Self Study MCQs
Updated for Sept 2015

Chapter 5: Dementia

1) When prescribing donepezil to treat Alzheimer's disease, all of the following statements are correct **EXCEPT**:

    a) Starting dose is 5mg daily
    b) Initial dose should be maintained for 4 weeks before any dose increase is considered
    c) Rivastigmine and galantamine are believed to be more effective than donepezil
    d) Weight loss is a concern
    e) Donepezil is associated with GI adverse effects and headaches

Answer: C. All of the cholinesterase inhibitors are believed to be equally effective for treating mild to moderate Alzheimer's disease (page 59, CTC 7th edn). Nausea, vomiting and anorexia are common adverse effects, frequently leading to weight loss. Initial dosing is 5mg daily and clinicians can increase the dose to 10mg daily after 4 weeks.

2) Which of the following drugs is **NOT** likely to have a drug interaction with a cholinesterase inhibitor such as donepezil or galantamine?

    a) Oxybutynin (for urinary incontinence)
    b) Carbamazepine
    c) Ramipril
    d) Timolol
    e) Benztropine

Answer: C. ACE Inhibitors such as ramipril do not interact with cholinesterase inhibitors. Drugs with anticholinergic activity such as oxybutynin or benztropine, can antagonize the effect of cholinesterase inhibitors (Table 2, page 65 of Therapeutics Choices). Drugs commonly known to induce P450 CYP 3A4 or CYP 2D6 enzymes, such as carbamazepine or phenytoin, will decrease the effectiveness of cholinesterase inhibitors. Beta blockers such as timolol or metoprolol can have additive bradycardic effects.

Chapter 12: Drug Withdrawal Syndromes

3) Choose the **CORRECT** statement about the treatment of opioid withdrawal:

    a) Methadone discontinuation should be slowly tapered over many weeks
    b) Clonidine is an effective treatment against the muscle aches and cravings
    c) Methadone has a half-life of about 2 to 4 hours
    d) Naltrexone has no effect on the euphoric effects of opioids
    e) Clonidine is used as a long-term therapy

Answer: A. Any discontinuation of methadone should be slowly tapered since drug craving can persist for several months. Methadone can be given once a day because it has a half-life of about 30 hours (page 166, CTC 7th edn). Clonidine is only used for 7-12 days to blunt the withdrawal symptoms in acute detoxification but it has no effect on the muscle aches and cravings. Naltrexone is a long-acting opioid antagonist used to block agonist effects such as euphoria.

Chapter 17/18: Headaches

4) Which of the following migraine prophylaxis medications should **NOT** be prescribed for an asthmatic child?

   a) Flunarizine
   b) Propranolol
   c) Amitriptyline
   d) Pizotifen

Answer: B. All of the above agents are used for migraine prophylaxis in children but, since nonselective beta-blockers can cause bronchospasm, propranolol should be avoided in this patient (page 232, CTC 7th edn)

5) JM is a 15-year old patient on eletriptan for migraine headaches. Which of the following could safely be given to this patient?

   a) Ibuprofen
   b) Escitalopram
   c) Clarithromycin
   d) Ketoconazole
   e) Sumatriptan

Answer: A. This patient could take ibuprofen safely. Escitalopram is an SSRI, and triptans should be used with caution with these agents as well, there are concerns about increased suicidality when using an antidepressant in children. Eletriptan is contraindicated within 72 hours of CYP3A4 inhibitors (clarithromycin and ketoconazole). One triptan should not be taken within 24 hours of another triptan.

Chapter 21: Neuropathic Pain

6) When treating neuropathic pain, which of the following is **TRUE**:

   a) First-line agents are amitriptyline, gabapentin and pregabalin
   b) Artificial saliva mouth spray cannot be given with amitriptyline if the patient experiences dry mouth
   c) Gabapentin has no significant interactions with common over the counter medications like ibuprofen, cough and cold remedies or antacids
   d) A stool softener should not be given with opioids and amitriptyline
   e) Codeine is a good choice for treating severe neuropathic pain

Answer: A. TCAs (amitriptyline) cause dry mouth due to their anticholinergic effects and artificial saliva is a good option. Both opioids and TCAs cause constipation and, since these agents will be used on a regular basis, a stool softener or other laxative should be given as a preventive measure (page 262 CTC, 7th edn). Amitriptyline is standard therapy for neuropathic pain, but gabapentin and pregabalin are alternative first-line agents. The bioavailability of gabapentin is reduced by OTC antacids; since this agent causes GI upset, concomitant use of these agents should be avoided. Codeine is a poor choice for treatment of severe pain because conversion of codeine to morphine in the liver can be unreliable, leading to adverse effects or poor pain control (page 261 CTC, 7th edn).

7) Which of the following statements regarding the treatment of neuropathic pain is **FALSE**?

   a) Acetaminophen with codeine (Tylenol #3) is a first line treatment for neuropathic pain
   b) If patients are too sedated on amitriptyline, nortriptyline may be better tolerated
   c) Some patients may obtain better relief of pain with a combination of a TCA (such as amitriptyline) and a antiepileptic drug (such as gabapentin)
   d) If carbamazepine must be used during pregnancy, folate supplementation (5mg/day) is recommended

Answer: A. Opioid treatment is usually tried as a third line treatment option for people who have significant neuropathic pain refractory to first line agents (Figure 1, page 260 of Therapeutics choices). Nortriptyline is less sedating than amitriptyline and may be a reasonable choice. Combinations therapies such as amitriptyline and gabapentin can have synergistic effects on pain and CBZ is associated with increased risk of neural tube defects (page 262, CTC, 7th edn).

