersensitive to lincomycin should avoid which of the following?

- a. Ziana
- b. Flagyl
- c. Augmentin
- d. NebuPent
- e. Remicade

**126.** The active ingredient of Precose is:

- a. Doxepin
- b. Acarbose
- c. Amitriptyline
- d. Glyburide
- e. Glipizide

**127.** Precose is a(n):

- a. Specific Alpha-1 blocker
- b. Serotonin uptake blocker
- c. Cyclooxygenase enzyme inhibitor
- d. Alpha-glucosidase inhibitor
- e. Insulin uptake blocker

**128.** After taking Precose with DiaBeta, Keith suddenly suffered from tachycardia, confusion, low B.P., and excessive perspiration. These symptoms can be treated by:

- I. Dextrose
  - II. I.V. Glucose
  - III. Sucrose
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**129.** A patient is taking 100 mg Precose three times a day. The pharmacist has to advise the patient to regularly check his serum concentration of:

- a. AST
- b. TBIL
- c. INR
- d. PT
- e. CK

**130.** Hydroxycobalamin is indicated for the treatment of known or suspected poisoning of:

- a. Atropine
- b. Zinc
- c. Cyanide
- d. Alprazolam
- e. Methotrexate

**131.** Keith had recently started on Pancrelipase capsules for the treatment of his nutritional disorder. After a week of therapy, he had realized that his serum glucose readings were very erratic. When he went to a pharmacy and asked a pharmacist about his problem, the pharmacist had counseled him that:

- I. Pancrelipase enzymes might have triggered the blood glucose level by inhibiting insulin secretion.
  - II. Pancrelipase enzymes might have increased the insulin secretion.
  - III. Pancrelipase enzymes might have antagonized the action of Precose.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**132.** A patient taking Zaroxolyn may suffer from:

- a. Seizure
- b. Depression
- c. Electrolytes loss
- d. Ulcers
- e. Bleeding

**133.** An active ingredient of Tornalate is:

- a. Metoprolol Sulfate
- b. Isoprenaline
- c. Ipratropium

- d. Beclomethasone
- e. Bitolterol mesylate

**134.** Which of the following drugs acts via a proton pump inhibition?

- a. Aciphex
- b. Zantac
- c. Rebetedol
- d. Demerol
- e. Seromycin

**135.** An active moiety of Tonalate is:

- a. Pentalin
- b. Colterol
- c. Atropine
- d. Clomethasone
- e. Clobetasol

**136.** The principal advantage of Tonalate over the other bronchodilators is:

- a. Less side effects
- b. Less chance of resistance
- c. Easy administration
- d. More potent bronchodilation
- e. Prolonged duration of action

**137.** A patient is using Tonalate for the treatment of his asthma. He takes 4 puffs q.i.d. The pharmacist has to advise him that:

- I. The prescribed dose is less than what it therapeutically needed.
  - II. The prescribed dose is equivalent to what it therapeutically needed.
  - III. The prescribed dose is more than what it therapeutically needed.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**138.** How often should Invega Sustenna be administered to a patient suffering from schizophrenia?

- a. Weekly
- b. Biweekly
- c. Bimonthly
- d. Monthly
- e. Biennially

**139.** Which of the following types of insulin is the least immunogenic in nature compared to endogenous insulin?

- a. Beef insulin
- b. Pork insulin
- c. Human insulin
- d. Regular insulin
- e. NPH insulin

**140.** Mehta is a type-I diabetic patient. He measures his blood glucose every day. His physician prescribes him 20 units of NPH in the morning and 15 units in the evening and 12 units of Regular insulin in the morning and 10 units in the evening. After reviewing his chart, what would you recommend?

Days	8am	12noon	7pm	10hs
Mon	145	220	132	250
Tue	156	209	125	265
Wed	165	199	120	275
Thu	154	180	140	234
Fri	160	240	145	221
Sat	159	230	135	265
Sun	135	254	130	240

- I. Increase the morning dose for NPH insulin.
  - II. Increase the evening dose for NPH insulin.
  - III. Decrease the morning dose for a regular insulin.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**141.** Which of the following is/are risk factor(s) associated with the development of diabetes?

- I. Age
  - II. Sex
  - III. Family history
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**142.** Which of the following is/are true about Acova?

- I. It is indicated for the treatment of rheumatoid arthritis.
  - II. It is a direct thrombin inhibitor.
  - III. Bleeding is the major side effect of the drug.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**143.** Flushing is a major complication of Niacin therapy. It can be prevented by:

- I. Taking Niacin with food.
  - II. Initiating therapy with a low dose of Niacin.
  - III. Taking aspirin 30 minutes prior to Niacin dose.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**144.** Which of the following drugs should be administered with Questran to minimize its principal side effect?

- a. Alamag
- b. Colace
- c. Kayexalate
- d. Tagamet
- e. Lomotil

**145.** The use of Niacin requires careful monitoring when administered to:

- I. Diabetic patients
  - II. Patients with gout
  - III. Patients with jaundice
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**146.** Which of the following patented drug delivery technology is used in Invega tablet?

- a. OROS
- b. CORE
- c. GITS
- d. TTS
- e. Aciform

**PROFILE:5**

**Name:** Mike, Ursal

**Address:** 911 Ginseng St.

**Height:** 5'11"

**Weight:** 181 lbs.

**Sex:** M

**Allergy:** NKA

**Primary diagnosis:** (1) Ulcerative colitis  
(2) Constipation  
(3) CHF  
(4) Diabetes

**Secondary diagnosis:**

**Lab results:**

NO	Drug	RxNO	Prescriber	Qty	Date	Refill
1	Ery-tab 500mg 1/ po b.i.d.	10524	Kerlan	30	06/21/10	0
2	Hycodan syrup 15cc po b.i.d.	10525	Kerlan	240	06/12/10	1
3	Lozol 1.25mg 1/ po/q.d.	10526	Kerlan	30	06/12/10	5
4	Lanoxin 0.25 1/ po/q.d.	10527	Kerlan	30	06/12/10	5
5	Lomotil ii/po/prn/Q6h	10528	Kerlan	30	06/12/10	0
6	Tagamet 400mg 1/ po/q.i.d.	10529	Kerlan	60	07/13/10	5
7	Asacol 400mg 1/ po/q.i.d.	10530	Kerlan	120	06/14/10	5
8	Rezulin 200mg 1/ po/b.i.d.	10531	Kerlan	30	07/15/10	5
9	Colace 100mg 1/ po/hs	10532	Kerlan	30	06/15/10	5
10	Serax 15mg 1/ po/hs	10533	Kerlan	30	06/15/10	0
11	Actifed 1/ po/tid	10534	Kerlan	30	06/16/10	1

**Pharmacist Notes:**

**147.** Which of the following is/are adverse effect(s) reported with prolonged use of ophthalmic topical steroids?

- I. An increase in the intraocular pressure of the eyes.
- II. Increased chances of glaucoma and cataracts.
- III. Increased chances of eye infections.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**148.** Docusate is an active ingredient of:

- I. Surfak
- II. Dialose
- III. Colace

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**149.** Which of the following is/are non-sedative antihistamines?

- I. Zyrtec
- II. Allegra
- III. Claritin

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**150.** An active ingredient found in Hepsera is:

- a. Trimetrexate
- b. Isoniazid
- c. Ticarcillin
- d. Atovaquone
- e. Adefovir

**151.** The active ingredient(s) of Advicor is/are:

- I. Niacin
- II. Lovastatin
- III. Cholestyramine

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**152.** A prescription for Erythromycin ethyl succinate can be filled by selecting:

- a. EryPed
- b. Erythrocin
- c. Wintrocin
- d. Wyamycin
- e. EryTab

**153.** A nurse practitioner asks a pharmacist about the parenteral dosage forms of Erythromycin. The pharmacist may tell him which of the following?

- I. Ilotycin
- II. Erythrocin
- III. Ilosone

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**154.** Erythromycin is the preferred agent for the treatment of infections caused by:

- I. Legionella pneumophila
- II. Mycoplasma pneumonia
- III. Chlamydia trachomatis

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**155.** Otitis media is generally caused by:

- I. H. Influenza
- II. S. Pneumonia
- III. M. Pneumonia

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**156.** Cholestatic hepatitis is most commonly reported with:

- a. E-mycin
- b. Wintrocin
- c. Ilotycin
- d. Ilosone
- e. Robimycin

**157.** Which of the following is/are true about Lovenox?

- I. The active ingredient is Enoxaparin sodium.
- II. It is a low molecular weight heparin.
- III. It is available in 30 mg/0.3 ml injection form.

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**158.** A patient is suffering from muscle and leg cramps, weakness and fatigue. The laboratory finding indicates his serum potassium level about 1mEq/L. Which of the following should be avoided by the patient due to his current serum potassium concentration?

- a. Vasotec
- b. Accolate
- c. Lozol
- d. Dexedrine
- e. Slow Bid

**159.** The active ingredient(s) of Tussionex Pennkinetic is/are:

- I. Hydrocodone polistirex
- II. Chlorpheniramine polistirex
- III. Dextromethorphan polistirex

- a. I only
- b. III only
- c. I and II only
- d. II and III only
- e. All

**160.** A female patient tries to use Estraderm system for the first time. She comes to a pharmacist and asks how to use a transdermal system. The pharmacist may counsel her for all of the following EXCEPT:

- a. A patch should be placed on a clean, nonhairy and dry area of skin.
- b. The site of application must be rotated with an interval of at least 1 week.
- c. The breast is the best site for the application of the patch.
- d. The system should be applied immediately after opening of the patch.
- e. The waistline should be avoided because tight clothing may rub the system off.

**161.** Which of Theophylline salts contains the highest percentage of Theophylline?

- a. Theophylline monohydrate
- b. Aminophylline anhydrous
- c. Aminophylline dihydrate
- d. Oxytriphylline
- e. Theophylline sodium glycinate

**162.** A patient is on Theo-Dur (300mg) for the treatment of asthma. He is taking two tablets of Theo-Dur (300mg) three times a day. He is also taking Ery-Tab for the treatment of pneumoniae. After a week of therapy, suddenly one afternoon, he suffers from confusion, diarrhea, insomnia, nausea, vomiting and tachycardia. The laboratory finding reveals 30 mcg/ml serum concentration of Theophylline. The clinical pharmacist may advise that:

- I. The patient should omit the next Theo-Dur dose and reduce subsequent doses by 25%.
  - II. The patient should omit Theo-Dur for next two days.
  - III. The patient should take Theo-Dur dose as it is but discontinue Ery-Tab.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**163.** All of the following drugs may raise the serum concentration of Theophylline EXCEPT:

- a. Allopurinol
- b. Primidone
- c. Cimetidine
- d. Ciprofloxacin
- e. Erythromycin

**164.** Which of the following is the principal side effect of Tonocard?

- a. Pulmonary fibrosis
- b. Seizure
- c. NMS
- d. Depression
- e. Electrolytes loss

**165.** A patient is on Antabuse for the treatment of alcohol withdrawal. Which of the following product(s) should not be taken with Antabuse?

- I. Synophylate elixir
  - II. Elixophyllin elixir
  - III. Lufyllin tablets
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**166.** Which of the following is/are true about Lomotil?

- I. The active ingredients of Lomotil are Diphenoxylate and Atropine.
  - II. Diphenoxylate acts centrally and locally to reduce intestinal motility.
  - III. Atropine is included in this preparation because of its anticholinergic properties which help reducing water content in the intestine and controlling diarrhea.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

- 167.** Actiq should be classified as a:
- a. Schedule I controlled drug
  - b. Schedule II controlled drug
  - c. Schedule III controlled drug
  - d. Schedule IV controlled drug
  - e. Schedule V controlled drug
- 168.** Which of the following is NOT TRUE about Asacol?
- a. It is a delayed released tablet containing 400 mg Mesalamine.
  - b. It is coated with Eudragit-S, which dissolves at a pH of 7 or greater, and releases the Mesalamine into the intestine.
  - c. Mesalamine is an active moiety of Sulfasalazine.
  - d. Its anti-inflammatory action is attributed to its ability to inhibit the synthesis of prostaglandins.
  - e. It can be safely used in a patient with an impaired renal function.
- 169.** A patient allergic to Mesalamine should avoid:
- I. Asacol
  - II. Pentasa
  - III. Norpramin
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All
- 170.** A patient is an unconscious. Which of the following drugs can be used for the treatment of his ulcerative colitis?
- a. Pentasa
  - b. Rowasa
  - c. Dipentum
- d. Azulfidine
  - e. Anturan
- 171.** Zetia reduces which of the following?
- a. Low density lipoprotein
  - b. Neutrophils
  - c. AST
  - d. BUN
  - e. Serum creatinine
- 172.** Which of the following is the major side effect of Trovan?
- a. Hypotension
  - b. Seizure
  - c. Anemia
  - d. Diarrhea
  - e. Liver toxicity
- 173.** Which of the following is a 5-HT<sub>1</sub> receptor agonist?
- a. Mirapex
  - b. Axert
  - c. Entocort
  - d. Requip
  - e. Terramycin
- 174.** Which of the following is a proton pump inhibitor?
- a. Tagamet
  - b. Axid
  - c. Protonix
  - d. Zantac
  - e. Pepcid
- 175.** Plavix is indicated for the treatment of:
- a. Prevention of myocardial stroke
  - b. Diabetes
  - c. Parkinsonism
  - d. Asthma
  - e. Rheumatoid arthritis

**176.** Which of the following drug(s) is/are indicated for treatment of chemotherapy induced nausea and vomiting?

- I Zofran
  - II Kytril
  - III Anzemet
- 
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**177.** Which of the following is NOT TRUE about Avapro?

- a. The recommended initial dose is 150mg once daily.
- b. It is contradicted to use during pregnancy.
- c. It can be safely administered to elderly patients with mild renal or hepatic impairment.
- d. Dry hacking cough is a common complication of the therapy.
- e. It can be administered with or without food.



**178.** All of the following drugs are useful in the treatment of Parkinsonism EXCEPT:

- a. Akineton
- b. Permax
- c. Sinemet
- d. Parlodel
- e. Pamelor

**179.** Which of the following antiviral drugs is used for the treatment of Parkinsonism?

- a. Symmetrel
- b. Zovirax
- c. Rebetol
- d. Cytovene
- e. Retrovir

**180.** Which of the following patented drug delivery technology is used in Lialda tablet?

- a. OROS
- b. CORE
- c. GITS
- d. MMX
- e. Aciform

**181.** Which of the following is/are true about Talwin NX?

- I. It is intended for I.V. and I.M. use.
  - II. Naloxone HCl (0.5 mg) has a profound antagonist activity when given orally.
  - III. The active ingredients of Talwin NX are Pentazocine and Naloxone HCl.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**182.** Which of the following is/are dopamine receptor agonist(s)?

- I. Parlodel
  - II. Permax
  - III. Symmetrel
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**183.** Which of the following is/are TRUE about Parlodel?

- I. The active ingredient is Bromocriptine.
  - II. The first dose of the drug is generally associated with postural hypotension.
  - III. The pulmonary function should be monitored when the drug is used for more than 6 months.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**184.** A patient is taking Permax 1 mg q.i.d. for 1 week. Which of the following adverse effects is most likely to occur when a patient is taking a high dose of Permax?

- a. Hepatitis
- b. Seizure
- c. Cardiac arrhythmia
- d. Pulmonary fibrosis
- e. Depression

**185.** The recommended therapeutic dose of Lialda for the treatment of ulcerative colitis is:

- a. 0.6 to 1.2 grams per day.
- b. 2.4 to 4.8 grams per day.
- c. 3.6 to 4.8 grams per day.
- d. 4.8 to 6 grams per day.
- e. 1.2 to 2.4 grams per day.

**186.** Which of the following Beta-blockers is most commonly used for the treatment of action tremor associated with Parkinsonism?

- a. Corgard
- b. Inderal
- c. Sectral
- d. Tenormin
- e. Kerlone

**187.** Which of the following drugs is useful for the treatment of resting tremor?

- a. Symmetrel
- b. Inderal
- c. Vivactil
- d. Cogentin
- e. Eldepryl

**188.** The simultaneous use of Carbidopa with Levodopa may reduce the dose of Levodopa by:

- a. 10%
- b. 25%
- c. 50%
- d. 75%
- e. 88%

**189.** Which of the following eye-drops is a corticosteroid?

- a. Livostin
- b. Ciloxan
- c. Alrex
- d. Ocuflax
- e. Alomide

**190.** Flector is a transdermal patch formulation of the nonsteroidal anti-inflammatory drug:

- a. Ibuprofen
- b. Indomethacin
- c. Naproxen
- d. Piroxicam
- e. Diclofenac

**191.** A patient is on Dopar for the treatment of his Parkinson's. After taking the drug for several days, he suffers from nausea, vomiting and postural hypotension. He asks the physician to change the drug. The physician prescribes him Sinemet to prevent the above consequences. The Dopar must be discontinued:

- a. Before 24 hours of initiation of therapy with Sinemet.
- b. Before 48 hours of initiation of therapy with Sinemet.
- c. Before 8 hours of initiation of therapy with Sinemet.
- d. Before 1 week of initiation of therapy with Sinemet.
- e. Before 72 hours of initiation of therapy with Sinemet.

**192.** Which of the following drug(s) interact(s) with Sinemet?

- I. Basaljel
  - II. Reglan
  - III. Moban
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**193.** Which of the following drugs has the longest duration of action?

- a. Akineton
- b. Parlodel
- c. Permax
- d. Symmetrel
- e. Eldepryl

**194.** A patient is taking Eldepryl 5 mg b.i.d. He does not benefit from his current dosage regimen and starts taking 10 mg q.i.d. After 2 days, one night he suddenly suffers from extreme chest pain and tachycardia. This is due to the fact that:

- I. Selegiline may lose its MAO selectivity at higher doses.
  - II. Selegiline may inhibit the metabolism of serotonin at higher doses.
  - III. These reported side effects have nothing to do with the patient's current Eldepryl therapy.
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**195.** Which of the following drug(s) should be carefully prescribed with Eldepryl?

- I. Demerol
  - II. Prozac
  - III. Tyramine
- a. I only
  - b. III only
  - c. I and II only
  - d. II and III only
  - e. All

**196.** Which of the following drugs should be carefully prescribed to a patient hypersensitive to an NSAID?

- a. Pennsaid
- b. Lovenox
- c. Zydis
- d. Mepron
- e. OxyContin

**197.** A patient is recently diagnosed with Parkinsonism. Which of the following drugs would be recommended to treat his initial stage of Parkinsonism?

- a. Symmetrel
- b. Sinemet
- c. Eldepryl
- d. Akineton
- e. Permax

**198.** All of the following are cardioselective beta-blockers EXCEPT:

- a. Tenormin
- b. Sectral
- c. Lopressor
- d. Betoptic
- e. Corgard

**199.** All of the following steroidal agents are available in aerosol form EXCEPT:

- a. Budesonide
- b. Beclovent
- c. Aerobid
- d. Azmacort
- e. Deltasone

**200.** What is the manufacturer's recommended time to administer Novolog for the best possible glycemic control in diabetic patients?

**Profile-1**

**1(a)** A patient is allergic to sulfa drugs. He should avoid a drug which has a sulfa moiety in its molecule. The thiazide diuretics are structurally related to sulfa drugs. Therefore, the patient should avoid Hydrochlorothiazide.

**2(e)** The active ingredient of Geodon is Ziprasidone. It is classified as an antipsychotic agent. It is indicated for the treatment of schizophrenia. It is available as capsule and injection. The recommended therapeutic dose of Geodon is 20 to 80 mg twice daily. NMS, tardive dyskinesia, extrapyramidal symptoms and agitation are reported side effects of the drug.

**3(c)** Thiazide diuretics may cause hypokalemia and hyponatremia by enhancing a urinary excretion of sodium and potassium ions. It raises the serum concentration of uric acid, calcium ions and glucose by stimulating their reabsorption from the renal tubules. Thus, it causes hyperuricemia rather than hypouricemia.

**4(e)** Hydrochlorothiazide induced hypokalemia may increase the toxic effects of Digoxin. Questran (Cholestyramine) and Colestid (Colestipol) may inhibit the G.I. absorption of it by binding to its acidic group.

Concurrent use of Hydrochlorothiazide with lithium or lithium containing products is not recommended since both sodium and lithium ions may compete for reabsorption from renal tubules.

Because Hydrochlorothiazide increases the renal excretion of sodium ions, it facilitates the reabsorption of lithium ions from the renal tubules. This may result in increased serum concentration and toxicities of lithium.

**5(b)** Dryness of mouth, increased thirst, irregular heartbeats, muscle and leg cramps are signs of Hydrochlorothiazide induced hypokalemia.

**6(c)** Orapred ODT (Prednisolone sodium phosphate disintegrating tablets) is a sodium salt of the phosphoester of the glucocorticoid prednisolone.

It is indicated in the treatment of the atopic dermatitis, Crohn's disease, ulcerative colitis and acute exacerbations of chronic obstructive pulmonary disease (COPD).

Dosage of Orapred ODT should be individualized according to the severity of the disease and the response of the patient. The initial dose of Orapred ODT may vary from 10 to 60 mg (prednisolone base) per day, depending on the specific disease entity being treated.

Fluid retention, alteration in glucose tolerance, elevation in blood pressure, behavioral and mood changes, increased appetite and weight gain are commonly reported side effects of Orapred.

**7(c)** A normal therapeutic serum concentration of potassium lies between 3.5 and 5 mEq/L. The serum concentration of potassium below 3.5 mEq/L is defined as hypokalemia and if it is above 5 mEq/L, it is called hyperkalemia.

**8(e)** Aldactone (Spironolactone) oral tablets contain 25 mg, 50 mg, or 100 mg of the aldosterone antagonist Spironolactone. It is also known as a potassium sparing diuretic. It is indicated in the management of edema and sodium retention associated with congestive heart failure (CHF), cirrhosis of the liver and the nephrotic syndrome. It is also useful for the management of essential hypertension and hypokalemia.

Aldactone (spironolactone) is a specific pharmacologic antagonist of aldosterone, acting primarily through

competitive binding of receptors at the aldosterone-dependent sodium-potassium exchange site in the distal convoluted renal tubule. Aldactone causes increased amounts of sodium and water to be excreted, while potassium is retained. Aldactone acts both as a diuretic and as an antihypertensive drug by this mechanism. It may be given alone or with other diuretic agents which act more proximally in the renal tubule.

For the treatment of edema in adults, an initial daily dosage of 100 mg of Aldactone administered in either single or divided doses is recommended, but may range from 25 to 200 mg daily.

For the treatment of essential hypertension, an initial daily dosage of 50 to 100 mg of Aldactone administered in either single or divided doses is recommended. Aldactone in a dosage ranging from 25 mg to 100 mg daily is useful in treating a diuretic-induced hypokalemia, when oral potassium supplements or other potassium-sparing regimens are considered inappropriate.

Gynecomastia (excessive development of the male breasts), fever, urticaria and hyperkalemia are reported side effects of the drug.

All other choices such as Zaroxolyn (Metolazone), Hygroton (Chlorthalidone), Diuril (HCTZ) and HydroDiuril (HCTZ) are thiazide diuretics that cause hypokalemia.

**9(d)** Dulcolax (Bisacodyl) is a stimulant laxative. Its onset of action is about 8 to 10 hours when taken orally. The rectal dosage form (suppository) acts more rapidly than an oral dosage form.

It should never be given with milk, dairy products or antacids since its enteric coated form may dissolve at an alkaline pH and cause a severe G.I. irritation. It is indicated for the treatment of chronic constipation. The recommended dose of the drug is 5 to 10 mg by mouth at bed time.

**10 (c)** The active ingredient of Abelcet is Amphotericin B. It is also available under the following trade names: Amphotec (a powder for injection), and Ambisome (a liposomal form). It should be given parenterally via an I.V. infusion. It is an antifungal agent. It is indicated for the treatment of invasive fungal infections caused by invasive aspergillosis.

The recommended daily dosage for adults and children is 5 mg/kg given as a single infusion. Abelcet should be administered by intravenous infusion at a rate of 2.5 mg/kg/h. If the infusion time exceeds 2 hours, mix the contents by shaking the infusion bag every 2 hours. Patients should be pretreated with antipyretics, antihistamines, antiemetics and with Meperidine to reduce the signs and symptoms of shaking chills and fever.

Abdominal pain, anorexia, anxiety, hypokalemia, anemia, nephrotoxicity and diarrhea are reported side effects of the drug.

**11(a)** Gardasil is a vaccine indicated in girls and women 9 through 26 years of age for the prevention of the following diseases caused by Human Papillomavirus (HPV) types included in the vaccine:

1. Cervical, vulvar, and vaginal cancer caused by HPV types 16 and 18.
2. Genital warts (condyloma acuminata) caused by HPV types 6 and 11.

It is also indicated in boys and men 9 through 26 years of age for the prevention of genital warts (condyloma acuminata) caused by HPV types 6 and 11.

**12(e)** Erythromycin and other antibiotics may increase the absorption of Digoxin by altering the normal GI flora in the stomach which inactivates Digoxin prior to its absorption.

When used simultaneously with Quinidine, the serum concentration of Digoxin may normally raise which results in increased toxic effects of Digoxin. Colestid (Colestipol) and Questran (Cholestyramine) may reduce the

absorption of Digoxin by binding to the acidic moiety of Digoxin.

Also, Digoxin suppresses A.V. node conduction. Diltiazem and Verapamil have negative effects on A.V. node conduction which result in bradycardia when used concurrently with Digoxin.

The normal serum concentration of Digoxin should lie between 0.7 and 1.4 ng/ml. It is available as tablet, capsule, elixir and injection.

It is indicated for the treatment of CHF. The recommended dose of the drug is 0.125mg to 0.375mg by mouth per day.

**13(b)** Corgard (Nadolol) is classified as a beta blocker. It is indicated for the treatment of hypertension and angina.

The recommended therapeutic dose of the drug is 40 to 80 mg once a day. It is prescribed for excessively high doses - 80mg four times a day. Because of its prolonged duration of action and long half-life, it is generally recommended in a single daily dose.

Beta blockers have a suppression effect on A.V. node conduction, and therefore caution is required when used simultaneously with calcium-channel blockers like Diltiazem and Verapamil. Beta blockers may mask the symptoms of hypoglycemia such as tachycardia, confusion, difficulty in concentration, and therefore their use require great caution in diabetic patients. They also impair the gluconeogenesis and thereby prolong the period of hypoglycemia.

Beta blockers should never be used by the patient suffering from congestive heart failure (CHF). Acebutolol, Atenolol, Metoprolol and Betaxolol are cardio-selective beta-blockers.

**14(e)** Zelapar orally disintegrating tablets contain Selegiline hydrochloride as an active ingredient.

Selegiline is best known as an irreversible inhibitor of monoamine oxidase

(MAO). It is available for oral administration (not to be swallowed) in a strength of 1.25 mg.

It is indicated as an adjunct in the management of patients with Parkinson's disease (not the hypertension) being treated with levodopa/carbidopa who exhibit deterioration in the quality of their response to the therapy.

Treatment should be initiated with 1.25 mg given once a day for at least 6 weeks. After 6 weeks, the dose may be escalated to 2.5 mg given once a day if a desired benefit has not been achieved and the patient is tolerating Zelapar. It should be taken in the morning before breakfast and without liquid.

A severe hypertensive crisis, orthostatic/postural hypotension, dizziness, somnolence, ECG abnormality, nausea, dyspepsia, abnormal dreams, and infection are reported side effects of Zelapar.

**15(a)** Claritin (Loratadine), Clarinex (Desloratadine), Allegra (Fexofenadine) and Zyrtec (Cetirizine) are classified as non-sedative antihistamines. The non-sedative action of this class of antihistamines is attributed to their inability to cross the Blood Brain Barrier (B.B.B).

Claritin (Loratadine) is available as tablets, syrup and rapidly-disintegrating tablets (RediTabs). Each tablet for an oral administration contains 10 mg Loratadine as an active ingredient. It is indicated for the relief of nasal and non-nasal symptoms of seasonal allergic rhinitis and for the treatment of chronic idiopathic urticaria in patients 2 years of age or older.

For adults and children 6 years of age and over, the recommended dose of Claritin is one 10 mg tablet or Reditab, or 2 teaspoonful (10 mg) of syrup once daily. For children 2 to 5 years of age, the recommended dose of Claritin syrup is 5 mg (1 teaspoonful) once daily.

All other choices indicate antihistamines that have sedation property. Chlor-Trimeton (Chlorpheniramine), Benadryl (Diphenhydramine), Dimetane and Unisom (Doxylamine) are classified as sedative antihistamines.

**16(c)** Lucentis (Ranibizumab injection) is a recombinant monoclonal antibody designed for intraocular use. It is indicated for the treatment of patients with neovascular (wet) age-related macular degeneration (AMD) and macular edema following retinal vein occlusion (RVO). It is required to be stored in a refrigerator.

**17(a)** Toradol (Ketorolac tromethamine) is classified as an NSAID. It is indicated for the short-term management of moderate to acute pain. It has anti-inflammatory, antipyretic and analgesic properties. It inhibits the aggregation of platelets. It produces ulcers and increases the risk of G.I. bleeding by inhibiting the synthesis of prostaglandins.

**18(e)** Toradol (Ketorolac tromethamine) is generally preferred by an oral, I.V. or I.M. route. The maximum recommended daily dose of Toradol (Ketorolac) for oral administration is 40 mg/day, and for I.V./I.M. administration it is 120 mg/day. For an I.V. injection, at least 30 seconds should be provided so that the drug can uniformly distribute in the blood. Time required for I.V. administration of Toradol must not be less than 30 seconds.

**19(b)** Because of its serious and dangerous adverse effects, Toradol should not be used for more than 5 days.

**20(e)** Toradol (Ketorolac tromethamine) should never be given by intrathecal or epidural route because of its alcohol content. Its solution contains 10% w/v of alcohol.

**21(e)** Toradol (Ketorolac tromethamine) may reversibly inhibit the aggregation of platelets. Plicamycin, Valproic acid, Cefotetan, Cefoperazone and Moxalactam have been reported to inhibit the aggregation of platelets as well. The aggregation of platelets increases the risk of bleeding and therefore the concurrent use of Toradol with Plicamycin, Valproic acid and Moxalactam may not be recommended.

**22(a)** Gold-compound (Auranofin), Methotrexate and Probenecid may increase the risk of nephrotoxicity when used simultaneously with Toradol (Ketorolac tromethamine). Concurrent use should be strictly avoided. Concurrent use of Cefotetan with Toradol (Ketorolac tromethamine) may aggravate the bleeding tendency in patients by inhibiting the aggregation of platelets. The simultaneous use of Toradol with Cefotetan may require the close supervision. Antivert (Meclizine) is an antihistamine indicated for the treatment of vertigo and motion sickness. It can be safely administered with Toradol.

**23(d)** All other choices (K-Tab, K-Dur, Micro-K and Klotrix) indicate the oral solid dosage form of potassium which would cause irritation of the G.I. tract and aggravate patient's current ulcer condition. Liquid and effervescent preparations of potassium (Kaochlor) are less irritable to the G.I. tract and are more preferable over solid dosage forms.

**24(c)** The active ingredients of Symbicort are Budesonide and Formoterol. Budesonide is a corticosteroid and Formoterol is a long acting selective beta<sub>2</sub>-agonist. It is indicated for the long-term, twice-daily, maintenance treatment of asthma in patients 12 years of age and older.

It is NOT indicated for the relief of acute bronchospasm. Symbicort should be administered twice daily every day by the

orally inhaled route only. After inhalation, the patient should rinse the mouth with water without swallowing.

Symbicort should be primed before using for the first time by releasing two test sprays into the air away from the face, shaking well for 5 seconds before each spray. In cases where the inhaler has not been used for more than 7 days or when it has been dropped, prime the inhaler again by shaking well for 5 seconds before each spray and releasing two test sprays into the air away from the face.

**25(d)** Catapres (Clonidine) is classified as an alpha-2 receptor agonist. It is indicated for the treatment of hypertension. The recommended therapeutic dose of the drug is 0.1 mg to 0.3 mg twice daily.

The transdermal system TTS-2 releases 0.2 mg of Clonidine per day for seven days. Catapres TTS system is available in 0.1, 0.2 and 0.3 mg of TTS strength. The Catapres TTS should be changed once a week.

Hypotension, tachycardia, anorexia, orthostatic hypotension and impotence are reported side effects of the drug.

**26(b)** The stimulation of alpha-2 receptors prevents the release of noradrenaline. Clonidine is an alpha-2 receptor agonist. By stimulation of this receptor, it helps controlling patients' hypertension.

**27(d)** Abilify (Aripiprazole) is classified as an antipsychotic agent. It is indicated for the treatment of schizophrenia. The recommended therapeutic dose of the drug is 10 to 30 mg once a day without regard to meals. NMS, tardive dyskinesia, extrapyramidal symptoms and agitation are reported side effects of Abilify. It is available as a tablet for an oral administration

**28(e)** Lasix (Furosemide) is classified as a loop diuretic. This class of drugs has a distinct

action on the renal tubules function and so called high ceiling diuretics. They inhibit sodium and chloride reabsorption in the ascending limb of loop of Henle, hence they are known as loop diuretics.

Lasix (Furosemide) is indicated for the treatment of edema associated with CHF, nephrotic syndrome and hepatic cirrhosis. The recommended therapeutic dose of the drug is 20 to 80 mg per day.

An I.V. administration of Furosemide may reduce the pulmonary vascular congestion and pulmonary venous pressure by systematic venous dilation. Lasix oral solution should be protected from light. It is available as tablet, oral solution and injection.

Hypokalemia, weakness, lethargy, dizziness, hyperglycemia, and orthostatic hypotension are reported side effects of the drug.

**29(c)** Xolegel contains the antifungal agent Ketoconazole 2% in a topical anhydrous gel vehicle for topical administration. It is indicated for the topical treatment of seborrheic dermatitis in immuno competent adults and children 12 years of age and older. The gel should be applied once daily to the affected area for 2 weeks. Xolegel is for topical use only, and not for oral, ophthalmic, or intra vaginal use.

**30(d)** Geodon (Ziprasidone) is an antipsychotic agent. It is available as capsules for oral administration and as an injection for intramuscular use only.

Each capsule for oral administration contains 20mg, 40mg, 60mg or 80mg Ziprasidone. Each mL of Ziprasidone mesylate for injection (when reconstituted) contains 20 mg of Ziprasidone.

It is indicated for the treatment of schizophrenia, as monotherapy for the acute treatment of bipolar manic or mixed episodes, and as an adjunct to lithium or valproate for

the maintenance treatment of bipolar disorder. It has the tendency to prolong the QT/QT<sub>c</sub> interval. This may lead to torsade de pointes arrhythmia, polymorphic ventricular tachycardia and sudden death. It should be carefully prescribed to patients suffering from any type of heart disease.

**31(b)** The administration of Toradol (Ketorolac tromethamine) by oral route provides more bioavailability compared to the parenteral route.

**32(c)** Abilify (Aripiprazole) is a psychotropic drug that is available as tablets, orally disintegrating tablets or Discmelt, an oral solution, and a solution for intramuscular injection. Abilify tablets are available in 2 mg, 5 mg, 10 mg, 15 mg, 20 mg, and 30 mg strengths. Its orally disintegrating tablets are available in 10 mg and 15 mg strengths. Abilify oral solution is a clear, colorless to light yellow solution available in a concentration of 1 mg/mL. Its injection is available in single-dose vials as a ready-to-use (7.5 mg/mL) aqueous solution for intramuscular use only.

It is indicated for the treatment of schizophrenia. It is also indicated for the acute and maintenance treatment of manic and mixed episodes associated with bipolar I disorder.

It should be carefully prescribed with enzyme inhibitors. The dosage of Abilify should be reduced to half when prescribed with Paxil (Paroxetine), Prozac (Fluoxetine), Quinidine and Nizoral (Ketoconazole). Tegretol (Carbamazepine) induces the metabolism of Abilify and reduces the pharmacological activity of the drug. The dosage of Abilify should be doubled when simultaneously administered with Tegretol (Carbamazepine).

**33(a)** Lovenox (Enoxaparin sodium) is classified as a low molecular weight heparin.

It is indicated for the treatment of embolism after knee replacement surgery. The recommended therapeutic dose of the drug is 30 mg via subcutaneously every 12 hours.

