Pharmacotherapy for the Treatment of Nicotine Dependence

A. Module Description

The Public Health Service guideline recommends that all tobacco users trying to quit be offered pharmacotherapy. There are currently seven first-line medications approved by the FDA for use in smoking cessation: five nicotine replacement products; bupropion, an anti-depressant; and varenicline, a partial nicotine agonist. While the effectiveness of each product has been demonstrated there are multiple factors to be considered when choosing the appropriate pharmacotherapy for each individual.

The principles of evidence-based medicine will be reviewed and applied to the pharmacologic treatment of tobacco dependence. This course will provide an overview of factors specific to each medication (agent factors), individual client considerations and medical issues to be addressed when recommending a course of therapy.

The anticipated effects of the seven first-line tobacco treatment medications for patients with the following conditions will be discussed: Cardiovascular Disease (CVD), Chronic Obstructive Pulmonary Disease (COPD), Diabetes Mellitus (DM), Substance Use Disorders, and select Mental Illnesses. The use of these medications for special populations including pregnant and lactating women, and adolescents also will be reviewed.

B. Goal of the module

1. Provide tobacco treatment specialists with the knowledge required to apply the principles of evidence-based practice in the use of pharmacotherapy to treat tobacco dependence.
2. Provide sufficient background information regarding considerations when recommending pharmacotherapy for clients with CVD, COPD, DM, Substance Use Disorders, and select Mental Illnesses, clients who are pregnant or nursing, and adolescents.

C. Learning objectives

1. Review current pharmacological approaches to treatment of nicotine dependence.
2. Describe and apply evidence-based medicine principles to pharmacological treatment for nicotine dependence.
3. Understand the anticipated effects of the different forms of pharmacologic treatment in select medical conditions.
4. List additional special concerns and issues that affect the choice of pharmacologic treatment.
D. Outline

1. Review of pharmacotherapy options and mechanisms of action
2. Selecting medications
   a. Evidence-base practice
   b. Agent factors
      i. Effectiveness
         1. mono-therapy, combinations
         2. Pre-treatment and cut-down to quit
         3. High dose NRT
      ii. Side Effects
      iii. Cost
      iv. Addiction Potential
      v. Compliance and Convenience
   c. Patient factors
      i. Level of nicotine dependence
      ii. Prior experience
      iii. Access to medications
      iv. Preferences and confidence
      v. Beliefs and cultural considerations
   d. Medical and psychiatric issues
      i. Precautions
      ii. Coronary artery disease
      iii. Chronic obstructive pulmonary disease
      iv. Diabetes
      v. Pregnancy
      vi. SUD/MH
      vii. Drug interactions
   e. Special conditions and issues
      i. weight gain, adolescents, hazards of smoking cessation
Pharmacotherapy Review Questions/Answers

Use the Pharmacologic Product Guide to review each answer thoroughly.

1) Name the 7 first line medications approved for tobacco treatment.
   A: Nicotine Patch
   Nicotine Gum
   Nicotine Lozenge
   Nicotine Oral Inhaler
   Nicotine Nasal Spray
   Bupropion SR (Zyban)
   Varenicline (Chantix/Champix)

2) Which of the 7 first line medications is the easiest to use and has been shown to have good compliance?
   A: Nicotine Patch

3) What are the instructions for the use of the nicotine gum?
   A: Chew until a peppery taste/tingling begins, park between cheek and gum, repeat. Avoid food and drink for 15 minutes before and during use.

4) Which NRT product is absorbed most rapidly?
   A: Nasal spray

5) At the end of one week of gradually increasing doses (titration), what is the full recommended dosage of Chantix?
   A: 1mg/2x a day – total of 2mg/day

6) How long before quit date should bupropion be started?
   A: At least two weeks

7) What dosage of the lozenge is recommended for someone who smokes within 30 minutes after waking?
   A: 4 mg

8) What would you recommend to the client who complains of vivid dreams while on the patch?
   A: remove the patch at night, replace with a new one in the morning

9) How can nausea while taking varenicline be minimized?
   A: Always take with food – especially a full meal. For some mid-meal helps the best. Some may need to reduce to 0.5 mg twice a day. This dose will be effective for some, not all.
10) What is the recommended full dosage of bupropion?
   A: 150 mg/2x day = 300 mg daily

11) What would you recommend to the client who is experiencing some insomnia while taking bupropion?
   A: Take the first dose as early in the morning as possible and take the second by mid-afternoon

12) What does one dose of the nasal spray consist of?
   A: One spray in each nostril

13) True or False: the nicotine contained in the oral inhaler is absorbed by inhaling into the lungs
   A: False – it is absorbed in the oral mucosa. The inhaler should be ‘puffed’ to release the nicotine into the mouth.

14) What is the manufacturers recommended dosage of nicotine patch for a 20 cigarette per day smoker?
   A: 21 mg patch

15) Name at least one advantage and one disadvantage for each of the 7 first line medications.
   A: (responses will vary – be sure most of the items listed on Pharmacologic Product Guide are covered)
   Patch:
   Gum:
   Lozenge:
   Inhaler:
   Nasal Spray:
   Bupropion:
   Varenicline: