Pharmacotherapy for the Treatment of Nicotine Dependence

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“Pharmacotherapy should be offered to all smokers trying to quit except for special circumstances.”

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Tobacco dependence is a chronic disease

- Tobacco dependence requires ongoing rather than acute care
- Relapse is a component of the chronic nature of the nicotine dependence — not an indication of personal failure by the patient or the clinician
Withdrawal Symptoms

- Anxiety/Irritability
- Poor concentration
- Restlessness
- Craving
- Headaches
- Drowsiness
- Depression
- Hunger
First-line pharmacotherapy

Nicotine Replacement Therapy
- Patch
- Gum
- Lozenge
- Inhaler
- Nasal spray

Non nicotine replacement
Bupropion (Zyban)
Pharmacotherapy
Nicotine Replacement Therapy (NRT)

- No evidence that nicotine causes cancer
- No evidence of increased cardiovascular risk with NRT
- Medical contraindications:
  - immediate myocardial infarction (< 2 weeks)
  - serious arrhythmia
  - serious or worsening angina pectoris
  - accelerated hypertension

Plasma nicotine levels after a cigarette vs. different types of pharmacotherapy
NRT: Nicotine patch

- 24 hr (21, 14, 7mg) Nicoderm/generic or
- 16 hr (15, 10, 5 mg) Nicotrol
- Available OTC
- A new patch is applied each morning
- Rotating placement site can reduce irritation
- 6 weeks for 1st dose-taper over 4-6 weeks
- Side effects: Insomnia, local rash
NRTs: Patches Need to be Individualized

- <10 CPD may consider 7mg
- 10-15 CPD = 14-21 mg/day patch
- 15-20 CPD = 21 mg/day

- 21mg=21 cigs/d
- 14mg=14 cigs/d
NRT: Nicotine gum

- 2 mg (<25 cigs) vs 4 mg (>24)
- 2 mg = 1 cigarette  4 mg = 2 cigarettes
- 1-2 per hour for first 6 weeks-taper
- Chew (release peppery taste) and park, continue for 30 minutes
- Absorbed in a basic environment, avoid acidic beverages 30 minutes pre and post dose (coffee, juice)
- Use enough pieces each day (max 24)
- Side effects: dyspepsia, mouth soreness
Nicotine Lozenge (OTC)

- 2 mg smoke cig >30 minutes on waking
- 4 mg smoke <30 minutes
- Allow to dissolve 30 min
- Cannot drink or eat 15 minutes before using
- First 6 weeks take one q1-2 hr (9-20 /day) than taper up to 6 weeks
- Side effects: Dyspepsia, nausea, hiccups, local throat/mouth irritation
NRT: Nicotine inhaler

- Available by prescription
- 20 minutes continuing puffing per dose (80 puffs per dose delivers 4 mg)
- 6-16 cartridges per day for 12 weeks
- Eating or drinking before and during administration should be avoided
NRT: Nicotine nasal spray

- Available by prescription
- Patient should not sniff, swallow, or inhale the medication
- A dose is 2 squirts, one to each nostril
- Initial dosing should be 1 to 2 doses per hour, increasing as needed up to 6-8 weeks and then taper
- Dosing should not exceed 40 doses per day
Bupropion SR (Zyban®)

- Mechanism of action: presumably blocks neural reuptake of dopamine and/or norepinephrine

- Dosing:
  - start 2 weeks before quit date
  - 150 mg orally once daily x 3 day
  - 150 mg orally twice daily x 7-12 weeks
  - no taper necessary at end of treatment

- Maintenance - efficacious as maintenance medication for 6 months post-cessation
Bupropion SR (Zyban®)

- **Contraindications**
  - Seizure disorder
  - Current use of Wellbutrin
  - Bulimia/anorexia
  - MAO inhibitor in past 14 days
  - Heavy alcohol use

- **Side effects:**
  - Dry mouth
  - Insomnia (avoid bedtime dose)
Estimated odds ratio for long term abstinence

- Patch: 1.81
- Gum: 1.66
- Inhaler: 2.14
- Spray: 2.35
- Lozenge: 2.05
- Bupropion: 2.1

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Factors to Consider When Choosing a Pharmacotherapy

- Patient preference
- Clinician familiarity with the medications
- Contraindications for selected patients
- Previous patient experiences with a specific agent (positive or negative)
- Patient characteristics (concern about weight gain, history of depression)
## Medication – Daily Cost

<table>
<thead>
<tr>
<th>Medication</th>
<th>Daily Cost</th>
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</thead>
<tbody>
<tr>
<td>Bupropion 150 SR</td>
<td>$3.00 /day</td>
</tr>
<tr>
<td>Transdermal 7 to 21</td>
<td>$4.00 / patch ($40/box 14)</td>
</tr>
<tr>
<td>Lozenge 2mg or 4 mg</td>
<td>$7.00 / 10 pieces</td>
</tr>
<tr>
<td>Gum 2 mg or 4 mg</td>
<td>$5.00 / 10 pieces</td>
</tr>
<tr>
<td>Nasal Spray</td>
<td>$6.00 / 12 sprays</td>
</tr>
<tr>
<td>Inhaler</td>
<td>$11.00 / 10 cartridges</td>
</tr>
</tbody>
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