AMERICAN COLLEGE OF CLINICAL PHARMACY

Updates in Therapeutics:
2013 Pharmacotherapy Preparatory Review and Recertification Course

POSTTEST ANSWERS – SESSION 3

Neurology

1. **Answer C:** *Lorazepam.*
   Lorazepam is the drug of choice for treatment of status epilepticus. Phenobarbital, phenytoin, or fosphenytoin should be administered immediately after lorazepam to prevent further seizures. Valproic acid or levetiracetam may also be effective, but neither has FDA approval for status epilepticus.
   Reference:
   Claassen J, Silbergleit R, Weingart SD, et al. Emergency neurological life support: status epilepticus. Neurocrit Care 2012;17:S73-8.

2. **Answer A:** *Hypotension.*
   Hypotension is a concern with the infusion of either phenytoin or fosphenytoin. Folic acid deficiency and gingival hyperplasia are concerns with the long-term administration of phenytoin. Nystagmus often occurs with high-normal phenytoin serum concentrations. In an emergency setting such as status epilepticus, it is of no concern.
   Reference:
   Claassen J, Silbergleit R, Weingart SD, et al. Emergency neurological life support: status epilepticus. Neurocrit Care 2012;17:S73-8.

3. **Answer C:** *It will worsen J.P.'s constipation.*
   The use of an anticholinergic such as trihexyphenidyl may worsen J.P.'s constipation. In a patient with dementia, this medication would also be avoided; however, J.P. has no cognitive concerns at this time. Trihexyphenidyl should improve J.P.'s tremor but have no effect on bradykinesia.
   Reference:
   Olanow CW, Stern MB, Sethi K. The scientific and clinical basis for the treatment of Parkinson disease (2009). Neurology 2009;72(suppl 4):S1-S136.

4. **Answer D:** *Propranolol.*
   Although both divalproex sodium and propranolol have confirmed efficacy for the prophylaxis of migraine headache, divalproex sodium could contribute to the patient's obesity. Nortriptyline and methysergide are no longer considered in the migraine prophylaxis guidelines.
   Reference:
   Silberstein SD, Holland S, Freitag F, et al. Evidence-based guideline update: pharmacologic treatment for episodic migraine prevention in adults: report of the Quality Standards Subcommittee of the American Academy of neurology and the American Headache Society. Neurology 2012;78:1337-45.

5. **Answer C:** *Methylprednisolone.*
   Methylprednisolone is used for the acute treatment of multiple sclerosis exacerbations or attacks. It speeds time to recovery and, thus, is preferable to no treatment. Glatiramer acetate and mitoxantrone are both disease-modifying therapies used for the long-term prevention of neurologic problems, rather than an acute exacerbation.

Reference:
1. Burton JM, O'Connor PW, Hohol M, et al. Oral versus intravenous steroids for treatment of relapses in multiple sclerosis. Cochrane Database Syst Rev 2009;3:CD006921.
2. Goodin DS, Frohman EM, Garmany GP, et al. Disease-modifying therapies in multiple sclerosis: subcommittee of the American Academy of Neurology and the MS Council for Clinical Practice Guidelines. Neurology 2002;58:169-78.

General Psychiatry

6. **Answer D:** *Sertraline*
Sertraline is an appropriate antidepressant for B.C. because of its lack of significant hepatotoxicity and its weight-neutral profile. Amitriptyline, a tricyclic antidepressant, undergoes extensive hepatic metabolism and has the potential to cause weight gain and hyperlipidemia because of its anticholinergic and antihistaminic activity. Duloxetine may be an option if the patient has diabetic peripheral neuropathy that requires treatment; however, it is a poor choice for B.C. because of its risk of hepatotoxicity. Nefazodone has been limited in clinical use because of the risk of fulminant hepatotoxicity and hepatic failure.
References:
1. McIntyre RS, Panjwani ZD, Nguyen HT, et al. The hepatic safety profile of duloxetine: a review. Expert Opin Drug Metab Toxicol 2008;4:281-5.
2. DeSanty KP, Amabile CM. Antidepressant-induced liver injury. Ann Pharmacother 2007;41:1201-11.