Bleeding, hemorrhage, hematoma at injection site, thrombocytopenia and priapism are reported side effects of the drug. It should be carefully prescribed to patients with heparin hypersensitivity.

**34(e)** Category X indicates the highest risk to the developing fetus. The following is the summary of the highest risk category to the lowest risk category to developing fetus. X>D>C>B>A where (A) includes the list of drugs that have been shown as having the least risk to a developing fetus.

**35(e)** Cozaar (Losartan), Diovan (Valsartan), Avapro (Irbesartan), Benicar (Olmesartan) and Micardis (Telmisartan) are classified as Angiotensin II receptor antagonists. They rarely produce cough and angioedema, which is a common problem with Angiotensin Converting Enzyme Inhibitors. They are indicated for the treatment of hypertension.

The severe hypotension in volume depleted patients and hyperkalemia are principal side effects of these drugs. They should be carefully prescribed during the second and third trimesters of pregnancy.

**36(b)** Duetact (Pioglitazone hydrochloride and Glimepiride) tablets contain two oral antihyperglycemic agents used in the management of type 2 diabetes: Pioglitazone hydrochloride and Glimepiride.

Pioglitazone hydrochloride is an oral antihyperglycemic agent that acts primarily by decreasing insulin resistance whereas Glimepiride is an oral blood glucose-lowering drug of the sulfonylurea class.

Duetact is available as a tablet for oral administration containing 30 mg Pioglitazone hydrochloride (as the base) with 2 mg

Glimepiride (30 mg/2 mg) or 30 mg Pioglitazone hydrochloride (as the base) with 4 mg Glimepiride.

Duetact is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus who are already treated with a thiazolidinedione and a sulfonylurea or who have inadequate glycemic control on a thiazolidinedione alone or a sulfonylurea alone.

Based on the usual starting dose of Pioglitazone (15 mg or 30 mg daily), Duetact may be initiated at 30 mg/2 mg or 30 mg/4 mg tablet strengths once daily, and adjusted after assessing adequacy of therapeutic response.

Therapy with Duetact should not be initiated if the patient exhibits clinical evidence of active liver disease or increased serum transaminase levels (ALT greater than 2.5 times the upper limit of normal) at start of therapy. Edema, weight gain, liver toxicity, upper respiratory tract infections and hypoglycemia are reported side effects of the drug.

## PROFILE-2

**37(a)** Tegretol (Carbamazepine) is classified as an antiepileptic drug. It is indicated for the treatment of partial and grand mal seizures and relief of pain associated with trigeminal neuralgia and glossopharyngeal neuralgia. It is also used for alcohol withdrawal treatment.

It rapidly relieves anxiety and distress in acute alcohol withdrawal treatment. The recommended therapeutic dose of drug is 800 mg to 1200 mg per day in two to four divided doses (depends on a formulation).

Aplastic anemia and agranulocytosis are reported side effects of the drug. It is available in tablet, chewable tablet, capsule, suspension and extended release tablet form.

The normal therapeutic serum concentration of the drug should lie between 10 and 20 mcg/ml. Because it is structurally

related to tricyclic antidepressants, it should be carefully used by patients hypersensitive to tricyclic antidepressants (TCAs).

**38(c)** The active metabolites of Mysoline (Primidone) are Phenobarbital and Phenylethylmalonamide (PEMA). It is classified as an antiepileptic drug. It is indicated for the treatment of all type of epilepsy except Petit mal.

For most adults and children 8 years of age and over, the usual maintenance dosage is three to four 250 mg Mysoline tablets in divided doses (250 mg t.i.d. or q.i.d.). If required, an increase to five or six 250 mg tablets daily may be made but daily doses should not exceed 500 mg q.i.d.

Ataxia, fatigue, hyperirritability, vertigo, diplopia and nystagmus are principal side effects of the drug.

The normal therapeutic serum concentration range for Phenobarbital is 10 and 20 mcg/ml. It generally enhances the metabolism of other drugs by its enzyme induction property. Mysoline is available in oral tablet and suspension form.

**39(a)** One of the active metabolites of Mysoline is Phenobarbital. It should be avoided by Chris because of his allergy problem.

**40(e)** Tegretol, Carbatrol and Equetro are brand names of Carbamazepine, which is structurally related to TCA. They should be carefully prescribed to patients hypersensitive to tricyclic antidepressants (TCAs).

**41(e)** Humira (Adalimumab) is a recombinant human IgG1 monoclonal antibody specific for human tumor necrosis factor (TNF). It is supplied as a sterile, preservative-free solution of Adalimumab for subcutaneous administration.

It is indicated for reducing signs and symptoms, inducing major clinical response, inhibiting the progression of structural damage, and improving physical function in adult patients with moderately to severely active rheumatoid arthritis, juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, plaque psoriasis and Crohn's disease.

The recommended dose of Humira for adult patients with rheumatoid arthritis, psoriatic arthritis, or ankylosing spondylitis is 40 mg administered every other week.

The recommended dose of Humira for patients 4 to 17 years of age with polyarticular juvenile idiopathic arthritis is based on weight of patients.

The recommended dose of Humira for adult patients with plaque psoriasis is an initial dose of 80 mg, followed by 40 mg given every other week starting one week after the initial dose.

Patients treated with Humira are at increased risk for developing serious infections that may lead to hospitalization or death. Most patients who developed these infections were taking concomitant immunosuppressants such as methotrexate or corticosteroids. Humira should be discontinued if a patient develops a serious infection or sepsis.

Reported infections include:

1. Active tuberculosis, including reactivation of latent tuberculosis.
2. Invasive fungal infections, including histoplasmosis, coccidioidomycosis, candidiasis, aspergillosis, blastomycosis, and pneumocystosis.
3. Bacterial, viral and other infections due to opportunistic pathogens.

**42(e)** Tegretol (Carbamazepine) may cause bone marrow suppression. The whole blood counts should be done at regular intervals.

Ataxia (unsteadiness) and diplopia (double vision) are neurotoxic side effects of Carbamazepine. It can be reduced by administering the drug at night or by dividing the total daily dose into 3 to 4 intervals during the day. Patients should also be monitored for aplastic anemia, agranulocytosis and thrombocytopenia during therapy.

Carbamazepine may induce the secretion of antidiuretic hormone which may cause sodium and water retention and dilutional hyponatremia.

**43(b)** Foradil (Formoterol fumarate) is classified as a long-acting beta-2 receptor agonist. It is indicated for treatments of COPD and exercise-induced bronchospasm. It should not be used to treat acute symptoms of asthma.

The recommended dose of the drug is one puff twice daily in the morning and evening. Proventil (Albuterol), Brethaire (Terbutaline), Maxair (Pirbuterol) and Tonalate (Bitolterol) are classified as short acting beta-2 receptor agonists. They are indicated for the treatment of acute symptoms of asthma.

**44(c)** All of the above mentioned NSAIDs can be used for the treatment of pain. But the patient has a habit of forgetting things.

Feldene (Piroxicam) is classified as a nonsteroidal anti-inflammatory agent. It is indicated for the treatment of mild to moderate pain. It can be taken twice daily because of its prolonged duration of action and extended half-life, and so it is more appropriate for the treatment of pain in Chris.

The recommended daily dose of Piroxicam is 20 mg per day in a single or two divided doses. Ulcer, G.I. bleeding, nausea and vomiting are reported side effects of the drug.

**45(c)** Dolobid (Diflunisal) is a prodrug. A prodrug is a pharmacological substance (drug) administered in an inactive (or significantly

less active) form. Once administered, the prodrug is metabolised in vivo into an active metabolite.

Dolobid is classified as a salicylic acid derivative with anti-inflammatory and analgesic properties. It is indicated for the treatment of mild to moderate pain, rheumatoid arthritis and osteoarthritis.

The recommended therapeutic dose of Diflunisal is 500 mg to 1000 mg per day in two to three divided doses. G.I. ulceration and bleeding are principal side effects of the drug.

**46(c)** Naprosyn, Anaprox, and Anaprox DS (Naproxen) are classified as NSAIDs. Naproxen is indicated for the treatment of mild to moderate pain associated with rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, dysmenorrhea, acute tendonitis and bursitis.

It is available in tablet and oral suspension forms. The recommended dose of Naproxen is 500 mg to 1000 mg per day in two to three divided doses. G.I. ulceration and bleeding are reported side effects of the drug.

**47(b)** The normal therapeutic serum concentration range for Dilantin should be between 10 and 20 mcg/ml. The concentration greater than 20 mcg/ml may cause nystagmus whereas the concentration greater than 30 mcg/ml may cause ataxia. The concentration greater than 40 mcg/ml may produce lethargy and dysarthria.

**48(d)** Noxafil (Posaconazole) is a triazole antifungal agent available in a suspension for an oral administration. It is a white, cherry-flavored immediate-release suspension containing 40 mg of Posaconazole per ml.

It is indicated for prophylaxis of invasive *Aspergillus* and *Candida* infections in patients, 13 years of age and older, who are at high risk of developing these infections due to being severely immunocompromised, such as hematopoietic stem cell transplant (HSCT)

recipients with graft-versus-host disease (GVHD) or those with hematologic malignancies with prolonged neutropenia from chemotherapy. It is also indicated for the treatment of oropharyngeal candidiasis, including oropharyngeal candidiasis refractory to itraconazole and/or fluconazole.

Each dose of Noxafil should be administered during or immediately (i.e. within 20 minutes) following a full meal. In patients who cannot eat a full meal, each dose of Noxafil should be administered with a liquid nutritional supplement or an acidic carbonated beverage. For patients who cannot eat a full meal or tolerate an oral nutritional supplement or an acidic carbonated beverage, alternative antifungal therapy should be considered or patients should be monitored closely for breakthrough fungal infections.

A pharmacist should instruct a patient to shake Noxafil oral suspension well before use. Arrhythmias, QT prolongation and liver toxicity are reported side effects of the drug.

**49(e)** Dilantin (Phenytoin) is classified as an antiepileptic drug. It is a hydantoin derivative. It is indicated for the treatment of grandmal and psychomotor seizures. It is available in tablet, chewable tablet, oral suspension and parenteral dosage forms. The recommended dose of the drug is 125 to 250 mg three times a day.

Gingival hyperplasia is the principal side effect of Dilantin. It refers to bleeding from, and enlargement of the gums. The symptoms usually begin to appear within 24 weeks from the initiation of therapy. It may cause gingivitis or inflammation of gums. The chances of gingivitis are higher in younger than in older patients. Lupus erythematosus and ataxia have also been reported with the treatment of Dilantin.

**50(b)** Nystagmus (continuous uncontrolled rolling, back and forth movement of eye),

ataxia (unsteadiness; patient can't walk steadily), dysarthria (stuttering or slurred speech) and lethargy (weakness) are reported side effects of Dilantin (Phenytoin).

**51(a)** Depakote (Sodium valproate) or Depakene (Valproic acid) is classified as an antiepileptic drug. It generally increases the concentration of GABA (Gamma Amino Butyric Acid). GABA is an inhibitory neurotransmitter and hence by increasing the concentration of it, antiepileptic action is produced.

Depakote (Sodium valproate) Depakene (Valproic acid) is indicated for the treatment of simple and complex seizures. It is generally considered as a drug of choice for all kinds of epilepsy.

Patients should initiate therapy at 10 to 15 mg/kg/day. The dosage should be increased by 5 to 10 mg/kg/week to achieve optimal clinical response. Ordinarily, optimal clinical response is achieved at daily doses below 60 mg/kg/day. The extended release tablet form is also used for the treatment of mania (associated with bipolar disorder) and migraine. It is available in tablet, extended release tablet, sprinkle capsule and syrup forms.

The recommended initial dose for the treatment of mania is 750 mg daily in divided doses. The dose should be increased as rapidly as possible to achieve the lowest therapeutic dose which produces the desired clinical effect or the desired range of plasma concentrations.

For the treatment of migraine, the recommended starting dose is 250 mg twice daily. Some patients may benefit from doses up to 1000 mg/day.

The major adverse effects of Valproic acid are hypoprothrombinemia, pancreatitis, teratogenicity and hepatotoxicity.

**52(c)** Depakote (Valproate sodium) is a highly hepatotoxic drug responsible for the elevation of liver enzymes and producing hepatotoxicity.

**53(e)** The patient is allergic to belladonna alkaloids and phenobarbital. The active ingredients of Butibel are (belladonna + butalbital) and of Donnatal are (atropine + hyoscyamine + scopolamine + phenobarbital). Therefore, all these drugs should be avoided by the above patient. The combination of anticholinergic and sedative agents is used as an adjunct therapy in the treatment of irritable bowel syndrome.

**54(e)** Tagamet (Cimetidine) is classified as an histamine H<sub>2</sub> receptor antagonist. It is indicated for the treatment of G.I. and duodenal ulcer, gastroesophageal reflux disease, erosive esophagitis and heartburn.

The recommended therapeutic dose of the drug is 400 to 1600 mg per day in two to four divided doses. It is available in tablet, injection and oral solution.

Headache, somnolence, fatigue, nausea, vomiting and abdominal discomfort are reported side effects of the drug.

**55(d)** Travatan Z (Travoprost) is a new formulation of Travatan solution in which benzalkonium chloride is replaced with SofZia, a robust ionic buffered preservative system that is gentle to the ocular surface.

Travoprost is a synthetic prostaglandin F analogue. It is indicated for the reduction of elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension, who are intolerant of or insufficiently responsive to other intraocular pressure lowering medications.

The recommended dosage is one drop in the affected eye(s) once daily in the evening. It should not be administered more than once daily since it has been shown that more frequent administration of prostaglandin analogs may decrease the intraocular pressure lowering effect.

**56(e)** Tagamet (Cimetidine) has a  $CP_{450}$  inhibition property that inhibits the metabolism of a number of drugs. It increases the toxicities of Theophylline and Ketoconazole.

Also, concurrent use of antacids and  $H_2$  receptor antagonists may not be recommended since the absorption of  $H_2$  receptor antagonists may be impaired by antacids. Patients should be advised not to take any antacids within one-half to 1 hour of taking any  $H_2$  receptor antagonist.

**57(b)** Anaprox (Naproxen sodium) is available as an OTC counter pain medication. Anaprox DS is 550 mg of Naproxen sodium and required a prescription for purchase.

**58(c)** NSAIDs are used for pain, dysmenorrhea and bursitis. The G.I. ulceration and bleeding have been reported with the use of NSAIDs. Any OTC NSAID should not be used for more than 3 days for fever and 7 days for pain.

**59(b)** Scopolamine HBr is classified as an anticholinergic/antispasmodic agent. Transderm Scop is indicated in adults for prevention of nausea and vomiting associated with motion sickness and recovery from anesthesia and surgery.

To prevent the nausea and vomiting associated with motion sickness, one Transderm Scop patch (programmed to deliver approximately 1.0 mg of scopolamine over 3 days) should be applied to the hairless area behind one ear at least 4 hours before the antiemetic effect is required. To prevent post operative nausea and vomiting, the patch should be applied the evening before scheduled surgery. To minimize exposure of the newborn baby to the drug, apply the patch one hour prior to cesarean section. Only one patch should be worn at any time.

Nausea, vomiting, dryness of mouth, constipation, urinary retention, increased intraocular pressure and xerostomia (altered taste perception) are reported side effects of Scopolamine.

**60(e)** Travatan Z (Travoprost ophthalmic solution) 0.004% is indicated for the reduction of elevated intraocular pressure in patients with open angle glaucoma or ocular hypertension.

The recommended dosage is one drop in the affected eye(s) once daily in the evening. Travatan Z (Travoprost ophthalmic solution) should not be administered more than once daily since it has been shown that more frequent administration of prostaglandin analogs may decrease the intraocular pressure lowering effect.

Patients should be advised about the potential for increased brown pigmentation of the iris, which may be permanent. Patients should also be informed about the possibility of eyelid skin darkening, which may be reversible after discontinuation of Travatan Z.

Patients should also be informed of the possibility of eyelash and vellus hair changes in the treated eye during treatment with Travatan Z. These changes may result in a disparity between eyes in length, thickness, pigmentation, number of eyelashes or vellus hairs, and/or direction of eyelash growth.

Eyelash changes are usually reversible upon discontinuation of treatment.

**61(c)** The active ingredients found in Maalox Plus are Aluminum, Magnesium and Simethicone. Mylanta II and Gelusil have the same active ingredients that Maalox Plus does. Gaviscon has Aluminum and Magnesium carbonate, but not Simethicone.

**62(c)** The aluminum ion is responsible for causing constipation whereas the magnesium ion is responsible for causing diarrhea. Basaljel and Amphojel contain aluminum and should be avoided by patients suffering from a severe constipation.

**63(e)** The active ingredient of Cytotec is Misoprostol. It is a synthetic prostaglandin E analog. It is indicated for the prevention of

gastric ulcers associated with the use of non-steroidal anti-inflammatory drugs. It has a cytoprotective as well as an antisecretory action.

The recommended adult oral dose of Cytotec for reducing the risk of NSAID-induced gastric ulcers is 200 mcg four times daily with food. If this dose cannot be tolerated, a dose of 100 mcg can be used. It is available in 0.1 mg to 0.2 mg of oral strength. It is also available in combination with Diclofenac sodium under the brand name of Arthrotec.

It is contraindicated, because of its abortifacient properties, in women who are pregnant or going to be pregnant in near future. It may cause miscarriage.

The most frequently reported G.I. adverse effects are diarrhea and abdominal pain.

**64(a)** Valium (Diazepam) injection is indicated as an adjunct therapy in status epilepticus. Dosage should be individualized for maximum beneficial effect. The usual recommended dose in older children and adults ranges from 2 mg to 20 mg I.M. or I.V., depending on the indication and its severity.

Parenteral Ativan (Lorazepam) has also been found useful for the treatment of status epileptics. Status epilepticus is generally defined as severe, recurrent episodes of convulsions.

**65(e)** Ativan (Lorazepam) is classified as the benzodiazepine class of drugs. It is indicated for the treatment of anxiety and insomnia. The parenteral form of Lorazepam reduces the severity and duration of nausea and vomiting associated with emetogenic cancer therapy. It is available in tablet, concentrated oral solution and injection form.

Sedation, depression, constipation, lethargy, fatigue, diplopia and nystagmus are reported side effects of the drug.

Librium (Chlordiazepoxide), Tranxene (Clorazepate), Valium (Diazepam) and Serax (Oxazepam) are indicated for the relief of acute alcohol withdrawal symptoms like agitation, tremor, impending and acute delirium.

**66(e)** Valium (Diazepam) is classified as a benzodiazepine. It is indicated for the treatment of anxiety, convulsion, skeletal muscle spasm and acute alcohol withdrawal symptoms. It potentiates the effects of gamma amino butyric acid. It is available in tablet, oral solution, injection and oral intensol solution dosage forms.

The recommended dose of the drug is 2 to 10 mg, three to four times a day. Sedation, depression, constipation, lethargy, fatigue, diplopia and nystagmus are reported side effects of the drug.

**67(c)** Fentora (Fentanyl buccal tablet) is a potent opioid analgesic, intended for buccal mucosal administration. Fentora is formulated as a flat-faced, round, beveled-edge white tablet. Fentora is designed to be placed and retained within the buccal cavity for a period sufficient to allow disintegration of the tablet and absorption of Fentanyl across the oral mucosa.

Fentora employs the OraVescent drug delivery technology, which generates a reaction that releases carbon dioxide when the tablet comes in contact with saliva. It is believed that transient pH changes accompanying the reaction may optimize dissolution (at a lower pH) and membrane permeation (at a higher pH) of Fentanyl through the buccal mucosa.

Each tablet contains Fentanyl citrate equivalent to Fentanyl base: 100, 200, 300, 400, 600 and 800 micrograms.

It is indicated only for the management of breakthrough pain in patients with cancer who are already receiving and who are tolerant to around-the-clock opioid therapy for their underlying persistent cancer pain.

Patients considered opioid tolerant are those who are taking around-the-clock medicine consisting of at least 60 mg of oral morphine daily, at least 25 mcg of transdermal Fentanyl/hour, at least 30 mg of oxycodone daily, at least 8 mg of oral hydromorphone daily or an equianalgesic dose of another opioid daily for a week or longer.

This product must not be used in opioid non-tolerant patients because life-threatening hypoventilation and death could occur at any dose in patients not on a chronic regimen of opioids. For this reason, Fentora is contraindicated in the management of acute or postoperative pain.

Physicians should individualize treatment using a progressive plan of pain management. For opioid-tolerant patients not being converted from Actiq, the initial dose of Fentora is always 100 mcg.

**68(e)** One cannot switch Captopril and Zestril on equivalent bases.

**69(e)** Duragesic TDS (Fentanyl) is classified as a schedule II control substance. It is indicated for the treatment of moderate to severe pain. Life-threatening hypoventilation, severe respiratory depression, skeletal muscle rigidity and apnea are reported side effects of the drug.

The recommended initial dose of the drug is 25 mcg/hour (patch) for three days. The dose can be increased gradually upon developing tolerance to the drug. It must not be refilled under any circumstance. The prescription is written for one month and the patient is using 1 patch every third day, and therefore the dispensing quantity are supposed to be 10 instead of 20.

A schedule II controlled substance prescription must contain a valid signature of a prescribing physician and his/her DEA number, and it cannot be refilled under any circumstances.

**70(d)** The active ingredients of (DuoNeb, Combivent) are Ipratropium bromide and Albuterol. DuoNeb is an inhalation solution of Albuterol and Ipratropium whereas Combivent is an inhaler form of these drugs. They are indicated for the treatment of asthma.

The recommended dose of DuoNeb is one vial (3 ml) via nebulizer four times a day.

Anticholinergic side effects such as dry mouth, constipation, urinary retention and increased intraocular pressure are reported with DuoNeb therapy.

**71(e)** Nasonex (Mometasone furoate monohydrate) is classified as an intranasal steroidal agent. It is indicated for the treatment of nasal symptoms of seasonal allergic and perennial allergic rhinitis.

The recommended dose of Nasonex is 2 sprays in each nostril once daily. Nasal irritation, nasopharyngeal irritation, burning, dryness, headache, and stinging are reported with Nasonex.

**72(b)** Pylera capsules are a combination antimicrobial product containing Bismuth subcitrate potassium, Metronidazole, and Tetracycline hydrochloride for oral administration. Each hard gelatin capsule contains:

1. Bismuth subcitrate potassium, 140 mg
2. Metronidazole, 125 mg
3. Tetracycline hydrochloride, 125 mg

Pylera capsules, in combination with Omeprazole are indicated for the treatment of patients with Helicobacter pylori infection and duodenal ulcer disease (active or history of within the past 5 years) to eradicate H. pylori. The eradication of Helicobacter pylori has been shown to reduce the risk of duodenal ulcer recurrence.

Each dose of Pylera includes 3 capsules. Each dose of all 3 capsules should be taken 4 times a day, after meals and at bedtime for 10 days.

Patients should be instructed to swallow the Pylera capsules whole with a full glass of water (8 ounces). One Omeprazole 20 mg capsule should be taken twice a day with Pylera after the morning and evening meal for 10 days.

### PROFILE-3

**73(d)** The active ingredients of Advair Diskus are Flovent (Fluticasone) and Serevent (Salmeterol). It is indicated for chronic treatment of asthma. It should not be used to treat acute symptoms of asthma. The recommended initial dose is fluticasone/salmeterol 100 mcg/ 50 mcg twice daily. Patients should completely rinse the mouth after each dose.

**74(e)** Tardive dyskinesia, dystonic reactions, akathisia, NMS (neuroleptic malignant syndrome) and drug-induced Parkinsonism are frequently reported side effects of antipsychotic drugs. Priapism, a persistent, usually painful, erection that lasts for more than four hours and occurs without sexual stimulation, is not a frequently reported side effect of antipsychotics. It is usually reported with Desyrel (Trazodone).

**75(e)** Haldol (Haloperidol) is classified as an antipsychotic drug. It is indicated for the treatment of schizophrenia and Tourette's syndrome in children.

The recommended therapeutic dose of Haloperidol is 0.5 to 5 mg, two to three times a day. Tardive dyskinesia, dystonic reactions, akathisia, NMS (neuroleptic malignant syndrome), sedation and drug-induced Parkinsonism are frequently reported side effects of the drug. It is available in tablet, oral concentrate and injection form.

**76(e)** Brovana (Arformoterol tartrate) is a selective beta2-adrenergic bronchodilator. It is

indicated for the long term, twice daily (morning and evening) maintenance treatment of bronchoconstriction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema.

It is for use by nebulization only. The recommended dose of Brovana (Arformoterol tartrate) inhalation solution for COPD patients is 15 mcg administered twice a day (morning and evening) by nebulization. A total daily dose greater than 30 mcg (15 mcg twice daily) is not recommended.

Brovana should be stored refrigerated in foil pouches. Asthenia, fever, headache, vomiting, hyperkalemia, leukocytosis, nervousness, and tremor are reported side effects of Brovana.

**77(d)** Aceon (Perindopril) is classified as an ACE inhibitor. It is indicated for the treatment of essential hypertension. In patients with essential hypertension, the recommended initial dose is 4 mg once a day. The dose may be titrated, as needed to a maximum of 16 mg per day. The usual maintenance dose range is 4 mg to 8 mg administered as a single daily dose or in two divided doses. Chest pain, hypotension, dry cough, rash, hyperkalemia, dizziness and myalgia are reported side effects of the drug.

**78(c)** Risperdal (Risperidone) is classified as an antipsychotic agent. It is available in tablet, oral solution and orally disintegrating tablet form. Each tablet for an oral administration contains 0.25 mg, 0.5 mg, 1 mg, 2 mg, 3 mg, or 4 mg Risperidone. It is also available as a 1 mg/mL oral solution.

Risperdal M-Tab (orally disintegrating tablets) are available in 0.5 mg, 1 mg, 2 mg, 3 mg, and 4 mg strengths. It is indicated for the acute and maintenance treatment of schizophrenia.

On October 6, 2006 - The U.S. Food and Drug Administration (FDA) approved

Risperdal (Risperidone) orally disintegrating tablets, an adult antipsychotic drug, for the symptomatic treatment of irritability in autistic children and adolescents. The approval is the first for the use of a drug to treat behaviors associated with autism in children. These behaviors are included under the general heading of irritability, and include aggression, deliberate self-injury, and temper tantrums.

The dosage of Risperdal should be individualized according to the response and tolerability of the patient. The total daily dose of Risperdal can be administered once daily or half the total daily dose can be administered twice daily.

Caution should be exercised with dosage for smaller children who weigh less than 15 kg. NMS, tardive dyskinesia, extrapyramidal symptoms and agitation are reported side effects of the drug.

**79(e)** Bromo Seltzer (Effervescent granules of Acetaminophen) is classified as an analgesic and antipyretic agent. It is indicated for relieving pain and fever associated with various disease conditions. Bromo Seltzer contains 325 mg of Acetaminophen with 2.781 gm of sodium bicarbonate and 2.224 gm of citric acid. The recommended dose of Acetaminophen is 325 to 650 mg every 4 to 6 hours as needed. Liver toxicity is the principal side effect of the drug.

**80(d)** These symptoms indicate dystonic reaction, which involves sudden spasm of the neck, face or trunk. Dystonic reaction can be managed by anticholinergic agents like Diphenhydramine or Benztropine.

For the treatment of akathisia, Diazepam and anticholinergic agents are usually preferable.

For the treatment of drug-induced Parkinson's, anticholinergic drugs have been found effective.

**81(a)** Clozaril (Clozapine) is classified as an atypical antipsychotic agent. It is indicated for the treatment of schizophrenia.

Agranulocytosis is the principal side effect of the drug. Treatment with Clozaril should not be initiated if the patient's WBC count is less than 3,500/mm<sup>3</sup>. In order to start Clozaril, the WBC must be at least 3500 mm<sup>3</sup>, and the ANC must be at least 2000 mm<sup>3</sup>. Both values are required in order to dispense Clozaril.

For the first 6 months, the patients are required to have their blood work done weekly. The blood work result must be seen by the dispensing pharmacist prior to dispensing the drug. The blood work draw date may not be more than 7 days old in order for the pharmacist to dispense the medication. The pharmacist, after viewing the blood work, may dispense a 1-week's supply of Clozaril. If the blood values (WBC and ANC) are not available to the pharmacist, Clozaril may not be dispensed. Blood work must be reported to the CNR promptly (within 5 days of dispensing Clozaril).

It is recommended that treatment with Clozaril begin with one-half of a 25-mg tablet (12.5 mg) once or twice daily and then be continued with daily dosage increments of 25-50 mg/day, if well tolerated, to achieve a target dose of 300-450 mg/day by the end of 2 weeks.

Subsequent dosage increments should be made no more than once or twice weekly, in increments not to exceed 100 mg. Cautious titration and a divided dosage schedule are necessary to minimize the risks of hypotension, seizure, and sedation. The dispensing of Clozapine should not exceed a week supply. Seizure and myocarditis are also reported with Clozapine.

**82(a)** Treatment with Clozaril should not be initiated if the patient's WBC count is less than 3,500/mm<sup>3</sup>.

In order to start Clozaril, the WBC must be at least 3500 mm<sup>3</sup>, and the ANC must be at least 2000 mm<sup>3</sup>. Both values are required in order to dispense Clozaril.

For the first 6 months, the patients are required to have their blood work done weekly. The blood work result must be seen by the dispensing pharmacist prior to dispensing the drug. The blood work draw date may not be more than 7 days old in order for the pharmacist to dispense the medication. The pharmacist, after viewing the blood work, may dispense a 1-week's supply of Clozaril. If the blood values (WBC and ANC) are not available to the pharmacist, Clozaril may not be dispensed. Blood work must be reported to the CNR promptly (within 5 days of dispensing Clozaril).

**83(e)** Thiazide diuretics, phenothiazines, tetracyclines and sulfonamides may increase the sunlight sensitivity of skin. Patients who are taking these drugs for a prolonged period of time need to avoid direct sunlight.

**84(a)** Methotrexate is classified as a folic acid antagonist. It is generally indicated for the treatment of leukemia, non-Hodgkin's disease, osteosarcoma, multiple myeloma and arthritis.

It may cause hepatotoxicity, diarrhea, ulcerative colitis and stomatitis. It may produce marked bone marrow suppression with anemia, leukopenia and thrombocytopenia.

It may raise the serum concentration of uric acid and therefore should be carefully used by patients with gout.

During Methotrexate therapy, patients should be periodically checked for whole blood counts and hepatic and renal functions. Probenecid may inhibit the renal excretion of Methotrexate and thereby raise the serum concentration of the drug and its toxicity.

An overdose of Methotrexate can be treated by the use of Wellcovorin (Leucovorin calcium). Periodic monitoring of CBC with

differential, platelet counts, and liver and renal function tests are a mandatory part of Methotrexate therapy.

**85(e)** Dyrenium (Triamterene), Trimpex (Trimethoprim), Methotrexate and Daraprim (Pyrimethamine) are folic acid antagonists.

Triamterene is a potassium sparing diuretic. It is indicated for the treatment of edema associated with CHF, nephrotic syndrome and hepatic cirrhosis.

Pyrimethamine is indicated for the treatment of malaria and other protozoal infections, while Trimethoprim is generally combined with Sulfamethoxazole for the treatment of bacterial infections.

**86(c)** The normal blood uric acid concentrations should lie between 6 and 7mg/dL. The patient's blood report indicates an elevated level of blood uric acid (12 mg/dL).

An elevated uric acid level may extravagate the patient's current gout condition. Methotrexate generally has a tendency to elevate the blood uric acid concentration and therefore should be carefully used in this patient.

A normal creatinine clearance should generally lie between 80 and 120 ml/min. A decrease in renal creatinine clearance (25ml/min) may indicate severe renal function impairment. Methotrexate therapy should be carefully initiated in patients with an impaired renal function.

**87(e)** Rheumatrex, a brand name of Methotrexate, is available in dose packs. It is available in 5 mg, 7.5 mg, 10 mg, 12.5 mg, 15 mg, 17.5 mg and 20 mg of dose pack strengths.

Dose packs are generally indicated for the treatment of rheumatoid arthritis. The recommend starting dose for rheumatoid arthritis is 7.5 mg, once a week.

The dose packs are generally not recommended for the administration of weekly doses of the drug greater than 20 mg.

**88(e)** Nexium (Esomeprazole) is classified as a Proton Pump Inhibitor (PPI). It is supplied in delayed-release capsules and in packets for a delayed-release oral suspension. Each delayed-release capsule contains 20 mg, or 40 mg of esomeprazole in the form of enteric-coated granules and each packet of Nexium for delayed-release oral suspension contains 10 mg, 20 mg, or 40 mg of Esomeprazole, in the form of the same enteric-coated granules used in Nexium Delayed-Release Capsules. It is also available as an injection for intravenous administration.

It is indicated for the short-term treatment (4 to 8 weeks) in the healing and symptomatic resolution of diagnostically confirmed erosive esophagitis. It is also indicated for short-term treatment (4 to 8 weeks) of heartburn and other symptoms associated with GERD in adults and children 1 year or older.

Nexium, in combination with amoxicillin and clarithromycin, is indicated for the treatment of patients with *H. pylori* infection and duodenal ulcer disease.

Nexium I.V. for Injection is indicated for the short-term treatment (up to 10 days) of GERD patients with a history of erosive esophagitis as an alternative to oral therapy in patients when therapy with Nexium delayed-release capsules is not possible or appropriate.

Headache, abdominal pain, nausea and diarrhea are reported side effects of the drug.

**89(d)** Wellcovorin (Leucovorin calcium) is a derivative of tetrahydrofolic acid. It is indicated as an antidote for folic acid antagonists such as Methotrexate. It is also indicated for the treatment of megaloblastic anemia due to folic acid deficiency. It is available in 5 mg and 25 mg of oral strength.

Leucovorin calcium tablets are intended for oral administration. Because absorption is saturable, oral administration of doses greater than 25 mg is not recommended.

Leucovorin rescue should begin as soon as possible after an inadvertent overdose and within 24 hours of methotrexate administration when there is delayed excretion. Leucovorin 15 mg (10 mg/m<sup>2</sup>) should be administered IM, IV, or PO every 6 hours until serum methotrexate level is return to normal.

Leucovorin should be carefully prescribed with 5-FU (Fluorouracil) since it may enhance the toxic effect of 5-FU. Patients should be watched for diarrhea when these two drugs are simultaneously used.

Thrombocytopenia, nausea, vomiting, diarrhea, anaphylaxis reactions and anorexia are reported side effects of the drug.

**90(e)** Since creatinine clearance helps predicting renal function of patients, the periodic monitoring of it is required for a nephrotoxic drug like Methotrexate.

Checking the SGPT level helps monitoring the liver function.

Whole blood counts may help predicting the bone marrow suppression that has been frequently reported with high doses of Methotrexate.

**91(d)** The active ingredient found in Paregoric is camphorated opium tincture. Paregoric is indicated for the treatment of diarrhea. This medication should not be used by patients having diarrhea associated with food poisoning or drug-induced ulcerative colitis, since in such cases it reduces the motility of the intestine which further causes a delay in the removal of toxin from the G.I. tract.

**92(c)** Januvia (Sitagliptin phosphate) is an orally-active inhibitor of the dipeptidyl peptidase-4 (DPP-4) enzyme. Each film-coated tablet of Januvia contains 25, 50, or 100 mg Sitagliptin. Sitagliptin is a DPP-4 inhibitor, which is believed to exert its actions

in patients with type 2 diabetes by slowing the inactivation of incretin hormones.

Incretin hormones, including glucagon-like peptide-1 (GLP-1) and glucose-dependent insulintropic polypeptide (GIP), are released by the intestine throughout the day, and levels are increased in response to a meal.

These hormones are rapidly inactivated by the enzyme, DPP-4. When blood glucose concentrations are normal or elevated, GLP-1 and GIP increase insulin synthesis and release from pancreatic beta cells by intracellular signaling pathways involving cyclic AMP.

GLP-1 also lowers glucagon secretion from pancreatic alpha cells, leading to reduced hepatic glucose production.

By increasing and prolonging active incretin levels, Januvia increases insulin release and decreases glucagon levels in the circulation in a glucose-dependent manner.