Chapter 15: Bell's Palsy

8) AB, a 35-year old pregnant patient of yours, presents with the Bell's Palsy symptoms of mild facial weakness of the upper and lower face, ear pain and altered taste which began about 5 days ago and hasn't worsened since. Which of these statements represents your best response?

   a) No treatment is necessary since ~85% of cases resolve without treatment
   b) Morphine 10mg q4h prn for the ear pain
   c) Acyclovir 400mg 5 times daily for 10 days
   d) Prednisone 1mg/kg daily for 5 days, then taper dose for 5 days

Answer: A. Up to 85% of cases recover spontaneously without treatment. Ibuprofen or acetaminophen with or without codeine may be used for pain in the first day or two, but more potent agents are not usually needed. Acyclovir is seldom given without prednisone and its' benefit is not established (page 201, CTC, 7th edn). Prednisone would not be used since treatment is unnecessary for mild weakness that is no longer evolving (Figure 1, page 202, CTC, 7th edn).

Chapter 24: Restless Legs Syndrome

9) Which of the following have been shown to be useful in the treatment of restless legs syndrome?

   a) Diphenhydramine
   b) Caffeine
   c) Pramipexole
   d) Fluoxetine
   e) Alcohol

Answer: C. Pramipexole, a dopamine agonist, is one of the drugs of choice in the treatment of restless legs syndrome. All of the other agents have been shown to contribute to its' symptoms.

Chapter 25: Seizures and Epilepsy (use of folic acid)

10) MJ is a 27-year old female whose epilepsy is well-controlled on lamotrigine. She and her husband have decided that they are ready to start a family, so she wants to discuss her plans with you. You talk to her about the need for folic acid to prevent any teratogenic effects from the antiepileptic agent and recommend:

    a) A multivitamin
    b) Folic acid 0.4mg daily
    c) Folic acid 10mcg daily
    d) Folic acid 5mg daily

Answer: D. Women on antiepileptic drugs should receive at least 1mg (up to 5mg) daily starting before conception and during the pregnancy to prevent neural tube defects (bottom of page 306, CTC, 7th edn). All of the other choices would not provide enough folic acid.

Chapter 28: Age-Related Macular Degeneration

11) MF is a 78-year old smoker who is newly diagnosed with the dry form of age-related macular degeneration (AMD). When counselling this patient, you recommend that:

    a) She continue smoking
    b) She take a vitamin compound containing beta-carotene and vitamins C and E
    c) She take a vitamin compound containing copper, zinc, vitamins C and E
    d) She always wear sunglasses

Answer: C. Smoking is implicated in up to 30% of vision loss from AMD. Beta-carotene containing formulations are no longer recommended for the prevention to AMD (page 333, CTC, 7th edn). It is not known if wearing sunglasses has an impact on the condition. Self-monitoring with an Amsler grid will help detect the progression to the wet form of AMD in the 5% of patients in which this occurs.

Chapter 34: Thyroid Disorders

12) Which of the following is the **INCORRECT** response regarding the treatment of hypothyroidism?

    a) The dosage of levothyroxine must be reduced during pregnancy
    b) Levothyroxine dosage adjustments are made every 4 to 6 weeks
    c) Levothyroxine dosage adjustments are made every 4 weeks in the elderly
    d) The average adult replacement dose of levothyroxine is 1.6mcg/kg/day
    e) Levothyroxine treatment may exacerbate angina

Answer: A. Thyroid binding globulins increase during pregnancy and levothyroxine requirements may increase by up to 50%. It takes about 6 weeks to reach steady state after a dosage adjustment, so no dose adjustments should be made before 6 weeks.

13) Which of the following drugs does **NOT** reduce the absorption of levothyroxine?

    a) Iron
    b) Calcium
    c) Warfarin
    d) Sucralfate

Answer: C. Levothyroxine may affect the body's response to warfarin, leading to increased anticoagulation. All of the other drugs bind to levothyroxine preventing its absorption, and the administration of these agents should be spaced to prevent this.

Chapter 34: Obesity

14) JP is 43-year old female with type 2 diabetes who is taking metformin 500mg twice daily, hydrochlorothiazide 25mg daily and citalopram 20mg daily. She has been trying to lose weight to help with both her diabetes and mild hypertension but has not been able to lose more than a few pounds. The best prescription alternative for her would be:

a) Bupropion SR 450mg daily
b) Orlistat 120mg three times daily
c) Liragludite 0.6mg sc daily
d) Bupropion SR 150mg daily

Answer: B. Orlistat is approved for weight loss in type 2 diabetes patients for whom it improves glycemic and metabolic control. Liraglutide, at a dose higher than that currently recommended for T2DM, may promote and maintain weight loss. Bupropion has mild appetite suppressant effects but is only to be used in the short term with a max dose of 150mg bid

15) Which of the following statements about medications used to treat obesity is **TRUE**?

a) Orlistat does not interfere with the absorption of soluble vitamins
b) Anti-obesity drugs have shown a beneficial effect on mortality
c) Discontinuation of anti-obesity medications typically does NOT result in regaining weight
d) In obese individuals, total daily doses of bupropion should not exceed 300mg to minimize seizure risk.