7. **Answer D:** *Pseudoephedrine*
Pseudoephedrine, when combined with the selegiline patch (a monoamine oxidase inhibitor), can result in a hypertensive crisis; this combination is contraindicated for use. Cetirizine, corticosteroids, and loratadine have no drug-drug interactions with the selegiline patch, even at doses above 9 mg every 24 hours.
References:
1. Hyman Rapaport M. Translating the evidence on atypical depression into clinical practice. J Clin Psychiatry 2007;68(suppl 3):31-6.
2. Preskorn SH. Why the transdermal delivery of selegiline (6 mg/24 hr) obviates the need for a dietary restriction on tyramine. J Psychiatr Pract 2006;12:168-72.

8. **Answer D:** *Quetiapine XR*
Quetiapine XR is indicated for acute bipolar depression and bipolar maintenance as an add-on treatment, which would be appropriate in this case because D.A. is already taking valproic acid. Carbamazepine is good in acute mania but not as effective for bipolar depression. Lamotrigine is indicated for bipolar maintenance and has some efficacy for bipolar depression. Lamotrigine should not be used in conjunction with valproic acid, if possible, because of the increased risk of rash and the dosing precautions that are needed. The patient also has had a partial response to valproic acid, so switching to lamotrigine would not be appropriate at this point. Topiramate lacks efficacy data for bipolar depression or maintenance and should not be used in D.A. at this time.
References:
1. Sanford M, Keating GM. Quetiapine: a review of its use in the management of bipolar depression. CNS Drugs 2012;26:435-60.
2. Fountoulakis KN, Kasper S, Andreassen O, et al. Efficacy of pharmacotherapy in bipolar disorder: a report by the WPA section on pharmacopsychiatry. Eur Arch Psychiatry Clin Neurosci 2012;262(suppl 1):1-48.

9. **Answer B:** *Lurasidone*
   Lurasidone has the least potential to cause metabolic syndrome such as weight gain, hypertension, hyperglycemia, and hyperlipidemia, which the patient already has. Clozapine and olanzapine have the highest potential to cause metabolic syndrome symptoms. Risperidone has less risk than clozapine and olanzapine for metabolic syndrome but has potent dopamine blockade activity, which would confer an increased risk of dystonia. The patient has a history of dystonic reactions with first-generation antipsychotics, so risperidone would not be an optimal choice.
   References:

   1. Kane JM. Lurasidone: a clinical overview. J Clin Psychiatry 2011;72(suppl 1):24-8.
   2. Citrome L. Lurasidone for schizophrenia: a review of the efficacy and safety profile for this newly approved second-generation antipsychotic. Int J Clin Pract 2011;65:189-210.

10. **Answer C:** *Paroxetine*
    Paroxetine is most appropriate for this patient, who shows signs and symptoms of posttraumatic stress disorder (PTSD). Paroxetine, which is FDA indicated for PTSD, reduces symptoms of reexperiencing (nightmares), hypervigilance ("on alert"), and avoidance (has been unable to go back to work). Clomipramine has the most evidence for obsessive-compulsive disorder. Eszopiclone may help with the patient's sleep symptoms but will not alleviate other symptoms of PTSD. Propranolol may be necessary if the patient develops aggression and/or anger symptoms, but at this time, the patient needs a serotonergic antidepressant to treat the core symptoms of PTSD.
    References:

    1. Bandelow B, Sher L, Bunevicius R, et al.; WFSBP Task Force on Mental Disorders in Primary Care; WFSBP Task Force on Anxiety Disorders, OCD and PTSD. Guidelines for the pharmacological treatment of anxiety disorders, obsessive-compulsive disorder and posttraumatic stress disorder in primary care. Int J Psychiatry Clin Pract 2012;16:77-84. Erratum in: Int J Psychiatry Clin Pract 2012;16:242.
    2. Cukor J, Spitalnick J, Difede J, et al. Emerging treatments for PTSD. Clin Psychol Rev 2009;29:715-26.