It is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus. The recommended dose of Januvia is 100 mg once daily. Januvia can be taken with or without food. Hypoglycemia is commonly reported side effect of Januvia.

**93(a)** Humalog (Insulin Lispro) is human insulin analog that is a rapid-acting blood glucose lowering agent. It is indicated for the treatment of diabetes mellitus. It has a more rapid onset (about 10 to 15 minutes) and a shorter duration of action than human regular insulin.

Pharmacokinetic studies showed Humalog to be equipotent to human regular insulin (i.e., one unit of Humalog has the same glucose-lowering capability as one unit of human regular insulin), but with more rapid activity. The quicker glucose-lowering effect of Humalog is related to the more rapid absorption rate from subcutaneous tissue.

When used as a meal-time insulin, Humalog should be given within 15 minutes

before or immediately after a meal. Human regular insulin is best given 30 to 60 minutes before a meal. To achieve optimal glucose control, the amount of longer-acting insulin being given may need to be adjusted when using Humalog. Hypoglycemia is the principal side effect of the drug.

**94(e)** Marplan (Isocarboxazid), Nardil (Phenelzine) and Parnate (Tranylcypromine) are MAO-A inhibitors. They inhibit the Monoamine oxidase enzyme which is responsible for metabolism of serotonin and catecholamines. They are indicated for the treatment of depression. MAO inhibitors should be carefully prescribed with Prozac (Fluoxetine), tricyclic antidepressants and with tyramine containing products since the simultaneous use may cause severe hypertensive crisis.

**95(e)** Marplan (Isocarboxazid) should be discontinued at least 14 days before initiating the treatment with Prozac (Fluoxetine). Concurrent use of Prozac with MAO inhibitors may result in confusion, agitation, restlessness, G.I. symptoms, or severe hypertensive crisis.

Because of the prolonged half-life of Prozac, it should be discontinued at least 5 weeks before initiating therapy with any of MAO inhibitors.

Meperidine, when concurrently used with MAO inhibitors, may result in severe hypertensive crisis. Other drugs which need to be avoided with MAO inhibitors are Trazodone, caffeine, Methylphenidate and Sympathomimetic amines.

**96(d)** The active component of Omnaris nasal spray is Ciclesonide, a non-halogenated glucocorticoid. It is indicated for the treatment of nasal symptoms associated with seasonal allergic rhinitis in adults and children 6 years of age and older. It is also indicated for the treatment of nasal symptoms associated with

perennial allergic rhinitis in adults and adolescents 12 years of age and older.

The recommended dose of Omnaris Nasal Spray is 2 sprays per nostril (not by mouth) once daily (200 mcg). The maximum total daily dosage should not exceed 2 sprays in each nostril (200 mcg/day).

A pharmacist should question a physician about the route of administration of the drug.

**97(c)** The hepatic toxicity is more common with Marplan and Nardil.

**98(e)** Elixir contains 5 to 40% alcohol. All of the mentioned drugs have been found to interact with alcohol and may produce disulfiram-like reactions.

Ethanol is generally converted to acetaldehyde by an alcohol dehydrogenase enzyme, which is then subsequently converted to acetic acid by action of aldehyde dehydrogenase enzyme.

Accumulation of acetaldehyde may be responsible for producing hot flashing, throbbing headaches and disulfiram-like reactions.

All of the above drugs inhibit the aldehyde dehydrogenase enzyme and produce disulfiram-like reactions. Therefore, the final dosage form of these all mentioned drugs could not be an elixir.

**99(b)** The active ingredient of Azmacort is Triamcinolone. It is classified as a glucocorticosteroid. It is indicated for the treatment of asthma.

The recommended dose of the drug is 2 puffs, three to four times a day. Corticosteroids are not useful agents for the treatment of acute attacks of asthma.

Prolonged use of corticosteroids may lead to oral candidiasis and thrush. Patients should rinse and wash mouth properly with water after each inhalation to prevent oral

candidiasis. It is preferable to use beta-2 agonists first, followed by corticosteroids, to provide more bioavailability of corticosteroids in the bronchioles.

**100(e)** All.

**101(b)** Benicar (Olmesartan) is classified as an Angiotensin II receptor antagonist. It is indicated for the treatment of hypertension.

The recommended dose of drug is 20 to 40mg by mouth once daily, with or without food. It is available in tablet dosage form. Dizziness, upper respiratory tract infections, fatigue, diarrhea, pharyngitis, rhinitis and hyperkalemia are reported side effects of Benicar.

**102(b)** Megace (Megestrol acetate) is indicated for the treatment of advanced carcinoma of the breast and endometrium.

Megace oral suspension is also indicated for the treatment of anorexia, cachexia, or an unexplained, significant weight loss in patients with a diagnosis of acquired immunodeficiency syndrome (AIDS). The recommended adult initial dosage of Megace oral suspension is 800 mg/day (20 mL/day).

Megace ES (Megestrol acetate) is a concentrated formula supplied as an oral suspension containing 125 mg of megestrol acetate per mL.

Weight gain is a frequently reported side effect of the drug.

**103(c)** Seroquel XR (Quetiapine fumarate) is an anti-psychotropic agent. It is supplied for oral administration as 50, 150 mg, 200 mg, 300 mg, and 400 mg.

It is indicated for the treatment of schizophrenia. It is indicated for the acute treatment of manic or mixed episodes associated with bipolar I disorder, both as monotherapy and as an adjunct to lithium or divalproex. In addition, it is also indicated for

the acute treatment of depressive episodes associated with bipolar disorder.

Seroquel XR tablets should be swallowed whole and not split, chewed or crushed. It is recommended that Seroquel XR be taken without food or with a light meal (approximately 300 calories). It should be administered once daily, preferably in the evening. The recommended initial dose is 300 mg/day.

Tachycardia, blurred vision, dryness of mouth, constipation, dyspepsia, somnolence, tremor, hypotension, extrapyramidal symptoms and dizziness are reported side effects of the drug.

#### PROFILE-4

**104(e)** Questran (Cholestyramine) is classified as a bile-acid binding resin. It is indicated for the reduction of an elevated serum cholesterol levels in patients with hypercholesterolemia.

The recommended dose of Questran is 8 to 16 grams per day in two divided doses. It should be taken with plenty of water to prevent constipation.

Flatulence, constipation, abdominal pain, nausea, vomiting, dyspepsia and heartburn are reported side effects of the drug.

It should be avoided with drugs that contain the carboxylic acid group in their chemical structures. It binds to the acidic moiety of these drugs and reduces the absorption and bioavailability of these drugs.

**105(b)** Questran (Cholestyramine) may bind to Coumadin in the G.I. tract and reduce the absorption and pharmacological effect of the drug. It is advisable to keep at least a 6-hour interval between administration of Questran and an oral anticoagulant, Coumadin.

**106(c)** Colestid (Colestipol) is classified as a bile acid binding resin. It can be substituted for Questran (Cholestyramine). Both these

drugs bind to bile acid in the intestine and prevent its reabsorption. They form an insoluble complex with bile acid which is then excreted in the feces. The loss of bile acid stimulates the hepatic synthesis of bile acid from cholesterol, and may help reducing the body's cholesterol level. The recommended dose of Colestipol is 2 to 16 grams as a single or in two divided doses.

Flatulence, constipation, abdominal pain, nausea, vomiting, dyspepsia and heartburn are reported side effects of Colestipol. The drug should be taken with plenty of water to prevent constipation.

**107(e)** Zocor (Simvastatin), Mevacor (Lovastatin), Lipitor (Atorvastatin) and Pravachol (Pravastatin) are HMG-COA reductase inhibitors. An inhibition of HMG-COA reductase enzyme prevents the conversion of HMG-COA to a mevalonate, which is an early step in the synthesis of cholesterol.

It is recommended that liver function tests should be performed before and two to three months after an initiation of the therapy. Mevacor (Lovastatin), Zocor (Simvastatin) and Pravachol (Pravastatin) should be administered with evening meals or at bed time, while Lipitor (Atorvastatin) can be given any time of the day with or without food.

**108(c)** Minipress (Prazosin) is classified as a specific alpha-1 blocker. It is indicated for the treatment of hypertension. The recommended therapeutic dose is 1 mg two to three times a day.

Dosage may be slowly increased to a total daily dose of 20 mg given in divided doses. The therapeutic dosages most commonly employed have ranged from 6 mg to 15 mg daily given in divided doses. Doses higher than 20 mg usually do not increase efficacy, however a few patients may benefit from further increases up to a daily dose of 40 mg given in divided doses.

The first dose syncope (sudden loss of consciousness) is generally associated with alpha-1 blockers. The vasodilation produced by Minipress (Prazosin) leads to reflex tachycardia. The first dose syncope sometimes leads to tachycardia with heart rates of 120-160 beats per minute.

**109(e)** The first dose syncope generally occurs within 30 to 90 minutes after the initial dose of Minipress. The incidence of syncope is higher when the initial dose of Minipress is greater than 2 mg. It can be minimized by limiting the initial dose of the drug to 1mg, and by taking the dose at bed time.

**110(e)** Tyzeka (Telbivudine) is a synthetic thymidine nucleoside analogue with activity against hepatitis B virus (HBV). Each film-coated tablet contains 600 mg Telbivudine. Tyzeka oral solution is available for oral administration in 100 mg/5 mL strength.

Tyzeka is indicated for the treatment of chronic hepatitis B in adult patients with evidence of viral replication and either evidence of persistent elevations in serum aminotransferases (ALT or AST) or histologically active disease.

The recommended dose of Tyzeka for the treatment of chronic hepatitis B is 600 mg once daily, taken orally, with or without food. Tyzeka may be used for the treatment of chronic hepatitis B in patients with impaired renal function. No adjustment to the recommended dose of Tyzeka is necessary in patients whose creatinine clearance is > 50 mL/min.

**111(e)** Minipress (Prazosin) is classified as an alpha-1 receptor blocker. Blocking these receptors may lead to the dilation of blood vessels that supply to skeletal muscles, and help controlling the hypertension.

**112(e)** Minipress (Prazosin), Hytrin (Terazosin) and Cardura (Doxazosin) are specific alpha-1 blockers. They may cause first dose syncope.

**113(e)** Hytrin (Terazosin) is classified as a specific alpha-1 blocker. It is indicated for the treatment of hypertension and B.P.H. (Benign Prostatic Hyperplasia). The symptoms related to BPH are due to bladder outlet obstruction.

The dynamic component of the body may increase the smooth muscle tone in the bladder, neck and prostate gland, which constricts the bladder by stimulating alpha-1 adrenoreceptors. Hytrin (Terazosin) is an alpha-1 receptor blocker which reduces the symptoms associated with bladder obstruction and improves urinary flow by relaxing smooth muscles of the bladder, neck and prostate gland.

The dose should be increased in a stepwise fashion to 2 mg, 5 mg, or 10 mg once daily to achieve the desired improvement of symptoms and/or flow rates. Doses of 10 mg once daily are generally required for the clinical response. Therefore, treatment with 10 mg for a minimum of 4-6 weeks may be required to assess whether a beneficial response has been achieved. The first dose syncope, tachycardia and weight gain are reported side effects of the drug.

**114(e)** Prozac (Fluoxetine HCL) is classified as an SSRI (Selective Serotonin Reuptake Inhibitor). It is indicated for the treatment of depression, bulimia nervosa, premenstrual dysphoric disorder and obsessive-compulsive disorder. It is available in oral solution, tablet and pulvules form. It is also available in weekly dosage form.

The recommended therapeutic dose of Fluoxetine is 20 mg to 60 mg per day. It should be given in the morning to avoid insomnia. Anxiety, nervousness, insomnia, irritability, mania, and weight loss are reported side effects of the drug.

**115(c)** Prozac (Fluoxetine HCL) is a potent and selective reuptake inhibitor of serotonin, but not of norepinephrine. It is available in 10 mg and 20 mg of oral strength. It should be carefully used with MAO inhibitors.

**116(e)** Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of Tyzeka (Telbivudine) alone or in combination with antiretrovirals.

Severe acute exacerbations of hepatitis B have been reported in patients who have discontinued anti-hepatitis B therapy, including Tyzeka. Hepatic function should be monitored closely with both clinical and laboratory follow-up for at least several months in patients who discontinue anti-hepatitis B therapy. If appropriate, resumption of anti-hepatitis B therapy may be warranted.

**117(c)** Effects of Coumadin therapy can be best monitored by regularly checking PT (Prothrombin time). Determination of anticoagulant plasma concentration, bleeding time and clotting times are not effective measures for monitoring Coumadin therapy. Heparin therapy should be monitored by regularly checking an activated partial thromboplastin time (aPTT).

**118(e)** It is advisable to do the PT determination prior to initiating the therapy and 24 hours after initiating the therapy. It should be done twice a week for one month once the maintenance dose has been established. After a one month period, it should be done weekly for the rest of the treatment.

**119(c)** PT and INR are two most important measurements for monitoring Coumadin therapy. Prothrombin time (PT) is often indicated by values in seconds compared to the control values of PT in seconds. But since tissue thromboplastin which is generally used

for determination of PT is less sensitive and identical, the World Health Organization introduced a standardized system for reporting PT values. In this system they use an INR (International Normalized Ratio), which is derived from the calibration of commercial thromboplastin reagents against international reference preparations. International reference preparations are made from human brain thromboplastins which are more sensitive and accurate.

**120(b)** Nitroglycerin, an organic nitrate, is a vasodilator which has effects on both arteries and veins. NitroMist (nitroglycerin) lingual aerosol is a metered-dose spray containing 230 metered sprays of nitroglycerin. This product delivers 400 mcg of nitroglycerin per actuation in the form of spray droplets on or under the tongue. NitroMist is indicated for acute relief of an attack or acute prophylaxis of angina pectoris due to coronary artery disease.

At the onset of an attack, one or two metered sprays should be administered on or under the tongue. A spray may be repeated approximately every 5 minutes as needed. No more than 3 metered (NOT 5 metered) sprays are recommended within a 15-minute period. If chest pain persists after a total of 3 sprays, prompt medical attention is recommended. NitroMist may be used prophylactically 5 to 10 minutes before engaging in activities that might precipitate an acute attack.

Headache, which may be severe and persistent, may occur immediately after nitroglycerin use. Postural hypotension, as manifest by vertigo, weakness, palpitation, flushing, drug rash and exfoliative dermatitis have been reported in patients receiving nitrate therapy.

**121(b)** Tofranil (Imipramine) is classified as a TCA. It is indicated for the treatment of depression and nocturnal enuresis.

Initially, an oral dose of 25 mg/day should be tried in children aged 6 and older. Medication should be given one hour before bedtime. If a satisfactory response does not occur within one week, a physician may increase the dose to 50 mg nightly in children under 12 years; children over 12 may receive up to 75 mg nightly. A daily dose greater than 75 mg does not enhance efficacy and tends to increase side effects.

Anticholinergic side effects, Neuroleptic Malignant Syndrome (NMS), tardive dyskinesia and seizure are reported side effects of Imipramine.

Desmopressin (Vasopressin) is a synthetic analog of endogenous human antidiuretic hormone. It is also indicated for the treatment of nocturnal enuresis. Vasopressin produces its effect via binding to  $V_2$  receptors present in a renal collecting duct. Vasopressin decreases the production of urine within 1 to 2 hours of administration and its duration of action lasts up to 12 to 16 hours.

The recommended initial dose of Desmopressin for patients age 6 years and older is 0.2 mg at bedtime. The dose may be titrated up to 0.6 mg to achieve the desired response. Fluid restriction should be observed, and fluid intake should be limited to a minimum from 1 hour before desmopressin administration, until the next morning, or at least 8 hours after administration.

Headache, edema related weight gain, water intoxication and hyponatremia are reported side effects of the drug.

**122(a)** Anafranil (Clomipramine) is classified as a TCA. It is indicated for the treatment of obsessive compulsive disorder.

Treatment with Anafranil should be initiated at a dosage of 25 mg daily and gradually increased, as tolerated, to approximately 100 mg during the first 2 weeks. During initial titration, Anafranil should be given in divided doses with meals to reduce gastrointestinal side effects. Thereafter, the

dosage may be increased gradually over the next several weeks, up to a maximum of 250 mg daily. After titration, the total daily dose may be given once daily at bedtime to minimize daytime sedation. Anticholinergic side effects, Neuroleptic Malignant Syndrome (NMS), tardive dyskinesia, hyperthermia and seizure are reported side effects of Clomipramine.

Luvox (Fluvoxamine) is classified as an SSRI. It is also indicated for the treatment of obsessive compulsive disorder (OCD). The recommended starting dose for Luvox tablets in adult patients is 50 mg, administered as a single daily dose at bedtime. In the controlled clinical trials establishing the effectiveness of Luvox tablets in OCD, patients were titrated within a dose range of 100 to 300 mg/day. Consequently, the dose should be increased in 50 mg increments every 4 to 7 days, as tolerated, until maximum therapeutic benefit is achieved, not to exceed 300 mg per day. It is advisable that a total daily dose of more than 100 mg should be given in two divided doses. If the doses are not equal, the larger dose should be given at bedtime.

It acts through inhibition of the serotonin uptake in the brain. Dizziness, yawning, impotence, dryness of mouth, nausea and vomiting are reported side effects of the drug.

Luvox CR is an extended-release capsule for oral administration that contains fluvoxamine maleate as an active ingredient. The recommended starting dose for Luvox CR capsules in adult patients is 100 mg once per day. Luvox CR capsules should be administered, with or without food, as a single daily dose at bedtime. Consequently, the dose should be increased in 50 mg increments every week, as tolerated, until maximum therapeutic benefit is achieved, not to exceed 300 mg per day.

**123(d)** The prescription for Micronase can be substituted by selecting DiaBeta, since the active ingredient of both Micronase and DiaBeta is Glyburide. Glyburide is classified as an oral sulfonylurea agent. It stimulates the release of insulin from the functioning beta-cells of the pancreas. It also increases the sensitivity of insulin to the peripheral site. It inhibits the glycogenolysis (breakdown of glycogen into glucose) and gluconeogenesis (synthesis of glucose from sources other than glycogen).

The usual starting dose of Diabeta as initial therapy is 2.5 to 5 mg daily, administered with breakfast or the first main meal. Those patients who may be more sensitive to hypoglycemic drugs should be started at 1.25 mg daily.