Answer: D. Patients taking orlistat, should be advised to take a daily multivitamin $\geq$2 hours before or after orlistat. Anti-obesity medications have **not** been shown to have a beneficial effect on mortality. Discontinuation of anti-obesity medications typically does result in regaining weight. Single doses of bupropion of >150 mg per dose or total daily dose >300 mg/day are associated with increased seizure risk.

Chapter 40: Intermittent Claudication

16) When considering the use of pentoxifylline to treat intermittent claudication, all of the following is true **EXCEPT**:

a) It is not recommended for patients with marked renal or hepatic dysfunction
b) It causes a lot of GI upset, so should be taken with food
c) 24 weeks of therapy followed by 8 weeks drug-free can decrease the need for the drug
d) It is very effective in mild claudication
e) It will increase the risk of bleeding if given with warfarin

Answer: D. It only produces marginal improvement in pain-free and maximal walking distance, so is not indicated for mild claudication (page 513, CTC, 7th edn). Pentoxifylline causes nausea, vomiting, dyspepsia, belching, bloating and flatulence; the incidence of these can be reduced by taking the medication with food. A drug-free period as exercise tolerance increases can reduce the need for pentoxifylline. It increases the effect of warfarin by an unknown mechanism, leading to an increased risk of bleeding. It is not recommended for patients with marked renal or hepatic dysfunction

Chapter 41: Post-myocardial Infarction

17) A patient with a myocardial infarction, with preserved LV function and without any previous medical conditions should be routinely started on all of the following medications **EXCEPT**:

a) Metoprolol
b) Ramipril
c) ASA
d) Simvastatin
e) Spironolactone

Answer: E. Among high risk patients, antiplatelet agents such as ASA, beta-blockers, ACE inhibitors and lipid-lowering therapies independently reduce the incidence of vascular events and have been shown to reduce mortality. Aldosterone antagonists should be considered in patients with significant LV dysfunction.

Chapter 46: Stable Angina

18) The most common side effect of nitrate therapy in the treatment of angina is:

a) Chest pain
b) Upset stomach
c) Muscle cramps
d) Headache

Answer: D. Headache is extremely common and can be severe due to the vasodilatory effects of the nitrate. Chest pain is a symptom of an angina attack and nitrates are taken to prevent these. Upset stomach and muscle cramps rarely occur with nitrates.

19) Which of the following is **TRUE** regarding the treatment of stable angina?

a) Organic nitrates should be prescribed with a nitrate-free interval of 4-6 hours to avoid the development of tolerance
b) Substitution with an ARB is reasonable if a patient that is prescribed an ACE inhibitor cannot tolerate it due to a cough
c) Verapamil and diltiazem are recommended for patients with LV systolic dysfunction
d) Beta-blockers are the agents of choice for patients with Prinzmetal's angina

Answer: B. Organic nitrates should be prescribed with a nitrate-free interval of 10-12 hours to avoid the development of tolerance (page 568, CTC, 7th edn). Verapamil and diltiazem should be avoided for patients with LV systolic dysfunction (page 568, CTC 7th edn). Calcium channel blockers and nitrates are the agents of choice for patients with Prinzmetal's angina (page 568, CTC 7th edn).

Chapter 44: Raynaud's Phenomenon

20) For a patient with Raynaud's phenomenon, the following could be of value:

a) Avoid snowmobiling
b) Take nifedipine XL 30mg daily in the winter
c) Take nifedipine XL 30mg 30-60 min. before cold exposure
d) All of the above
e) None of the above

Answer: D. Patients with Raynaud's phenomenon should be advised to avoid cold exposure and the use of vibrating tools; snowmobiling combines both of these factors. Calcium channel blockers (CCBs) are the first-line agents in treatment of this condition and reduce the frequency and severity of the attacks. A CCB can be taken either before cold exposure or on a regular basis during the winter months; daily use rather than prn will increase tolerance to the side effects.

Chapter 48: Venous Thromboembolism

21) All of the following antimicrobials should be given with caution, if at all, to a patient being treated with warfarin for a deep vein thrombosis (DVT) **EXCEPT**:

a) Erythromycin
b) Fluconazole
c) Ciprofloxacin
d) Tetracycline
e) Clindamycin

Answer: E. Clindamycin does not interact with warfarin. All of the other agents potentiate the effects of warfarin, increasing the INR.

22) When treating DVT, warfarin is given at a dose to maintain an INR range of:

a) 0.5 – 1
b) 1 – 1.5
c) 1.5 – 5
d) 2 - 3
e) 4 – 5

Answer: D. The standard treatment is for an INR range of 2-3. An INR of 1.5-2 has been shown to be less effective than standard treatment (page 584, CTC, 7th edn). All of the other ranges listed are inappropriate target INR ranges.

Chapter 52: Asthma in Infants and Children

23) Which of the following is **INCORRECT** regarding asthma therapy in infants and children?

a) Adult doses of inhaled medication may be required in children
b) Formoterol, a LABA, has a similar onset of action to salbutamol
c) Children on ICS therapy have restricted height as adults
d) Montelukast may allow a lower dose of an ICS
e) Use of salbutamol >4 times per week indicates suboptimal asthma control

Answer: C. Drug deposition with an MDI and spacer device can be as little as 10 to 20% of that in adults, resulting in adult doses. There is an initial decrease in growth rate, but it is not sustained with long-term therapy; ICS use doesn't affect final adult height. Formoterol, though it is long-acting, has a rapid onset and can be used as prn therapy. Leukotriene Receptor Antagonists (LTRAs) such as zafirlukast and montelukast, have steroid-sparing properties allowing improved control of asthma at a reduced dose of ICS (page 633, CTC, 7th edn). Use of salbutamol on a prn basis provides valuable information on asthma control and use of 4 or more times per week indicates suboptimal control.

