Pharmacological Treatments for Tobacco Users with Behavioral Health Conditions

Jill M Williams, MD
Professor Psychiatry
Director, Division Addiction Psychiatry
Robert Wood Johnson Medical School
Disclosures

• Grant Support from Pfizer
• Consultant Pfizer
• Grant support from NCI, NIDA, NIMH, NJDMHAS, ABPN
• Consultant and Speaker for American Lung Association, Florida Council for Community Mental Health
Objectives

• Discuss issues relevant to pharmacotherapy in smokers with mental illness/ SUD

• Review data that indicates smokers with mental illness/ SUD are more dependent than other smokers

• To review results of a recent DBPC trial comparing treatments in smokers with and without mental illness
51 Million Smokers in US Today
At least one third have a mental illness

~ 16 Million Smokers with Mental Illness

NCS-R 2001-2003; Diagnoses using CIDI
Improved Mental Health with Quitting Smoking

- Meta-analysis 26 studies (14 gen pop, 4 psychiatric, 3 physical conditions, 2 psychiatric or physical, 2 pregnant, 1 post-op)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No of studies included</th>
<th>No of studies excluded</th>
<th>Standardised mean difference (95% CI)</th>
<th>Effect estimate</th>
<th>Original effect estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>4</td>
<td>0</td>
<td>-0.37 (-0.70 to -0.03)</td>
<td>-0.37 (-0.70 to -0.03)</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>9</td>
<td>1</td>
<td>-0.29 (-0.42 to -0.15)</td>
<td>-0.25 (-0.37 to -0.12)</td>
<td></td>
</tr>
<tr>
<td>Mixed anxiety and depression</td>
<td>4</td>
<td>1</td>
<td>-0.36 (-0.58 to -0.14)</td>
<td>-0.31 (-0.47 to -0.14)</td>
<td></td>
</tr>
<tr>
<td>Psychological quality of life</td>
<td>4</td>
<td>4</td>
<td>0.17 (-0.02 to 0.35)</td>
<td>0.22 (0.09 to 0.36)</td>
<td></td>
</tr>
<tr>
<td>Positive affect</td>
<td>1</td>
<td>2</td>
<td>0.68 (0.24 to 1.12)</td>
<td>0.40 (0.09 to 0.71)</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>2</td>
<td>1</td>
<td>-0.23 (-0.39 to -0.07)</td>
<td>-0.27 (-0.40 to -0.13)</td>
<td></td>
</tr>
</tbody>
</table>

Taylor et al, BMJ, 2014
Need for Pharmacotherapy in Tobacco Users w/MI and SUD

No reason not to use
NRT is not a “new drug”
First line treatment/ Recommended all Comfortable detox for temporary abstinence
Higher levels of nicotine dependence
### Medication Interactions with Tobacco Treatments

<table>
<thead>
<tr>
<th>Medication</th>
<th>CYP Enzyme</th>
<th>Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine</td>
<td>CYP2A6</td>
<td>None</td>
</tr>
<tr>
<td>Bupropion</td>
<td>CYP2B6</td>
<td>Many</td>
</tr>
<tr>
<td></td>
<td>CYP2D6 inhibitor</td>
<td></td>
</tr>
<tr>
<td>Varenicline</td>
<td>Excreted in urine</td>
<td>None</td>
</tr>
</tbody>
</table>
Why are Patients Not Quitting?

• Neurobiological
• Psychological
• Social & Environmental
• Spiritual & Advocacy
• Treatment System & Institutional

• Greater dependence
• Poor coping; low confidence
• Live with smokers
• No hope; No peers succeeding
• Limited access help
Smokers with depression smoke more cpd and are more dependent

Figure 3. Percentage of current smokers aged 20 and over, by time of first cigarette and amount smoked per day, by depression status: United States, 2005–2008

1Significantly different from no depression.

Smokers with SMI Have High Levels of Tobacco Dependence

80% Moderately to Severely Dependent

<table>
<thead>
<tr>
<th>Measure</th>
<th>SPD* (SMI)</th>
<th>Non-SPD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDSS</td>
<td>49.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>FTND</td>
<td>57.6%</td>
<td>42.1%</td>
</tr>
<tr>
<td>TTFC ≤ 5mins</td>
<td>29.2%</td>
<td>19.3%</td>
</tr>
</tbody>
</table>

*SPD by K6; NSDUH 2002

Williams et al., 2011; Hagman et al., 2008
Smokers in Addiction Treatment are Moderately to Severely Addicted to Nicotine

N=1882 smokers in NJ addictions treatment, 2001-2002;