Hypoglycemia is the principal side effect of the drug. Disulfiram-like reactions generally occur with the use of alcohol with any of the oral sulfonylurea agents. Chlorpropamide is at the highest risk.

Sulfonylurea agents have high affinity for protein binding, and may displace the oral anticoagulant, NSAIDs and Digoxin from their protein binding sites. This will result in an increase serum concentration and toxicity of such drugs.

**124(c)** Elixir contains 5 to 40% alcohol. Diabinese (Chlorpropamide) is an oral sulfonylurea agent that produces disulfiram-like reactions when used with alcohol. The symptoms of disulfiram-like reactions are abdominal pain, abdominal cramps, nausea, vomiting, throbbing headaches, flushing and hypoglycemia.

**125(a)** Ziana (Clindamycin phosphate 1.2% and Tretinoin 0.025%) Gel, is an antibiotic and retinoid combination gel product with two active ingredients. Clindamycin phosphate is a water-soluble ester of the semi-synthetic antibiotic produced from the parent antibiotic

lincomycin. It is indicated for the topical treatment of acne vulgaris in patients 12 years or older. At bedtime, squeeze a pea-sized amount of medication onto one fingertip, dot onto the chin, cheeks, nose, and forehead, and then gently rub over the entire face.

Systemic absorption of Clindamycin has been demonstrated following topical use of Ziana. Diarrhea, bloody diarrhea, and colitis (including pseudomembranous colitis) have been reported with the use of topical Clindamycin. When significant diarrhea occurs, Ziana gel should be discontinued. It is a pregnancy category C drug.

**126(b)** Acarbose is the active ingredient of Precose.

**127(d)** Precose (Acarbose) is classified as an alpha-glucosidase inhibitor. It is a complex oligosaccharide which delays the absorption of ingested carbohydrates by inhibiting alpha-glucosidase enzymes, and may raise the blood glucose concentration slowly after eating meals. It does not increase the secretion of insulin. It inhibits pancreatic  $\alpha$  amylase and intestinal  $\alpha$  glucosidase enzymes.

Pancreatic  $\alpha$  amylase helps in digestion of complex starch to oligosaccharide, while intestinal  $\alpha$  glucosidase helps in digestion of oligosaccharide to glucose. Thus by inhibiting both these key enzymes, it may slow down raising blood glucose concentrations after eating meals.

It is indicated for the treatment of diabetes mellitus. The recommended therapeutic dose of the drug is 25 mg to 100 mg, three times daily at the start (with the first bite) of each main meal.

Abdominal pain, diarrhea, flatulence, liver toxicity and hypoglycemia (only when combined with other antidiabetic agents) are principal side effects of the drug.

**128(c)** Precose (Acarbose) should not cause hypoglycemia since it does not stimulate insulin secretion from beta cells of the pancreas, but lowers the rate of blood glucose formation. If hypoglycemia occurs, patients should be advised to take glucose (dextrose or I.V. glucose) since Precose may inhibit the breakdown of sucrose (table sugar) into glucose and fructose.

**129(a)** Precose (Acarbose) may elevate an AST level when given in a dose of 150 mg to 300 mg per day. An aspartate aminotransferase (AST) test measures the amount of this enzyme in the blood. AST is normally found in red blood cells, liver, heart, muscle tissue, pancreas, and kidneys. AST formerly was called serum glutamic oxaloacetic transaminase (SGOT).

Low levels of AST are normally found in the blood. When body tissue or an organ such as the heart or liver is diseased or damaged, additional AST is released into the bloodstream. The amount of AST in the blood is directly related to the extent of the tissue damage. After severe damage, AST levels rise in 6 to 10 hours and remain high for about 4 days. The normal range for an AST is 10 to 34 IU/L where IU/L stands for international units per liter.

The AST test may be done at the same time as a test for alanine aminotransferase, or ALT. The ratio of AST to ALT sometimes can help determine whether the liver or another organ has been damaged. Both ALT and AST levels can test for liver damage.

**130(c)** Hydroxocobalamin, the active ingredient in Cyanokit, is cobinamide dihydroxide dihydrogen phosphate (ester). It is the hydroxylated active form of vitamin B<sub>12</sub> and is a large molecule in which a trivalent cobalt ion is coordinated in four positions by a tetrapyrrole (or corrin) ring.

It is indicated for the treatment of known or suspected cyanide poisoning.

The starting dose of hydroxocobalamin for adults is 5 grams administered as an intravenous (IV) infusion over 15 minutes. Depending upon the severity of the poisoning and the clinical response, a second dose of 5 grams may be administered by IV infusion for a total dose of 10 g. The rate of infusion for the second dose may range from 15 minutes to two hours, as clinically indicated.

**131(b)** Pancrelipase enzyme preparations may help converting complex carbohydrates to glucose. Thus, it reduces the effect of Precose (Acarbose).

**132(c)** Zaroxolyn (Metolazone) is classified as a thiazide diuretic. Zaroxolyn is indicated for the treatment of salt and water retention including:

1. edema accompanying congestive heart failure;
2. edema accompanying renal diseases, including the nephrotic syndrome and states of diminished renal function.

Zaroxolyn is also indicated for the treatment of hypertension, alone or in combination with other antihypertensive drugs of a different class. Mykrox tablets, a more rapidly available form of Metolazone, are intended for the treatment of new patients with mild to moderate hypertension. A dose titration is necessary if Mykrox tablets are to be substituted for Zaroxolyn in the treatment of hypertension.

A patient should not interchange Zaroxolyn tablets and other formulations of Metolazone that share its slow and incomplete bioavailability and are not therapeutically equivalent at the same doses to Mykrox tablets, a more rapidly available and completely bioavailable Metolazone product. Formulations bioequivalent to Zaroxolyn and formulations bioequivalent to Mykrox should not be interchanged for one another.

The recommended dose of Zaroxolyn is 5 to 20 once daily for the treatment of an edema of cardiac or renal failure, and 2.5 to 5 mg once daily for the treatment of mild to moderate essential hypertension.

Hypokalemia, hypotension, electrolyte loss, hyperuricemia, hypomagnesemia, hyponatremia and hyperglycemia are reported side effects of the drug.

**133(e)** The active ingredient of Tonalate is Bitolterol mesylate. It is classified as a short acting Beta-2 receptors agonist. It is indicated for the treatment of asthma. For the treatment of an acute bronchospasm in adults and children older than 12 yr of age, the recommended dose is 2 inhalations by mouth at interval of 1 to 3 min, followed by third inhalation if necessary.

For the prevention of bronchospasm in adults and children older than 12 yr of age, the recommended dose is 2 inhalations every 8 hours, not to exceed 3 inhalations every 6 hours or 2 inhalations every 4 hours.

**134(a)** Aciphex (Rabeprazole) is classified as a proton pump inhibitor. It is indicated for the treatment of duodenal ulcers, erosive or ulcerative GERD, and Zollinger-Ellison syndrome. It is available in a delayed release tablet form. The recommended dose is 20 mg once daily for at least 4 to 8 weeks. Headache and diarrhea are two most common adverse effects reported with the drug.

**135(b)** Tonalate (Bitolterol mesylate) is a prodrug which is hydrolyzed by tissue esterase enzymes in lung tissues to, an active moiety, Colterol.

**136(e)** The principal advantage of Tonalate over the other bronchodilators is its prolonged duration of action compared to other short acting Beta-2 agonists. The duration of action of Tonalate is 5 hours in most of the patients,

while 8 or more hours have been reported in a few of the patients.

**137(b)** Because of its prolonged duration of action, the recommended dose of Tonalate would be 2 inhalations every 8 hours. The doses of Tonalate should never exceed 12 inhalations per day. The prescribed dose is too high.

**138(d)** Invega Sustenna is an extended-release injectable formulation of Paliperidone administered once-monthly for the acute and maintenance treatment of schizophrenia.

Recommended initiation of Invega Sustenna is with a dose of 234 mg on treatment day 1 and 156 mg one week later, both administered in the deltoid muscle. The recommended monthly maintenance dose is 117 mg; some patients may benefit from lower or higher maintenance doses within the recommended range of 39 to 234 mg based on individual patient tolerability and/or efficacy.

Following the second dose, monthly maintenance doses can be administered in either the deltoid or gluteal muscle. It is intended for intramuscular use only.

Orthostatic hypotension, leukopenia, agranulocytosis, weight gain, suicide, extrapyramidal symptoms, tardive dyskinesia and dystonia are reported side effects of the drug.

**139(c)** Human insulin is the least immunogenic in nature compared to endogenous insulin.

**140(c)** From looking at the chart, it can be said that Mehta's noon and bed time blood glucose concentrations exceed the normal blood glucose requirements. These can be prevented by increasing the morning and evening NPH insulin doses.

**141(e)** Age, sex and family history are risk factors associated with the development of diabetes.

**142(d)** Acova (Argatroban) is classified as a synthetic direct thrombin inhibitor. It is indicated as an anticoagulant for prophylaxis or treatment of thrombosis in heparin-induced thrombocytopenia. The recommended dose of Acova in adults is 2 mcg/kg/min administered as a continuous infusion.

Bleeding is the principal side effect of the drug. Abdominal pain, bradycardia, headache, chest pain and vomiting are also reported with the drug. Therapy should be monitored by regularly obtaining aPTT and INR.

**143(e)** Niacin is classified as an anti-hyperlipidemic agent. It is indicated for the treatment of elevated serum triglycerides levels. The recommended dose of the drug is 1 to 2 grams in two to three divided doses.

Liver toxicity, flushing and rhabdomyolysis are reported side effects of the drug. Flushing can be minimized by taking the drug with food, initiating therapy with a low dose, and pretreating patients with Aspirin or NSAIDs.

**144(b)** The principal adverse effect of Questran (Cholestyramine) is a constipation. It can be prevented by taking the drug with plenty of water, and using a stool softener or any laxative product. Colace (Docusate Na) is a stool softener. It helps relieving constipation induced by Questran.

**145(e)** Increased in blood glucose and uric acid concentration, and elevation of hepatic transaminase enzymes are major complications of Niacin therapy. Therefore, its use required great caution in patients suffering from diabetes, gout or an impaired liver function.

**146(a)** Paliperidone, the active ingredient in Invega extended-release tablets, is an anti-psychotic agent. It is indicated for the acute and maintenance treatment of schizophrenia. Invega uses osmotic pressure or OROS system to deliver Paliperidone at a controlled rate.

The delivery system, which resembles a capsule-shaped tablet in appearance, consists of an osmotically active trilayer core surrounded by a subcoat and semipermeable membrane. The trilayer core is composed of two drug layers containing the drug and excipients, and a push layer containing osmotically active components.

There are two precision laser-drilled orifices on the drug-layer dome of the tablet. Each tablet strength has a different colored water-dispersible overcoat and print markings. In an aqueous environment, such as the gastrointestinal tract, the water-dispersible color overcoat erodes quickly. Water then enters the tablet through the semipermeable membrane that controls the rate at which water enters the tablet core, which, in turn, determines the rate of drug delivery. The hydrophilic polymers of the core hydrate and swell, creating a gel containing Paliperidone that is then pushed out through the tablet orifices.

The recommended dose of Invega (Paliperidone) extended-release tablets for the treatment of schizophrenia is 6 mg once daily, administered in the morning. Dose increases above 6 mg/day should be made only after clinical reassessment and generally should occur at intervals of more than 5 days. When dose increases are indicated, increments of 3 mg/day are recommended. The maximum recommended dose is 12 mg/day.

Orthostatic hypotension, leukopenia, agranulocytosis, weight gain, suicide, extrapyramidal symptoms, tardive dyskinesia and dystonia are reported side effects of the drug.

**PROFILE-5**

**147(e)** The prolonged use of steroidal agents may increase the chances of eye infections, glaucoma, cataracts, and may elevate an intraocular pressure of eyes.

**148(e)** Docusate is an active ingredient of all three mentioned choices. Surfak is Docusate calcium, Dialose is Docusate potassium and Colace is Docusate sodium. It is classified as a stool softener. It is indicated for the treatment of chronic constipation. The recommended dose of the drug is 100 mg to 200 mg at bed time.

**149(e)** Zyrtec (Cetirizine), Allegra (Fexofenadine), Claritin (Loratadine) and Clarinex (Desloratadine) are nonsedative antihistamines. These agents (except Clarinex and Allegra) should be carefully prescribed with Erythromycin, Ketoconazole, Clarithromycin and Propulsid due to the risk of severe cardiac toxicity and tachycardia.

**150(e)** Hepsera (Adefovir) is classified as an antiviral agent. It is indicated for the treatment of chronic hepatitis B in adults. The recommended dose of drug is 10 mg once daily, without regard to meals. Severe nephrotoxicity, lactic acidosis and hepatomegaly with stenosis are reported with therapy. The patient's renal and liver functions should be closely monitored. Asthenia, headache, diarrhea, dyspepsia and flatulence are reported with Hepsera.

**151(c)** Advicor is a combination product of Niacin and Lovastatin. It is indicated for the treatment of hypercholesterolemia. The usual recommended dose is Niacin/Lovastatin 500 mg/20 mg once daily at bed time.

**152(a)** Erythromycin base is available under the brand names of E-mycin, Eryc, PCE

Dispertab and Robimycin. Erythromycin stearate is available under the brand names of Erythrocot, Erythrozone, Ilosone, MY-E, Wintrocin and Wyamycin-S. Erythromycin ethyl succinate is available under the brand names of Ery ped, Erythro and E.E.S.

It is classified under the macrolide group of antibiotics. It is indicated for the treatment of upper and lower respiratory tract infections, skin and structure infections, pertussis, diphtheria, nongonococcal urethritis, primary syphilis, rheumatic fever, bacterial endocarditis and Legionnaire's disease. The recommended dose of the drug is 250 to 500 mg three to four times a day depending on the infections.

Liver toxicity and pseudomembranous colitis are principal side effects of the drug.

**153(c)** Ilotycin (Erythromycin gluceptate) and Erythrocin (Erythromycin lactobionate) are parenterally available dosage forms of Erythromycin.

**154(e)** E.E.S. is indicated in the treatment of infections caused by susceptible strains of the designated organisms in the diseases listed below:

1. Upper respiratory tract infections of mild to moderate degree caused by *Streptococcus pyogenes*, *Streptococcus pneumoniae*, or *Haemophilus influenzae*.
2. Lower-respiratory tract infections of mild to moderate severity caused by *Streptococcus pneumoniae* or *Streptococcus pyogenes*.
3. Listeriosis caused by *Listeria monocytogenes*.
4. Pertussis (whooping cough) caused by *Bordetella pertussis*.

5. Respiratory tract infections due to *Mycoplasma pneumoniae*.

6. Skin and skin structure infections of mild to moderate severity caused by *Streptococcus pyogenes* or *Staphylococcus aureus* (resistant staphylococci may emerge during treatment).

7. Diphtheria: Infections due to *Corynebacterium diphtheriae*, as an adjunct to antitoxin, to prevent establishment of carriers and to eradicate the organism in carriers.

8. Erythrasma: In the treatment of infections due to *Corynebacterium minutissimum*.

9. Intestinal amebiasis caused by *Entamoeba histolytica* (oral erythromycins only). Extraenteric amebiasis requires treatment with other agents.

10. Acute pelvic inflammatory disease caused by *Neisseria gonorrhoeae*: As an alternative drug in treatment of acute pelvic inflammatory disease caused by *N. gonorrhoeae* in female patients with a history of sensitivity to penicillin. Patients should have a serologic test for syphilis before receiving erythromycin as treatment of gonorrhea and a follow-up serologic test for syphilis after 3 months.

11. Syphilis caused by *Treponema pallidum*: Erythromycin is an alternate choice of treatment for primary syphilis in patients allergic to the penicillins. In treatment of primary syphilis, spinal fluid examinations should be done before treatment and as part of follow-up after therapy.

12. Erythromycins are indicated for the treatment of the following infections caused by *Chlamydia trachomatis*: conjunctivitis of the newborn, pneumonia of infancy, and urogenital infections during pregnancy. When

tetracyclines are contraindicated or not tolerated, erythromycin is indicated for the treatment of uncomplicated urethral, endocervical, or rectal infections in adults due to *Chlamydia trachomatis*.

13. When tetracyclines are contraindicated or not tolerated, erythromycin is indicated for the treatment of nongonococcal urethritis caused by *Ureaplasma urealyticum*.

14. Legionnaires' disease caused by *Legionella pneumophila*. Although no controlled clinical efficacy studies have been conducted, in vitro and limited preliminary clinical data suggest that erythromycin may be effective in treating Legionnaires' disease.

**155(c)** Otitis media is inflammation of the middle ear, or a middle ear infection. It occurs in the area between the tympanic membrane and the inner ear, including a duct known as the eustachian tube. It is generally caused by *H. influenzae* and *S. Pneumoniae*.

**156(d)** Ilosone (Erythromycin estolate) is the preferred erythromycin to use in children because of its better absorption in the presence of food and better G.I. tolerance compared to other commercially available erythromycin salts. However, it is highly hepatotoxic and responsible for causing cholestatic hepatitis.

In medicine, cholestasis is a condition where bile cannot flow from the liver to the duodenum. The two basic distinctions are an obstructive type of cholestasis where there is a mechanical blockage in the duct system such as can occur from a gallstone or malignancy and metabolic types of cholestasis which are disturbances in bile formation that can occur because of genetic defects or acquired as a side effect of many medications.

**157(e)** Lovenox (Enoxaparin Na) is classified as a low molecular weight heparin. It is indicated for the prevention of deep vein thrombosis which leads to pulmonary embolism following hip or knee replacement surgery.

It should be carefully used by patients hypersensitive to heparin or by patients suffering from heparin induced thrombocytopenia.

The recommended dose of the drug is 30 mg subcutaneously every 12 hours. An elevation of the serum transaminase (AST) level is associated with Lovenox therapy. Since the elevation of the AST is one of the important factors for the diagnosis of myocardial infarction, liver disease and/or pulmonary embolism, results should be interpreted with caution.

**158(c)** Lozol (Indapamide) is classified as an antihypertensive drug with a diuretic property. It is indicated for the treatment of edema associated with CHF and hypertension. The recommended dose of the drug is 2.5 to 5 mg once daily. It is available in 1.25 mg and 2.5 mg of oral strength. Hypokalemia, fluid and electrolyte loss are the principal side effects of the drug. It should be avoided by patients suffering from hypokalemia.