24) Which of the following is **CORRECT** regarding the treatment of asthma in children?

a) Inhaled corticosteroids (ICS) can be safely stopped once symptoms are under control
b) Salbutamol prevents exercise-induced bronchospasm for up to 10 hours
c) Formoterol can be used to treat bronchospasm
d) Montelukast will allow an ASA-sensitive asthmatic to take ibuprofen safely
e) Long-acting theophylline is an effective agent for routine maintenance in asthma

Answer: C. Regular use of an ICS reduces mortality and asthma exacerbations, improves pulmonary function and controls symptoms; cessation may result in the return of airway hyperactivity to previous levels (page 633, CTC, 7th edn). Salbutamol is a SABA that only prevents exercise-induced bronchospasm for 2-4 hours. Formoterol is a LABA that has a rapid onset of action similar to salbutamol which makes it an effective treatment for bronchospasm. Even though montelukast may provide bronchoprotection in an ASA-sensitive asthmatic, NSAIDs should still be avoided in these patients. Theophylline is only used as add-on therapy because of its potential for toxicity and the large number of drug interactions involving this agent (page 632, CTC, 7th edn).

Chapter 62: Inflammatory Bowel Disease

25) Which of the following are **TRUE** statements regarding the treatment of Crohn's disease or ulcerative colitis?

a) The use of NSAIDs should be avoided
b) Therapy with purine antimetabolites is considered high risk during pregnancy
c) Loperamide is useful for diarrhea in patients with severe disease
d) Sulfasalazine has the least incidence of side effects
e) Corticosteroids may reduce symptoms but are ineffective at inducing remission in patients with Crohn's disease

Answer: A. NSAIDs may exacerbate symptoms in both of these conditions. Purine antimetabolites carry a low risk of teratogenicity, despite conflicting data (page 765, CTC, 7th edn). Antidiarrheal agents should be avoided in severe disease due to the risk of toxic megacolon. Sulfasalazine has the highest incidence of side effects, including nausea, headache, rash, haemolytic anemia and hepatotoxicity. Corticosteroids are effective for induction of remission in patients with CD and UC

Chapter 63: Irritable Bowel Syndrome

26) Which is the **BEST** response regarding irritable bowel syndrome?

a) Probiotics are very useful in the treatment of irritable bowel syndrome
b) Lifestyle modification is more useful than medication therapy
c) Loperamide 2mg qid is recommended for diarrhea
d) Psyllium and bran should be taken for constipation
e) Pinaverium for spasm is a mainstay of therapy

Answer: B. Patients generally benefit more from lifestyle modification, including diet and stress reduction, than from drug therapy. While there is interest in the use of probiotics in IBS, quality of available products is unreliable and supporting evidence is lacking. Loperamide should be taken on a PRN basis, not regularly. For predominant constipation, psyllium OR bran is recommended as fibre sources. Since "colonic spasm" doesn't explain IBS symptoms so an antispasmodic, such as pinaverium, dicyclomine or trimebutine, is unlikely to be helpful (page 781, CTC, 7th edn).

Chapter 67: Lower Urinary Tract Symptoms and Benign Prostatic Hyperplasia

27) HB is a 73-year old patient with BPH who has been stabilized on Flomax CR 0.4mg daily. He has just been diagnosed with depression. Which of the following antidepressants would be contraindicated for this patient?

a) Escitalopram
b) Paroxetine
c) Venlafaxine
d) Nortriptyline
e) Moclobemide

Answer: D. Nortriptyline is a tricyclic antidepressant and, like all of that class, has a high incidence of anticholinergic side effects, including urinary hesitancy. None of the other agents would be contraindicated.

Chapter 70: Contraception

28) Which of the following is **TRUE** regarding the adverse effects acronym "ACHES" in relation to oral contraceptives:

a) "A" refers to acne
b) "C" refers to chest pain caused by an MI
c) "H" refers to hives from an allergic reaction
d) "E" refers to elevated blood pressure
e) "S" refers to severe menstrual cramps

Answer: B. ACHES refers to Abdominal pain, Chest pain, Headaches, Eye problems and Severe leg pain.

29) Which of the following is **FALSE** in regards to Emergency Contraception:

a) The Yuzpe method causes a higher rate of nausea than Plan B
b) All methods must be used within 24 hours of unprotected intercourse to be effective
c) The two (2) Plan B tablets can be taken as a single dose
d) The two (2) Plan B tablets can be taken 12 hours apart
e) A copper IUD can be used up to 7 days after unprotected intercourse

Answer: B. The nausea/vomiting rates for the Yuzpe method are 50.5%/18.8% while for Plan B they are 23.1%/5.6%. The efficacy is highest if used within 24 hours of unprotected intercourse, but the oral methods can be used up to 5 days and the copper IUD up to 7 days after unprotected intercourse. The dosing of Plan B is quite flexible, with the possibilities of taking 2 tablets together, or 1 q12h and second tablet up to 24 hours after the first dose (page 873, CTC, 7th edn).