Williams et al., 2005
Individuals with schizophrenia highly addicted

4 minute Nicotine Boost (ng/mL)
25.2 vs. 11.1; p<0.01

Greater nicotine intake per cigarette

Williams NTR 2010
Tobacco Withdrawal

4 or more
Depressed mood
Insomnia
Irritability, frustration or anger
Anxiety
Difficulty concentrating
Restlessness
Increased appetite or weight gain
Tobacco Dependence is in the DSM-5

Activation of the reward pathway by addictive drugs

- alcohol
- cocaine
- heroin
- nicotine
## Effectiveness of First Line Medications

Results from meta-analyses comparing to placebo (6 month F/U)

<table>
<thead>
<tr>
<th>Medication</th>
<th>No. Studies</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nic. Patch (6-14 wks)</td>
<td>32</td>
<td>1.9</td>
<td>1.7-2.2</td>
</tr>
<tr>
<td>Nic. Gum (6-14 wks)</td>
<td>15</td>
<td>1.5</td>
<td>1.2-1.7</td>
</tr>
<tr>
<td>Nic. Inhaler</td>
<td>6</td>
<td>2.1</td>
<td>1.5-2.9</td>
</tr>
<tr>
<td>Nic. Spray</td>
<td>4</td>
<td>2.3</td>
<td>1.7-3.0</td>
</tr>
<tr>
<td>Bupropion</td>
<td>26</td>
<td>2.0</td>
<td>1.8-2.2</td>
</tr>
<tr>
<td>Varenicline (2mg/day)</td>
<td>5</td>
<td>3.1</td>
<td>2.5-3.8</td>
</tr>
</tbody>
</table>

PHS Clinical Practice Guideline 2008 Update
Varenicline and Neuropsychiatric Side Effects

- Meta analysis 39 RCT (10,761 participants)
- Study not sponsored by Pfizer
- Industry and non-industry funded studies

- No increased risk of suicide
- No increased risk of suicidal ideation
- No increased risk of depression
- No increased risk of irritability
- No increased risk of aggression
- Increased risk of sleep disorders
- Increased risk of insomnia
- Increased risk of abnormal dreams
- Reduced risk of anxiety

Thomas et al., 2015; BMJ
Neuropsychiatric Safety and Efficacy
Varenicline, Bupropion, Nicotine Patch
Smokers with and without Psych Disorders (EAGLES)

- 8144 (4416 psych and 4028, non psych by SCID)
- Triple dummy (DB-PC) x 12 weeks
  - 21mg patch taper
  - Varenicline mg BID
  - Bupropion 150 BID
- Largest smoking cessation study
- 33% lifetime suicidal ideation (12% behavior); 50% on psych meds
  - 70% depression/bipolar
  - 20% anxiety d/o
  - 10% psychotic
  - 1% personality disorder
- Brief weekly counseling
- Funded Pfizer and Glaxo (GSK)

Anthenelli et al., Lancet 2016
Varenicline superior to BUP and NP overall and in psych and non psych cohorts

Anthenelli et al., Lancet 2016
Neuropsychiatric Composite

- Anxiety/ Panic
- Depression
- Feeling abnormal
- Hostility
- Agitation
- Aggression
- Delusions
- Hallucinations/ Paranoia/ Psychosis
- Homicidal ideation
- Mania
- Suicidal ideation or behavior

Anthenelli et al., Lancet 2016
Rates of Neuropsychiatric Adverse Events

Side effects: Nausea, insomnia, abnormal dreams, headache

Anthenelli et al., Lancet 2016
Conclusions

Treatments increase the success rates and should be used in all smokers.

Many behavioral health conditions associated with greater levels of tobacco dependence.

Varenicline is safe and effective in the population and has greater efficacy than prior treatments.

jill.williams@rutgers.edu
RUTGERS
Robert Wood Johnson Medical School

Register today

Treating Tobacco Dependence in Behavioral Health Settings

Treating Tobacco Dependence in Behavioral Health Settings is a two-day training developed for psychiatrists, nurses, counselors and other mental health professionals, which prepares the practitioner to effectively deliver tobacco services to smokers with mental illness.

Two-Day CE/CME Activity
November 17 & 18, 2016

Location: Rutgers Robert Wood Johnson Medical School
Liberty Plaza, Third Floor
335 George Street, New Brunswick, NJ 08901

Activity Director: Jill M. Williams, MD
Professor of Psychiatry
Chief, Division of Addiction Psychiatry

Marc L. Steinberg, PhD
Associate Professor of Psychiatry

Nina Cooperman, PsyD
Assistant Professor of Psychiatry

Patricia Dooley, MA
LPC, CTTS
Mental Health Clinician, Tobacco Treatment Specialist

Jose Cruz, LCSW
Mental Health Clinician, Addiction Consultants, ASPARC Program

http://ccoe.rbhs.rutgers.edu/catalog/courses/pdf/17MR05.pdf