Hypokalemia is defined when a serum potassium concentration drops below 3.5 mEq/L. A normal therapeutic range for the serum potassium concentration should be between 3.5 and 5 mEq/L.

**159(c)** Tussionex Pennkinetic contains Hydrocodone and Chlorpheniramine polistirex as the active ingredients. Hydrocodone is included in the formulation for its cough suppressant property whereas Chlorpheniramine is included for its antihistamine property.

**160(c)** The patch should be placed on a clean, dry area of skin or trunk of the body. The site selected should not be exposed to sunlight. It should never be applied to the breast. The application site should be rotated every week. The patch should not be applied to the waistline since tight clothing may rub off the system. The system should be applied immediately after opening.

**161(a)** The different salts of Theophylline have various percentages of Theophylline.

Theophylline Monohydrate	91%
Aminophylline Anhydrous	86%
Aminophylline Dihydrate	79%
Dyphylline	0%
Oxtriphylline	64%
Theophylline sodium Glycinate	49%

**162(a)** The normal therapeutic serum concentration of Theophylline should lie between 10 and 20 mcg/ml.

If the serum concentration of theophylline ranges between 20 and 25mcg/ml, a 10% reduction in subsequent dosing schedule may be required.

If it's between 25 and 30mcg/ml, then the patient should omit the next dose and a 25% reduction in subsequent doses may be required.

If the patient's theophylline serum concentration is more than 30mcg/ml, the patient should omit next 2 doses and a 50% reduction in subsequent doses may be required.

**163(b)** One of the active ingredients of Primidone is Phenobarbital, which may cause enzyme induction and increase the metabolism of Theophylline. Allopurinol, Cimetidine, Ciprofloxacin and Erythromycin have an enzyme inhibition property and may raise the serum concentration, and therefore toxicity of Theophylline.

**164(a)** Tonocard (Tocainide) is classified as an anti-arrhythmic agent. It is indicated for the treatment of documented ventricular arrhythmias, such as sustained ventricular tachycardia, that, in the judgment of the physician, are life-threatening. Because of the proarrhythmic effects of TONOCARD, as well as its potential for other serious adverse effects, its use to treat lesser arrhythmias is not recommended.

The recommended initial dosage is 400 mg every 8 hours. The usual adult dosage is between 1200 and 1800 mg/day in a three dose daily divided regimen. Doses beyond 2400 mg per day have been administered infrequently. Patients who tolerate the t.i.d. regimen may be tried on a twice daily regimen with careful monitoring.

Agranulocytosis, leukopenia, neutropenia, aplastic anemia, thrombocytopenia and pulmonary fibrosis are major side effects of the drug.

**165(c)** Synophylate (Theophylline sodium glycinate elixir) and Elixophyllin (Theophylline elixir) contain 10 to 40% alcohol and should be avoided with Antabuse (Disulfiram) to prevent disulfiram-like reactions.

Disulfiram produces sensitivity to alcohol which results in a highly unpleasant reaction when the patient under treatment ingests even small amounts of alcohol.

Disulfiram blocks the oxidation of alcohol at the acetaldehyde stage. During alcohol metabolism following disulfiram intake, the concentration of acetaldehyde occurring in the blood may be 5 to 10 times higher than that found during metabolism of the same amount of alcohol alone.

Accumulation of acetaldehyde in the blood produces a complex of highly unpleasant symptoms referred to hereinafter as the disulfiram-alcohol reaction. This reaction, which is proportional to the dosage of both

disulfiram and alcohol, will persist as long as alcohol is being metabolized.

Disulfiram should never be administered until the patient has abstained from alcohol for at least 12 hours.

In the first phase of treatment, a maximum of 500 mg daily is given in a single dose for one to two weeks. Although usually taken in the morning, disulfiram may be taken on retiring by patients who experience a sedative effect. Alternatively, to minimize, or eliminate, the sedative effect, dosage may be adjusted downward.

The average maintenance dose is 250 mg daily (range, 125 to 500 mg), it should not exceed 500 mg daily. Occasionally patients, while seemingly on adequate maintenance doses of disulfiram, report that they are able to drink alcoholic beverages with impunity and without any symptomatology. All appearances to the contrary, such patients must be presumed to be disposing of their tablets in some manner without actually taking them. Until such patients have been observed reliably taking their daily disulfiram tablets (preferably crushed and well mixed with liquid), it cannot be concluded that disulfiram is ineffective.

**166(c)** Lomotil is a combination product of Diphenoxylate and Atropine. Diphenoxylate is a controlled drug which helps controlling diarrhea by reducing the motility of the intestine. Atropine has anticholinergic side effects which may reduce the secretion of gastrointestinal tract and help controlling diarrhea. However, the inclusion of Atropine in this preparation is to prevent an abuse of Diphenoxylate. Atropine (0.025 mg), when it exceeds the recommended dose, produces anticholinergic side effects such as blurred vision, severe drowsiness, dryness of mouth, flushing of skin, nervousness, restlessness and unusual excitement. Thus, it discourages the deliberate overdose or abuse of Diphenoxylate.

**167(b)** Actiq (Fentanyl) is classified as a schedule II controlled drug. It is an opioid analgesic. It is available as transmucosal lozenges. It is indicated only for the management of breakthrough cancer pain in patients with malignancies who are already receiving and who are tolerant to around-the-clock opioid therapy for their underlying persistent cancer pain. Patients considered opioid tolerant are those who are taking around-the-clock medicine consisting of at least 60 mg of oral morphine daily, at least 25 mcg of transdermal fentanyl/hour, at least 30 mg of oral oxycodone daily, at least 8 mg oral hydromorphone daily or an equianalgesic dose of another opioid for a week or longer.

It is not indicated for use in opioid non-tolerant patients including those with only as needed (PRN) prior exposure. Life-threatening respiratory depression could occur at any dose in opioid non-tolerant patients. Deaths have occurred in opioid non-tolerant patients.

It is contraindicated in the management of acute or postoperative pain including headache/migraine.

When prescribing, a physician should not convert patients on a mcg per mcg basis to Actiq from other fentanyl products.

When dispensing, a pharmacist should NOT substitute an Actiq prescription for other fentanyl products. Substantial differences exist in the pharmacokinetic profile of Actiq compared to other fentanyl products that result in clinically important differences in the extent of absorption of fentanyl. As a result of these differences, the substitution of Actiq for any other fentanyl product may result in fatal overdose.

The initial dose of Actiq to treat episodes of breakthrough cancer pain is always 200 mcg. The Actiq unit should be consumed over 15 minutes. Patients should be prescribed an initial titration supply of six 200 mcg Actiq units, thus limiting the number of units in the home during titration. Patients should use up

all units before increasing to a higher dose to prevent confusion and possible overdose.

Life threatening hypoventilation, severe respiratory depression, skeletal muscle rigidity and apnea are reported side effects of the drug.

**168(e)** Asacol (Mesalamine) is indicated for the treatment of colitis. Its anti-inflammatory action is attributed to its ability to inhibit the cyclooxygenase enzyme and synthesis of prostaglandins.

The recommended dose of drug is 800 mg, three times a day. Abdominal pain, constipation, dyspepsia, flatulence, gas, G.I. bleeding, nausea and vomiting are reported side effects of Asacol.

It is available in a 400mg enteric coated tablet. The delayed release tablet is coated with Eudragit-S which dissolves at a pH of 7 or greater, and releases Mesalamine into the intestine. It should be carefully used by a patient with an impaired renal function. It should not be taken with milk or antacids since the alkaline pH may dissolve its enteric coating and release Mesalamine in the stomach instead of the intestine.

**169(c)** Asacol is available as a 400 mg tablet of Mesalamine and Pentasa is available as a 250 mg capsule of Mesalamine. Both need to be avoided by patients with hypersensitivity to Mesalamine.

**170(b)** Rowasa is a rectal suspension and suppository of Mesalamine. Since the patient is an unconscious, it is the best choice for the treatment of ulcerative colitis.

The usual dosage of Rowasa (Mesalamine) Rectal Suspension Enema in 60 ml units is one rectal instillation (4 grams) once a day, preferably at bedtime, and retained for approximately eight hours. While the effect of Rowasa (Mesalamine) Rectal Suspension Enema may be seen within 3 to 21 days, the

usual course of therapy would be from 3 to 6 weeks depending on symptoms and sigmoidoscopic findings. Patients should be instructed to shake the bottle well to make sure the suspension is homogeneous.

The active ingredient of Dipentum is Olsalazine, and of Azulfidine is Sulfasalazine. By the bacterial action in colon, both these drugs split into Sulfapyridine and Mesalamine. Pentasa, Asacol, Dipentum and Azulfidine are useful drugs by an oral route for the treatment of ulcerative colitis.

**171(a)** Zetia (Ezetimibe) is classified as an antihyperlipidemic agent. It is indicated for the treatment of hypercholesterolemia and homozygous sitosterolemia. It reduces low density lipoprotein (LDL), triglycerides (TG) and increases high density lipoprotein (HDL). It is also available in combination with Zocor (Simvastatin) under the brand name of Vytorin (Ezetimibe + Simvastatin).

The cholesterol content of the liver is derived predominantly from three sources. The liver can synthesize cholesterol, take up cholesterol from the blood from circulating lipoproteins, or take up cholesterol absorbed by the small intestine. Intestinal cholesterol is derived primarily from cholesterol secreted in the bile and from dietary cholesterol.

Ezetimibe does not inhibit cholesterol synthesis in the liver, or increase bile acid excretion. Instead, Ezetimibe localizes at the brush border of the small intestine and inhibits the absorption of cholesterol, leading to a decrease in the delivery of intestinal cholesterol to the liver. This causes a reduction of hepatic cholesterol stores and an increase in clearance of cholesterol from the blood.

The recommended dose of Zetia is 10 mg once a day with or without food. Diarrhea, abdominal pain, arthralgia and sinusitis are reported side effects of the drug.

**172(e)** Trovan (Trovafloracin/Alatrofloracin) is classified as the fluoroquinolone group of anti-infective agent. It is indicated for the treatment of skin and skin structure infections, nosocomial pneumonia, community-acquired pneumonia and gynecologic and pelvic inflammatory infections. The recommended dose of Trovan is 300 mg via I.V. followed by 200 mg an oral single dose for 7 to 14 days. Liver toxicity is the principal side effect of the drug. It may lead to liver transplantation or even a death.

**173(b)** Axert (Almotriptan) is classified as a vascular 5-HT receptor agonist. It is indicated for the treatment of migraines. It is available in a tablet dosage form. Tablets are available in 6.25 mg and 12.5 mg of oral strengths. At the onset of attack, patients may take 6.25 mg to 12.5 mg by mouth and then may repeat every 2 hours if needed (not to exceed a daily dose of more than 25 mg).

The recommended starting dose of Axert in patients with hepatic or renal impairment is 6.25 mg. The maximum daily dose should not exceed 12.5 mg over a 24-hour period.

Chest, jaw or neck tightness, seizure, corneal opacities, paresthesia, warm/cold sensation, asthenia, dizziness and somnolence are reported side effects of the drug.

**174(c)** Protonix (Pantoprazole) is classified as a proton pump inhibitor. It is indicated for the short-term treatment of erosive esophagitis associated with Gastroesophageal Reflux Disease (GERD), for maintenance of healing of erosive esophagitis and reduction in relapse rates of daytime and nighttime heartburn symptoms in adult patients with GERD and pathological hypersecretory conditions including Zollinger-Ellison Syndrome.

It is available in a delayed release tablet, a delayed release oral suspension and injection dosage forms. The recommended oral

dose of the drug is 20 to 40 mg once a day, for at least 4 to 8 weeks. The IV infusion dose is 40 mg once a day, for 7 to 10 days. Headache and diarrhea are the most common adverse effects associated with the drug.

**175(a)** Plavix (Clopidogrel) is classified as a platelets aggregation inhibitor. It is indicated for the reduction of atherosclerotic events in patients with atherosclerosis. Each tablet for an oral administration contains 75 mg or 300 mg Clopidogrel.

The recommended daily dose of Plavix is 75 mg by mouth once a day with or without food. It shows low incidence of G.I. hemorrhage and ulcers compared to other platelets aggregation inhibitors. Bleeding is the principal side effect of the drug.

**176(e)** Zofran (Ondansetron), Kytril (Granisetron) and Anzemet (Dolasetron) are 5-HT<sub>3</sub> receptor antagonists. All these drugs are indicated for the prevention of nausea and vomiting associated with emetogenic cancer therapy.

The recommended daily dose of Zofran is 4 to 8 mg, Kytril is 2 mg, and Anzemet is 100 mg.

Liver enzyme elevation (AST and ALT), hypotension, headache, dizziness, fatigue, malaise, and abdominal pain are reported side effects of 5-HT<sub>3</sub> receptor antagonists.

**177(d)** Avapro (Irbesartan) is classified as an angiotensin type II receptor antagonist. It is indicated for the treatment of hypertension. It is also indicated for the treatment of diabetic nephropathy with an elevated serum creatinine and proteinuria (> 300 mg/day) in patients with type 2 diabetes and hypertension. In this population, Avapro reduces the rate of progression of nephropathy as measured by the occurrence of doubling of serum creatinine or end-stage renal disease.

It is available for oral administration in unscored tablets containing 75 mg, 150 mg, or 300 mg of irbesartan.

The recommended initial dose of Avapro is 150 mg once daily. Patients requiring further reduction in blood pressure should be titrated to 300 mg once daily. In Type 2 diabetic patients with nephropathy, the recommended target maintenance dose is 300 mg once daily. A lower initial dose of Avapro (Irbesartan) (75 mg) is recommended in patients with depletion of intravascular volume or salt (eg, patients treated vigorously with diuretics or on hemodialysis).

Dry hacking cough is not associated with angiotensin type II receptor antagonists. It should be carefully prescribed to pregnant women due to its abortifacient property.

Dizziness, headache, nausea, vomiting, hyperkalemia and hypotension are reported side effects of the drug.

## PROFILE-6

**178(e)** Pamelor (Nortriptyline) is classified as an antidepressant drug. It is indicated for the treatment of depression. It is available in capsule and oral solution (dosage forms). Each capsule for an oral administration contains 10mg, 25mg, 50mg or 75mg Nortriptyline. Each 5 cc of its oral solution contains 10mg Nortriptyline.

The recommended therapeutic dose of the drug is 25 mg three or four times daily. Dosage should begin at a low level and be increased as required. As an alternate regimen, the total daily dosage may be given once a day. When doses above 100 mg daily are administered, plasma levels of nortriptyline should be monitored and maintained in the optimum range of 50 to 150 ng/mL. Doses above 150 mg/day are not recommended.

Sedation and anticholinergic side effects are frequently reported side effects of Nortriptyline therapy.

**179(a)** Symmetrel (Amantadine) is classified as an antiviral agent. It is available in tablets and syrup. Each tablet intended for oral administration contains 100 mg amantadine hydrochloride. Each 5 cc of syrup contains 50 mg of amantadine hydrochloride.

It is indicated for the prophylaxis and treatment of signs and symptoms of infection caused by various strains of influenza A virus. It is also indicated in the treatment of parkinsonism and drug-induced extrapyramidal reactions. It helps in the treatment of Parkinson's by releasing dopamine in the nerve terminal.

The usual dose of Symmetrel is 100 mg twice a day when used alone. Symmetrel has an onset of action usually within 48 hours.

The initial dose of Symmetrel is 100 mg daily for patients with serious associated medical illnesses or who are receiving high doses of other antiparkinson drugs. After one to several weeks at 100 mg once daily, the dose may be increased to 100 mg twice daily, if necessary.

Occasionally, patients whose responses are not optimal with Symmetrel at 200 mg daily may benefit from an increase up to 400 mg daily in divided doses. However, such patients should be supervised closely by their physicians.

The dose of Symmetrel (Amantadine) may need reduction in patients with congestive heart failure, peripheral edema, orthostatic hypotension, or impaired renal function

Dry mouth, increased sweating, hypotension, dystonia and somnolence are reported side effects of the drug.

**180(d)** Each Lialda delayed release tablet for oral administration contains 1.2 gram Mesalamine (5-aminosalicylic acid or 5-ASA), an anti-inflammatory agent. The Lialda tablet uses an MMX Multi Matrix System, the core of hydrophilic and lipophilic excipients.

The MMX core is coated with a gastro-resistant film of methacrylic acid copolymers, Type A and Type B, which delays Mesalamine release until exposure to a pH of 6 and 7, respectively. Upon disintegration of the coating, the core matrix forms a hydrogel and provides extended release of Mesalamine across the pH range of 6.8 to 7.2.

It is indicated for the induction of remission in patients with active, mild to moderate ulcerative colitis. The recommended dosage for the induction of remission in adult patients with active, mild to moderate ulcerative colitis is two to four 1.2 gm tablets to be taken once daily with a meal for a total daily dose of 2.4 g or 4.8 g. Headache, flatulence, pruritus and somnolence are reported side effects of the drug.

**181(b)** Talwin NX (Pentazocine + Naloxone) is classified as an opioid analgesic. It is indicated for the treatment of mild to moderate pain. The active ingredients of Talwin NX are Pentazocine HCl and Naloxone HCl. Each oral tablet for an oral administration contains 50 mg Pentazocine and 0.5 mg Naloxone HCl.

It should never be given by I.V. or I.M. routes since administration by these routes may produce pulmonary emboli, vascular occlusion, ulceration and acute narcotic withdrawal symptoms. It should only be given orally. The oral dose of the drug does not produce such reactions since the amount of Naloxone in the formulation is generally not sufficient to produce an opioid antagonist action.

The usual initial adult dose is 1 tablet every three or four hours. This may be increased to 2 tablets when needed. Total daily dosage should not exceed 12 tablets.

It is also available in combination with Aspirin under the brand name of Talwin Compound (Pentazocine + Aspirin).

Respiratory depression, constipation, abdominal cramps, seizure and nausea are reported side effects of the drug.

**182(c)** Parlodel (Bromocriptine) and Permax (Pergolide mesylate) are classified as dopamine receptor agonists.

It is indicated for the treatment of dysfunctions associated with hyperprolactinemia including amenorrhea with or without galactorrhea, infertility or hypogonadism. It is also indicated in the treatment of acromegaly. Parlodel SnapTabs or capsules are indicated in the treatment of the signs and symptoms of idiopathic or postencephalitic Parkinson's disease.