Chapter 71: Dysmenorrhea

30) All of the following are effective in the treatment of dysmenorrhea **EXCEPT**:

a) Topical heat therapy
b) Regular exercise
c) Mefenamic acid 500mg to start then 250mg q6h prn
d) Ibuprofen 200-600mg q6h
e) Naproxen sodium 550mg bid

Answer: C. All NSAIDS (except for ASA) are effective in 80% of dysmenorrhea cases and there is minimal difference between them; however, they should be taken on a regular schedule for 48 to 72 hours and should not be taken prn (page 879, CTC, 7th edn). Both topical heat and regular exercise are non-pharmacological therapies that provide relief for dysmenorrhea.

31) Which of the following statements about the treatment of dysmenorrhea is TRUE?

a) ASA is as effective as other NSAIDs for treating dysmenorrhea
b) Diclofenac should be used in conjunction with misoprostol or a PPI when used for dysmenorrhea for most females
c) Combined oral contraceptives (COC) have not been found to be helpful to treat dysmenorrhea
d) NSAIDs and SSRIs used together for dysmenorrhea can increase the risk of gastrointestinal bleeding
e) None of the above

Answer: D. The combination of NSAIDs and SSRIs has been associated with an increased risk of GI bleeds (Table 2, page 881, CTC, 7th edn). ASA is less effective than other NSAIDS for treating dysmenorrhea (page 879, CTC, 7th edn). Since NSAIDs are used for a short term, they do not need a gastroprotective agent to be used concomitantly unless the person is at high risk for peptic ulcers. Combined oral contraceptives are a reasonable first line option for dysmenorrhea.

Chapter 73: Female Sexual Dysfunction

32) All of the following medications can cause Female Sexual Dysfunction **EXCEPT**:

a) Paroxetine
b) Amitriptyline
c) Phenytoin
d) Testosterone
e) Metoprolol

Answer: D. Physicians experienced in women's sexual dysfunction are investigating the use of testosterone in its treatment. All of the other agents have sexual dysfunction as a recognized adverse drug reaction (Table 1, page 902, CTC, 7th edn).

Chapter 74: Male Sexual Dysfunction

33) Choose the **TRUE** statement regarding the treatment of Erectile Dysfunction:

a) SSRIs have been shown to be useful in treatment
b) Taladafil has the longest duration of action of the phosphodiesterase Type 5 (PDE5) Inhibitors
c) The PDE5 Inhibitors have no drug interactions of concern
d) Sildenafil will show an effect within 30 minutes
e) Vardenafil should be taken with a high fat meal

Answer: B. Taladafil has duration of effect of up to 36 hours, while sildenafil and vardenafil have a duration of effect of 8-12 hours. SSRIs have a recognized ADR of sexual/erectile dysfunction. All of the PDE5 Inhibitors have significant interactions, including with nitrates, CYP3A4 inhibitors, and grapefruit juice (Table 6, page 921, CTC, 7th edn). A high fat meal delays the absorption of vardenafil.

Chapter 79: Gout and Hyperuricemia

34) What would be the **BEST** choice for treatment of acute gout in someone with no contraindications?

a) Colchicine 0.6mg once daily
b) Indomethacin 75mg stat then 50mg q6h x 2 days, then 50mg q8h x 1 day, then 25mg q8h x 1 day
c) Allopurinol 100mg daily
d) Celecoxib 100mg bid

Answer: B. NSAIDS are the first choice in treatment of acute gout. Dose of colchicine is 1.2mg initially, then 0.6mg 1 hour later (page 967, CTC, 7th edn). Allopurinol is used as a prophylactic agent to prevent further attacks. The regimen for celecoxib is 800mg stat, then 400mg on day 1, and then 400mg bid x 7days.

35) Which of the following statements regarding gout treatment is/are **TRUE**?

a) Indomethacin is more effective than other NSAIDs in the treatment of gout.
b) Colchicine should be as first line therapy in patients with acute gout and renal failure (CrCl < 10 mL/min)
c) Febuxostat can be used for patients with severe renal insufficiency
d) Allopurinol is not associated with gastrointestinal side effects.
e) None of the above

Answer: C. All NSAIDs are equally effective for treating gout – though indomethacin is traditionally used more. Colchicine is contraindicated in those with severe renal failure. Very small quantities of febuxostat are excreted renally (page 971, CTC, 7th edn). Allopurinol is associated with several GI adverse effects.

36) When considering the treatment of gout, all of the following are true **EXCEPT**:

a) Start with allopurinol 100mg daily and gradually titrate upwards
b) There is not a clear relationship between obesity and gout
c) Colchicine 0.6mg twice daily will reduce the possibility of an acute flare
d) The patient should be told to avoid alcohol intake
e) Indomethacin 25mg twice daily will reduce the possibility of an acute flare

Answer: B. The starting dose of allopurinol is 100mg daily, gradually increased and titrated to urate levels. Obese patients should lose weight to achieve an ideal BMI and incorporate healthy lifestyle

changes (page 969, CTC, 7th edn). Alcohol, all types, should be avoided. Colchicine or, if it cannot be used, a low-dose NSAID reduces the risk of an acute flare when therapy with allopurinol is started.

Chapter 85: Rheumatoid Arthritis

37) Which of the following statements regarding the use of NSAIDs in the treatment of rheumatoid arthritis is/are **TRUE**?

a) They are safe when used during early pregnancy (first or second trimester)
b) Patients with heart disease should be on concurrent low-dose ASA
c) Misoprostol should be added if the patient is at risk of peptic ulcer disease
d) NSAIDs are used initially in patients with rheumatoid arthritis to reduce joint pain and swelling.
e) All of the above

Answer: E. NSAIDS are considered safe during the first two trimesters of pregnancy but should not be used in the last month due to the risk of fetal and maternal bleeding, premature closure of the ductus arteriosis and interference with labour (pg 1052, CTC 7th edn). The efficacy of traditional NSAIDs and COX-2 inhibitors are similar. Appropriate gastroprotection (misoprostol or a PPI) should be used if a patient is at risk of peptic ulcer disease. Increased cardiovascular events may be linked to the inhibition of COX-2 by NSAIDs.