For the treatment of Parkinsonism, Parlodel therapy is to initiate treatment at a low dosage and, on an individual basis, increase the daily dosage slowly until a maximum therapeutic response is achieved. The dosage of levodopa during this introductory period should be maintained, if possible. The initial dose of Parlodel is ½ of a 2½ mg SnapTabs tablet twice daily with meals. Assessments are advised at 2-week intervals during dosage titration to ensure that the lowest dosage producing an optimal therapeutic response is not exceeded. If necessary, the dosage may be increased every 14-28 days by 2½ mg/day with meals.

It may produce “disulfiram-like” reactions when taken with alcohol.

A prolonged treatment with Bromocriptine may produce pleural infusion, thickening of pleura and pulmonary infiltrates. It is recommended to monitor the pulmonary function from time to time when the patient is on this drug for a long period of time.

Pergolide is a semi-synthetic ergot derivative. It is 10 times more potent than Bromocriptine. The recommended dose of Pergolide for the treatment of Parkinsonism is 0.1 to 0.25 mg per day. Orthostatic hypotension, nausea, vomiting, abdominal pain, dystonia and confusion are reported side effects of Pergolide.

Mirapex (Pramipexole) is classified as a non-ergot anti-Parkinson's agent. Unlike

Bromocriptine and Pergolide, it is a complete agonist of dopamine receptors and has a higher affinity for dopamine D3 receptors.

Mirapex tablets, for oral administration, contain 0.125 mg, 0.25 mg, 0.5 mg, 1 mg, or 1.5 mg of pramipexole dihydrochloride. It is also indicated for the treatment of moderate-to-severe primary Restless Legs Syndrome (RLS).

The initial dose of Mirapex for the treatment of Parkinsonism is 0.125 mg to 1.5 mg three times a day. For the treatment of restless legs syndrome, the recommended starting dose of Mirapex tablets is 0.125 mg taken once daily 2-3 hours before bedtime. For patients requiring additional symptomatic relief, the dose may be increased every 4-7 days

Postural hypotension, syncope, dyskinesia, extrapyramidal symptoms and hallucinations are reported side effects of the drug.

**183(e)** The initial dose of Parlodel has been associated with postural hypotension. Patients should be advised to lie down after taking the drug. The pulmonary function should be monitored from time to time when the drug is used for more than 6 months. Parlodel (Bromocriptine) has the longest duration of action compared to other drugs used for the treatment of Parkinsonism.

**184(c)** The maximum recommended dose for Permax is 3 mg/day. Doses more than 3 mg per day may increase the risk of cardiac arrhythmia.

**185(b)** Lialda (Mesalamine) is indicated for the induction of remission in patients with active, mild to moderate ulcerative colitis. The recommended dosage for the induction of remission in adult patients with active, mild to moderate ulcerative colitis is two to four 1.2 gm tablets to be taken once daily with a

meal for a total daily dose of 2.4 g or 4.8 g. Headache, flatulence, pruritus and somnolence are reported side effects of the drug.

**186(b)** Inderal (Propranolol) is classified as a beta-blocker. It is indicated for the treatment of hypertension and action tremor associated with Parkinson's since it has a high lipid solubility which may help it to cross the Blood Brain Barrier (BBB). Bradycardia and hypotension are principal side effects of the drug.

**187(d)** For the treatment of resting tremor, anticholinergic agents are more preferable. Cogentin (Benztropine) is an anticholinergic agent. Glaucoma, urinary retention, dryness of mouth, constipation and increased sweating are reported side effects of anticholinergic agents.

**188(d)** Levodopa is a dopamine precursor. Dopamine receptors are peripherally and centrally located in the body. Dopa decarboxylase enzyme removes the -COOH group from dopa and converts dopa to dopamine. Peripherally, when dopa converts to dopamine, it may produce nausea, vomiting, tachycardia and hypotension. To prevent this and increase the bioavailability of Levodopa, Carbidopa is used.

Carbidopa is a dopa decarboxylase inhibitor. It reduces the dose of Levodopa by 75% by preventing the peripheral conversion of dopa to dopamine. Carbidopa cannot enter the brain, and so conversion of Levodopa to dopamine easily occurs in the presence of available dopa decarboxylase enzymes in the brain.

**189(c)** Alrex or Lotemax (Loteprednol etabonate) is classified as corticosteroidal agent. It is indicated for the treatment of postoperative inflammation and steroid responsive diseases.

The recommended dose is 1 to 2 drops into the affected eye(s) four times daily. Blurred vision, discharge from eyes, secondary ocular infections, burning, stinging and dry eyes are reported side effects of the drug.

**190(e)** Flector (Diclofenac epolamine) is a non-opioid analgesic indicated for the topical treatment of acute pain due to minor strains, sprains, and contusions. Each adhesive patch contains 180 mg of Diclofenac epolamine in an aqueous base.

The recommended dose of Flector patch is one patch to the most painful area twice a day. The most common adverse events associated with Flector patch treatment were skin reactions at the site of treatment.

**191(c)** Dopar (Levodopa) must be discontinued at least 8 hours before initiating therapy with Carbidopa/Levodopa. Dopar should be discontinued in the evening and Levodopa/Carbidopa therapy should be initiated the next morning.

The pharmacist and prescribing physician should keep in mind that an extended release tablet of Sinemet is less bioavailable (25 to 30%) compared to an immediate release tablet of Sinemet since the former provides more time for the peripheral conversion of Levodopa to dopamine than the latter. Therefore, for achieving the same therapeutic effect more doses of Sinemet CR are needed than Sinemet IR.

**192(e)** Basaljel is an antacid. Antacids may increase the absorption of Levodopa and its toxicity. Concurrent use may not be recommended.

Reglan (Metoclopramide) may increase the gastric emptying of Levodopa by stimulating the motility of the intestine and reduce the rate and extent of absorption of Levodopa from the intestine.

Molindone may block the dopamine receptors in the brain and reduce the effect of Levodopa.

A protein restricted diet is more helpful in the treatment of Parkinson's, since breakdown products of protein, generally known as amino acids, compete with Levodopa to enter the brain and make Levodopa less bioavailable to the brain.

An MAO-B inhibitor (Selegiline) may enhance the effect of Levodopa by inhibiting the metabolism of dopamine. Patients need to be monitored for dyskinesia, nausea and orthostatic hypotension.

Phenytol may increase the metabolism and reduce the therapeutic effects of Levodopa.

**193(b)** Bromocriptine has the longest duration of action (about 50 hours of half-life) among all the Antiparkinson's drugs.

**194(a)** Eldepryl (Selegiline) is classified as a selective MAO<sub>B</sub> inhibitor. It is indicated for the treatment of Parkinson's. At a therapeutic dose, Selegiline inhibits the metabolism of dopamine through its MAO-B inhibition. It is available in capsules. Each capsule for an oral administration contains 5 mg of Selegiline HCl. It is also available as an orally disintegrating tablet form under the brand name of Zelapar. Each orally disintegrating tablet contains 1.25 mg of Selegiline HCl.

Selegiline frequently loses its MAO selectivity at doses higher than 30 to 40 mg per day, and may start to inhibit an MAO-A as well. The recommended regimen for the administration of Eldepryl is 10 mg per day administered as divided doses of 5 mg each taken at breakfast and lunch.

Nausea, dizziness, lightheadedness, fainting and abdominal pain are reported side effects of the drug.

**195(e)** A severe hypertensive crisis is observed when Demerol (Meperidine), Prozac (Fluoxetine) or Tyramine is concurrently prescribed with Selegiline. The concurrent use of these medications with Selegiline is strictly prohibited.

**196(a)** Pennsaid topical solution is a clear, colorless to faintly pink-orange solution for topical application. It contains 1.5% w/w Diclofenac sodium. Each 1 mL of topical solution contains 16.05 mg of Diclofenac sodium.

It is a nonsteroidal anti-inflammatory drug (NSAID) indicated for the treatment of signs and symptoms of osteoarthritis of the knee(s).

For the relief of the signs and symptoms of osteoarthritis of the knee(s), the recommended dose is 40 drops per knee, 4 times a day.

Dry skin, contact dermatitis characterized by skin erythema and induration, contact dermatitis with vesicles and pruritus are most commonly reported side effects of the drug.

**197(a)** Symmetrel (Amantadine) is an antiviral drug indicated for the treatment of Parkinsonism. Amantadine produces rapid clinical effects compared to other Antiparkinson's drugs that would require a month or more to show their full therapeutic effects. Therefore it is a better choice for the treatment of Parkinson's in newly diagnosed patients. The recommended initial dose of Amantadine is 100 mg/day. The therapy with Amantadine should be withdrawn once the patient is established on other Antiparkinson's drugs.

**198(e)** Atenolol, Acebutolol, Metoprolol and Betaxolol are cardioselective beta-blockers. Nadolol is not a cardioselective beta-blocker.

Beta blockers may mask the symptoms of hypoglycemia such as tachycardia and therefore their use in diabetic patients requires caution. They may also block beta-2 receptors on higher doses and therefore they should be carefully prescribed to patients suffering from asthma.

**199(e)** Deltasone (Prednisone) is classified as an oral glucocorticosteroidal agent. It is not available in an aerosol form. It is indicated for the treatment of asthma, rheumatic and endocrine disorders, Crohn's disease and Multiple sclerosis. It is available in 2.5, 5, 10, 20, 50 mg of oral strengths. It is generally given in tapering doses to avoid adrenocorticoid suppression.

The initial dosage of Deltasone (Prednisone) tablets may vary from 5 mg to 60 mg of Prednisone per day depending on the specific disease entity being treated. In situations of less severity lower doses will generally suffice while in selected patients higher initial doses may be required. The initial dosage should be maintained or adjusted until a satisfactory response is noted. If after a reasonable period of time there is a lack of satisfactory clinical response, Deltasone should be discontinued and the patient transferred to other appropriate therapy.

Hypertension, sodium and fluid retention, metabolic alkalosis, anaphylactoid reactions and osteoporosis are reported side effects of the drug. Here is the summary of the potency of steroidal agents in descending order.

Betamethasone > Dexamethasone > Methylprednisolone > Triamcinolone > Prednisolone > Prednisone > Hydrocortisone > Cortisone

**200(d)** NovoLog (insulin aspart [rDNA origin] injection) is rapid-acting human insulin analog used to lower blood glucose. It has an earlier onset of action than regular human

insulin. The dosage of NovoLog must be individualized. NovoLog given by subcutaneous injection should generally be used in regimens with intermediate or long-acting insulin.

It should be administered by subcutaneous injection in the abdominal region, buttocks, thigh, or upper arm. Because NovoLog has a more rapid onset and a shorter duration of activity than human regular insulin, it should be injected immediately (within 5-10 minutes) before a meal. Injection sites should be rotated within the same region to reduce the risk of lipodystrophy.

It can be administered intravenously under medical supervision for glycemic control with close monitoring of blood glucose and potassium levels to avoid hypoglycemia and hypokalemia.

Hypoglycemia, weight gain, edema and lipodystrophy are commonly reported side effects of NovoLog.

**201(c)** The active ingredient found in Neoloid is a castor oil. It is classified as a stimulant laxative. It is indicated for the treatment of constipation. The recommended dose of the castor oil is 15 to 60 ml by mouth daily.

**202(e)** Atrovent (Ipratropium) is classified as an anticholinergic or an atropine-like drug. During allergic attacks, allergens may bind to IgE antibodies on the surface of the mast cells. This will result in the release of vasoactive and chemotrophic substances. These substances, in addition, release the high energetic oxygen radicals which damage mucosa and produce inflammation of the bronchioles. An inflammation of bronchiole tissues leads to airway bronchospasm which precipitates out acute attacks of asthma. By blocking acetylcholine receptors, Atrovent dilates smooth muscles of the bronchioles and helps controlling the symptoms of asthma.

The recommended dose of Atrovent is 2 puffs four times a day. Dryness of mouth, urinary retention, increased intraocular pressure of eyes and constipation are reported side effects of the drug.

**203(e)** Brethaire, Bricanyl and Brethine are commercial brand names for Terbutaline. It is classified as a Beta-2 receptor agonist. It is indicated for the prevention and reversal of bronchospasm in patients 12 years of age and older with asthma and reversible bronchospasm associated with bronchitis and emphysema.. It also prevents the contraction of uterine muscles in labor women by relaxing their uterine muscles through the stimulation of beta-2 receptors. Therefore, it is also known as a tocolytic agent. However, Terbutaline sulfate has not been approved and should not be used for tocolysis. Serious adverse reactions may occur after administration of Terbutaline sulfate to women in labor. In the mother, these include increased heart rate, transient hyperglycemia, hypokalemia, cardiac arrhythmias, pulmonary edema, and myocardial ischemia. Increased fetal heart rate and neonatal hypoglycemia may occur as a result of maternal administration.

The usual subcutaneous dose of terbutaline sulfate injection is 0.25 mg injected into the lateral deltoid area. If significant clinical improvement does not occur within 15 to 30 minutes, a second dose of 0.25 mg may be administered. If the patient then fails to respond within another 15 to 30 minutes, other therapeutic measures should be considered. The total dose within 4 hours should not exceed 0.5 mg. Dizziness, chest tightness, cough and nausea are reported side effects of the drug.

**204(e)** Inspra (Eplerenone) is classified as a selective aldosterone receptor antagonist. It blocks the binding of aldosterone to an aldosterone receptor.

Each tablet for an oral administration contains 25 mg or 50 mg of Eplerenone. Serum potassium levels should be measured before initiating Inspra therapy, and Inspra should not be prescribed if serum potassium is  $> 5.5$  mEq/L. It is indicated for the treatment of hypertension. It is also indicated to improve survival of stable patients with left ventricular (LV) systolic dysfunction (ejection fraction 40%) and clinical evidence of congestive heart failure (CHF) after an acute myocardial infarction (MI).

Treatment should be initiated at 25 mg once daily and titrated to the recommended dose of 50 mg once daily, preferably within 4 weeks as tolerated by the patient. Inspra may be administered with or without food. Hyperkalemia and dizziness are reported side effects of the drug.

**205(d)** Amrix (Cyclobenzaprine HCl Extended-Release capsule) is a skeletal muscle relaxant which relieves muscle spasm of local origin without interfering with muscle function. Amrix extended-release capsules for oral administration are supplied in 15 and 30 mg strengths.

It is indicated as an adjunct to rest and physical therapy for relief of muscle spasm associated with acute, painful musculoskeletal conditions. Improvement is manifested by relief of muscle spasm and its associated signs and symptoms, namely, pain, tenderness, and limitation of motion.

It should be used only for short periods (up to two or three weeks) because adequate evidence of effectiveness for more prolonged use is not available and because muscle spasm associated with acute, painful musculoskeletal conditions is generally of short duration and specific therapy for longer periods is seldom warranted. A pharmacist should question the duration of the therapy to a prescribing physician.

The recommended adult dose for most patients is one Amrix (Cyclobenzaprine Hydrochloride Extended-Release capsules) 15 mg capsule taken once daily. Some patients may require up to 30 mg/day, given as one Amrix 30 mg capsule taken once daily or as two (2) Amrix 15 mg capsules taken once daily.

It is recommended that doses be taken at approximately the same time each day. Use of Amrix for periods longer than two or three weeks is not recommended.

Dry mouth, dizziness, somnolence, drowsiness, fatigue and constipation are commonly reported side effects of the drug.

**206(e)** Spirometry (meaning the measuring of breath) is the most common of the Pulmonary Function Tests (PFTs), measuring lung function, specifically the measurement of the amount (volume) and/or speed (flow) of air that can be inhaled and exhaled. The spirometry test is performed using a device called a spirometer, which comes in several different varieties. Most spirometers display the graphs, called spirogram.

The most common parameters measured in spirometry are Vital capacity (VC), Forced vital capacity (FVC), Forced expiratory volume (FEV) at timed intervals of 0.5, 1.0 (FEV<sub>1</sub>), 2.0, and 3.0 seconds, Forced expiratory flow 25–75% (FEF<sub>25–75</sub>) and Maximal voluntary ventilation (MVV), also known as Maximum breathing capacity.

1. Forced Vital Capacity (FVC) is the volume of air that can forcibly be blown out after full inspiration, measured in liters.

2. FEV<sub>1</sub> is the maximal amount of air one can forcefully exhale in one second. It is then converted to a percentage of normal. For example, if a patient's FEV<sub>1</sub> may be 80% of predicted based on your height, weight, and race. It is a marker for the degree of obstruction with the patient's asthma:

- a. FEV<sub>1</sub> greater 80% of predicted: Normal
- b. FEV<sub>1</sub> 60% to 79% of predicted: Mild obstruction
- c. FEV<sub>1</sub> 40% to 59% of predicted: Moderate obstruction
- d. FEV<sub>1</sub> less than 40% of predicted: Severe obstruction

It is automatically calculated during spirometry or pulmonary function testing. It is calculated using a spirometer.

3. FEV<sub>1</sub>/FVC (FEV<sub>1</sub>%) is the ratio of FEV<sub>1</sub> to FVC. In healthy adults this should be approximately 75–80%. In obstructive diseases (asthma, COPD, chronic bronchitis, emphysema) FEV<sub>1</sub> is diminished because of increased airway resistance to expiratory flow and FVC usually remain normal and therefore, the ratio FEV<sub>1</sub>/FVC is decreased. This generates a reduced value (<80%, often ~45%).

In restrictive diseases (such as pulmonary fibrosis), however, the FEV<sub>1</sub> and FVC are both reduced proportionally and the value may be normal or even increased as a result of decreased lung compliance.

4. The forced expiratory flow (FEF) is a measure of the average flow over specified portions of the spirometry curve. The spirometry maneuver requires the subject to inhale to total lung capacity and then exhale forcefully to residual volume. The usual intervals are 25%, 50% and 75% (FEF<sub>25</sub>, FEF<sub>50</sub> and FEF<sub>75</sub>).

5. Peak Expiratory Flow (PEF) is the maximal flow (or speed) achieved during the maximally forced expiration initiated at full inspiration, measured in liters per minute.

6. Total Lung Capacity (TLC) is the maximum volume of air present in the lungs.