Chapter 96: Rosacea

38) Which of the following statements about rosacea are **TRUE**?

A) Alcohol is not a trigger
B) Topical corticosteroids are useful to treat the redness and inflammation
C) Tetracycline should be avoided because it causes photosensitivity reactions
D) Topical metronidazole should be continued for 12 weeks
E) Sunlight can be helpful as a treatment

Answer: D. Alcohol is a trigger that can worsen rosacea, as is sunlight, heat, hot beverages, spicy foods, stress and the application of corticosteroids to the face (Table 2, page 1176, CTC, 7th edn). Tetracycline is one of the agents used to treat severe and persistent rosacea, though the side effect of photosensitivity does mean that the user must protect the skin during sun exposure. While topical metronidazole is the first-line treatment against mild to moderate rosacea, it can take 12 weeks of therapy to show pronounced improvement.

39) While tetracycline is an effective treatment for rosacea, it has several disadvantages. These disadvantages include:

a) High cost
b) Telangiectasia results from its use
c) Topical metronidazole cannot be used at the same time
d) Some food restrictions are required
e) Concurrent antacids are required to prevent GI upset

Answer: D. The absorption of tetracycline is reduced by interactions with calcium; it cannot be taken with milk or milk products. This interaction also applies to iron, zinc, aluminum, magnesium and other cations, so the intake of these items (e.g. antacids, vitamins, etc.) must be spaced by 2 hours (Table 5, page 1182, CTC, 7th edn). Tetracycline is the cheapest agent in the class of tetracyclines, and a 30-day supply costs less than $10. Telangiectasia is caused by the condition but its presence is revealed when the antibiotic clears up the symptoms. Tetracycline is frequently added to topical metronidazole therapy in recurrent and severe rosacea.

Chapter 98: Sunburn

40) Which of the following agents would **NOT** be implicated in a phototoxic reaction?

a) Tretinoin
b) Doxycycline
c) Ciprofloxacin
d) Hydrochlorothiazide
e) Amoxicillin

Answer: E. All of the other agents have known phototoxic side effects (Table 2, page 1194, CTC, 7th edn).

41) SB is a 19-year old fair-skinned woman who has sunburn after visiting a tanning salon. Any of the following would be useful to reduce erythema and/or pain **EXCEPT**:

a) Diclofenac 1% gel applied 6 and 10 hours after exposure
b) Calamine lotion
c) Prednisone 5mg po daily x 5 days
d) Ibuprofen 400mg q6h x 4 doses
e) Tap water compresses for 20 minutes, 4 to 6 times daily

Answer: C. Systemic corticosteroids have little effect when treating sunburn and may increase the risk of secondary infection. All of the other alternatives have been shown to provide relief. Compresses provide temporary relief. NSAIDS, either topical or oral, may decrease pain, erythema and, in some cases, edema.

Chapter 91: Burns

42) Which of the following is **TRUE** regarding management of superficial burns?

a) Prophylactic antibiotics are first-line treatment options
b) NSAIDS should be dosed every 6 to 8 hours if needed for pain
c) Apply silver sulfadiazine cream to the area once daily
d) Avoid povidone/iodine use during pregnancy

Answer: D. Prophylactic antibiotics should be avoided in all but exceptional circumstances to avoid development of resistant infections. NSAIDS manage pain in minor burns and suppress the inflammation and should be given on a regular basis. Silver sulfadiazine should be avoided due to evidence that it may be associated with poorer healing outcomes (page 1124, CTC, 7th edn). Povidone/iodine should be avoided during pregnancy since significant iodine absorption by the baby has been reported after maternal topical use (page 1125, CTC, 7th edn).

Chapter 94: Pruritus

43) Which of the following is **FALSE** regarding the treatment of pruritus?

a) Bathing is therapeutic for dry skin if water can be entrapped within the skin
b) Woolen and synthetic fabrics should be avoided
c) Systemic therapy is first line for the treatment of mild or localized itch.
d) Topical corticosteroids should not be used for long periods of time
e) Friction and irritation to the skin should be minimized

Answer: C. Topical therapy is the first choice for treatment of mild itching (page 1152, CTC 7th edn). All of the other answers are appropriate recommendations.

Chapter 83: Osteoporosis

44) Which is the following is **FALSE** regarding osteoporosis?

a) Raloxifene is the agent of choice for the prevention and treatment of corticosteroid-induced osteoporosis
b) Safety of bisphosphonates in renal impairment is unknown
c) Patients taking teriparatide should be in a supine or sitting position during administration due to risk of orthostatic hypotension
d) Zoledronic acid is given as a 5mg IV infusion once a year

Answer: A. Bisphosphonates are the agents of choice for the prevention and treatment of corticosteroid-induced osteoporosis (page 1030, CTC 7th edn). Safety of bisphosphonates in renal impairment (<35ml/min) is unknown (page 1031, CTC 7th edn).

Chapter 90: Bacterial Skin Infections

45) When treating a patient with an infected cat bite, which of the following would you prescribe?

a) Clindamycin 300mg q6h
b) Cephalexin 500mg q6h
c) Cloxacillin 500mg q6h
d) Amoxicillin/clavulanate 500mg q8h
e) Cefadroxil 1gm daily

Answer: D. Amoxicillin/clavulanate should be used due to the presence of *Pasteurella multocida* in cat and dog bites. This organism is resistant to clindamycin, cephalosporins (cephalexin, cefadroxil) and penicillinase-resistant penicillins (cloxacillin) {page 1110, CTC, 7th edn).

46) Which drug would be the safest to use for a skin infection in a patient with a recent history of anaphylaxis from a dose of intravenous penicillin G?

a) Amoxicillin
b) Dicloxacillin
c) Erythromycin
d) Cephalexin
e) Cefuroxime

Answer: C. Erythromycin, being from the macrolide class of agents, has no cross-sensitivity with penicillin G. Amoxicillin and dicloxacillin are both penicillins, so would likely provoke the same anaphylactic reaction as penicillin G. Cephalosporins (cephalexin) have some cross-reactivity with penicillins.

47) *Staphylococcus aureus* is a common etiologic agent in:

a) Urinary tract infection
b) Folliculitis
c) Acute exacerbations of chronic bronchitis
d) Pseudomembranous colitis

Answer: b. *S. aureus* is the most common infectious cause of folliculitis (page 1108, CTC, 7th edn). Pseudomembranous colitis is caused by *E. coli*. Acute bronchitis has a nonbacterial cause in >90% of cases. UTIs can be caused by a variety of organisms but *S. aureus* is not among them.

48) Which drug would be safe and effective for the treatment of cellulitis in a pregnant woman who is allergic to penicillin?

a) Minocycline
b) Levofloxacin
c) Clindamycin
d) Silver sulfadiazine
e) Cephalexin

Answer: C. Clindamycin is a reasonable agent to treat serious skin and soft tissue infections in pregnant penicillin-allergic women. The only other agent on the list that is also one of the recommended oral agents to treat cellulitis is cephalexin, and this agent has cross-reactivity with penicillins (Figure 4, page 1112, CTC, 7th edn). Fluoroquinolones have little role to play in treating common bacterial skin infections unless gram-negative organisms are suspected. Silver sulfadiazine is a topical agent used to treat burns. Minocycline is not used to treat bacterial skin infections though it has a role to play in the treatment of acne.

Chapter 99: Common Anemias

49) Which statement about iron supplementation is **FALSE**?

a) Iron is poorly absorbed from enteric-coated tablets
b) The dosing of iron supplementation is slowly increased to minimize gastric upset
c) Elemental iron has few drug interactions
d) The target daily dose of elemental iron is 105-200mg per day
e) An equivalent strength of ferrous fumarate provides more elemental iron than ferrous gluconate

Answer: C. Oral iron preparations have many drug interactions, usually due to chelation. This reduces the absorption of both agents in the interaction and their administration should be separated by approximately 2 hours. Nonenteric-coated salts are preferred due to concerns with the effectiveness of enteric-coated preparations in releasing iron in the gastric environment. Gastrointestinal side effects are the main reasons for non-adherence and a graduated approach to dosing should be used to minimize these. The target daily dose is 105-200mg of elemental iron per day although in the elderly 15-50mg per day may be sufficient (page 1206, CTC, 7th edn). A 300mg tablet of ferrous fumarate provides 100mg of elemental iron; an equivalent tablet of ferrous gluconate provides only 35mg (Table 1, page 1213, CTC, 7th edn).

Chapter 124: Tuberculosis

50) For the majority of cases, the recommended treatment for a patient with latent TB infection (LTBI) in order to reduce the risk of TB developing is:

a) Isoniazid 900mg twice weekly (directly observed therapy)
b) Pyrazinamide 50mg/kg twice weekly
c) Levofloxacin 500mg daily
d) Ethambutol 50mg/kg twice weekly
e) Rifabutin 300mg daily

Answer: A. Patients with LTBI have a 10% risk of developing TB, and isoniazid can reduce this risk by >90%. Pyrazinamide was formerly used for prophylaxis in conjunction with rifampin, but this combination

is no longer used due to a 7.3% risk of liver injury. The other agents are used in various combinations to treat active TB.

51) Reasons for non-adherence to TB medications, leading to drug resistance, include:

a) Complicated dosage regimens
b) Frequent and uncomfortable side effects
c) Long treatment periods
d) All of the above
e) None of the above

Answer: D. Patients can be on as many as 4 medications at a time and therapy can last 4 to 12 months, leading to treatment fatigue. All of the anti-tubercular agents have a high incidence of side effects, including GI upset, rash, myalgia, confusion, urticaria, flu-like illness, etc.

52) Which of the following agents cannot be used to treat active TB during pregnancy?

a) Isoniazid
b) Rifampin
c) Ethambutol
d) Pyrazinamide
e) Streptomycin

Answer: E. The combination of isoniazid, rifampin and ethambutol is the preferred initial treatment regimen for a pregnant woman. Teratogenicity with pyrazinamide has not been determined, though the risk is thought to be unlikely. Streptomycin has been associated with congenital deafness and is contraindicated.

Chapter 109: Bacterial Meningitis

53) Post-exposure prophylaxis against meningitis caused by *N. meningitidis* in an adult can include:

a) Rifampin 600mg daily x 4 days
b) Ciprofloxacin 500mg as a single dose
c) Ceftriaxone 250mg IM as a single dose
d) All of the above
e) None of the above

Answer: D. The listed agents are all options for post-exposure prophylaxis (page 1309, CTC, 7th edn).

Chapter 120: Sexually Transmitted Infections

54) In the treatment of sexually transmitted infections, all of the following are true **EXCEPT**:

a) Metronidazole interacts with alcohol
b) Single-dose fluconazole can be an effective treatment
c) Fluconazole interacts with warfarin
d) Intravaginal metronidazole is effective against trichomoniasis
e) Clindamycin can cause *C. difficile* diarrhea

Answer: D. Only oral metronidazole is effective against trichomoniasis. Alcohol has a disulfiram-like reaction with metronidazole and should be avoided during therapy and for at least 24 hours afterwards. Fluconazole may cause an elevated prothrombin time when given to women on warfarin; a single dose of 150mg is effective against symptomatic vulvovaginal candidiasis, but may need to be given for 3 days if

the problem is recurrent. *C. difficile* diarrhea is a known ADR of clindamycin and may appear up to 2 months after the antibiotic is finished.

55) In which of the following would you **NOT** routinely treat the sexual partner?

a) Trichomoniasis
b) Candidiasis
c) Chlamydia
d) Pelvic inflammatory disease
e) Gonorrhea

Answer: B. Candidiasis is not usually considered sexually transmitted, though the treatment of the sexual partner could be considered in recurrent infections (>4/year). All of the others are sexually transmitted diseases and both partners must be treated (Table 2, page 1466, CTC, 7th edn).

56) Which of the following would damage a latex condom?

a) Metronidazole vaginal gel
b) Miconazole vaginal ovule
c) Nystatin vaginal cream
d) Clotrimazole vaginal tablet
e) Miconazole vaginal cream

Answer: B. Miconazole vaginal ovules contain hydrogenated vegetable oil and mineral oil and these decrease the efficacy latex condoms or diaphragms. This also applies to econazole and terconazole ovules and butoconazole cream. None of the other agents contain these ingredients (Table 5, page 1476, CTC, 7th edn).

Chapter 112: Herpes virus Infections (Cold Sores)

57) When treating recurrent cold sores, it is important that oral therapy be started:

a) Within 1 hour of first symptoms
b) Within 2 hours of first symptoms
c) Within 12 hours of first symptoms
d) Within 48 hours of first symptoms
e) Within 72 hours of first symptoms

Answer: A. Therapy should be initiated within 1 hour of the first symptoms to reduce the duration of pain and/or accelerate healing.

Chapter 123: Travellers' Diarrhea

58) Which of the following statements about travellers' diarrhea are **CORRECT**?

A) Antibiotics are necessary to treat the infection, even if fever or mucous in the stool are absent and symptoms are mild
B) Loperamide is a good medication to use to prevent travellers' diarrhea
C) Azithromycin 500mg daily x 3 days is the antibiotic of choice in Asia and India
D) Cholera vaccine is routinely recommended
E) Mild travellers' diarrhea usually resolves in 24 hours with fluids and loperamide

Answer: C. Mild diarrhea can be managed with fluids and antimotility agents, and antibiotics are only recommended if there are signs of a bacterial infection. Prophylactic antimotility agents (loperamide)

have no effect in reducing the incidence of travellers' diarrhea. Azithromycin is the antibiotic of choice in Thailand, India, Indonesia and Nepal as the causative agent is usually a fluoroquinolone-resistant *Campylobacter*. Cholera vaccine (Dukoral) is only recommended for travellers at unusually high risk working in cholera risk zones (page 1514, CTC, 7th edn). Mild travellers' diarrhea usually resolves within 24 hours when treated with anti-motility agents and fluids (Therapeutic Tip).

Chapter 117: Malaria Prevention

59) Which of the following statements about malaria prevention is **FALSE**?

a) Chloroquine should be started 2 weeks before departure
b) Primaquine is known for its severe neuropsychiatric reactions
c) Mefloquine should be continued for 4 weeks after leaving a malarious area
d) Primaquine must be taken daily
e) Chloroquine is safe to use during pregnancy

Answer: B. Primaquine has few side effects with the most common being severe haemolytic anemia in those with G6PD deficiency (blacks, Mediterraneans, Asians). Chloroquine and Mefloquine are taken once weekly, starting 2 weeks before departure and continuing for 4 weeks after leaving the malarious area. Primaquine must be taken daily but is only started 1 to 2 days before entry to the area and continued for 3 days after leaving the area. Chloroquine and hydroxychoroquine are safe to use during pregnancy; mefloquine is safe during the 2nd and 3rd trimesters. All other agents are contraindicated during pregnancy.

Chapter 26: Fever in Children

60) When treating fever in children, you have to consider that:

A) Dosing of acetaminophen and ibuprofen should be by age
B) Fever is defined as a rectal temperature consistently over 38^{o}C
C) Naproxen has been shown to be a safe and effective treatment option to give to a 6 year old with fever
D) Alcohol is a good sponging agent to reduce fever

Answer: B. Dosing of acetaminophen and ibuprofen should be by weight due to size fluctuations in all age groups. Alcohol should never be used as a sponging agent because of the risk that it be absorbed through the skin, inhaled or swallowed. Fever is a symptom and is most commonly an adaptive response to an infection. Temperatures taken from the rectum, mouth or tympanic membrane reflect core temperature and fever is defined as a temperature consistently over 38^{o}C taken rectally or the rectal equivalent. Naproxen has not been studied in children for the treatment of fever and therefore is not recommended in children under 12 years of age.