EMERGING ISSUES IN SMOKING CESSATION

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Faculty/Presenter Disclosure

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Relationships with commercial interests:

Grants/Research Support: Pfizer
Honoraria: Pfizer, Johnson & Johnson
Consulting Fees: Pfizer, Johnson & Johnson
Disclosure of Commercial Support

• None
Mitigating Potential Bias

Evidence-based, best practice approaches to addressing nicotine addiction will be presented.
Harm reduction potential – Vapour vs. Smoke
Cessation of smoking? Dual-Use?
Tobacco industry – Perpetuation of smoking?
Initiation of smoking? – Adolescents?

The E-cigarette.
<table>
<thead>
<tr>
<th>e-cigarette use</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school students</td>
<td>4.5%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Middle school students</td>
<td>1.1%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>
WHY QUIT?
SWITCH TO BLU

blu is the smart choice for smokers wanting a change. Take back your freedom to smoke when and where you want without ash or smell. Enjoy everything you enjoy about smoking and nothing else.

Nobody likes a quitter, so make the switch today.

Visit blucigs.com
Find Out How Megan Can... Smoke Anywhere

Learn More

Cigarette Technology Alert

New Smoking Technology Featured On:
- CNN
- MSNBC
- US News
- Scientific American
Wild Candy Flavors

GUMMY BEARS
Electronic cigarettes for smoking cessation and reduction (Review)

McRobbie H, Bullen C, Hartmann-Boyce J, Hajek P
Electronic Cigarettes for Smoking Cessation: A Systematic Review

Muhammad Malas MPH\textsuperscript{1}, Jan van der Tempel MPhil\textsuperscript{2}, Robert Schwartz PhD\textsuperscript{3}, Alexa Minichiello MSc\textsuperscript{1}, Clayton Lightfoot BA\textsuperscript{4}, Aliya Noormohamed MSPH\textsuperscript{5}, Jaklyn Andrews MA\textsuperscript{4}, Laurie Zawertailo PhD\textsuperscript{6}, Roberta Ferrence PhD\textsuperscript{6}

In accordance with the GRADE system, the quality of the evidence in support of e-cigarettes’ effectiveness in helping smokers quit was assessed as very low to low, and the evidence on smoking reduction was assessed as very low to moderate.

While inconclusive due to low quality, overall the existing literature suggests e-cigarettes may be helpful for some smokers for quitting or reducing smoking.
Varenicline

Influences neurotransmitters and receptors
Addresses the neurochemistry of addiction
Nicotine activates the α4β2 receptor.
Varenicline

\( \alpha 4 \beta 2 \) receptor
Varenicline Causes Psychiatric Problems
Systematic studies do not support the view that varenicline causes neuropsychiatric side effects other than sleep disturbance and vivid dreams.
“EAGLES”
‘EAGLES’ – Study Design
8000 subjects: 4000 Psychiatric. 4000 Non-Psychiatric.

Screening Visit
Baseline Randomization

Begin dosing bupropion and varenicline

Begin 0.5 mg BID (Day 4)
Begin 1 mg BID (Day 8)
Begin 150 mg BID (Day 4)
Begin 21 mg QD (Day 8)

Primary Efficacy Endpoint: Week 9-12 Continuous Abstinence Rate
Secondary Efficacy Endpoint: Week 9-24 Continuous Abstinence Rate

Varenicline

Bupropion

Nicotine Patch

Placebo

Target Quit Date

Study Visits (weeks)*
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Treatment Phase Non-treatment Follow-up

* Up to 15 face-to-face visits and 11 telephone visits

‘EAGLES’: **Severe-Only NPS AEs**

<table>
<thead>
<tr>
<th></th>
<th>Varenicline</th>
<th>Bupropion</th>
<th>NRT</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Psychiatric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort, N</td>
<td>990</td>
<td>989</td>
<td>1006</td>
<td>999</td>
</tr>
<tr>
<td>NPS AE Endpoint, total, n (%)</td>
<td>13 (1.3%)</td>
<td>22 (2.2%)</td>
<td>25 (2.5%)</td>
<td>24 (2.4%)</td>
</tr>
<tr>
<td>Severe-only, n (%)</td>
<td>1 (0.1%)</td>
<td>4 (0.4%)</td>
<td>3 (0.3%)</td>
<td>5 (0.5%)</td>
</tr>
<tr>
<td><strong>Psychiatric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohort, N</td>
<td>1026</td>
<td>1017</td>
<td>1016</td>
<td>1015</td>
</tr>
<tr>
<td>NPS AE Endpoint, total, n (%)</td>
<td>67 (6.5%)</td>
<td>68 (6.7%)</td>
<td>53 (5.2%)</td>
<td>50 (4.9%)</td>
</tr>
<tr>
<td>Severe-only, n (%)</td>
<td>14 (1.4%)</td>
<td>14 (1.4%)</td>
<td>14 (1.4%)</td>
<td>13 (1.3%)</td>
</tr>
</tbody>
</table>

Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double-blind, randomised, placebo-controlled clinical trial

Robert M Anthenelli, Neal L Benowitz, Robert West, Lisa St Aubin, Thomas McRae, David Lawrence, John Ascher, Cristina Russ, Alok Krishen, A Eden Evins

“The study did not show a significant increase in neuropsychiatric adverse events attributable to varenicline or placebo relative to nicotine patch or placebo. Varenicline was more effective than placebo, nicotine patch, and bupropion in helping smokers achieve abstinence, whereas bupropion and nicotine patch were more effective than placebo.”
Varenicline causes CV problems*

* This zombie was first sighted in Canada
Risk of cardiovascular serious adverse events associated with varenicline use for tobacco cessation: systematic review and meta-analysis

Judith J Prochaska associate professor\(^1\), Joan F Hilton professor\(^2\)

\(^1\)Department of Psychiatry and Center for Tobacco Control Research and Education, University of California, San Francisco, CA 94143-0984;  
\(^2\)Department of Epidemiology and Biostatistics, University of California
Meta-analysis of all published, randomised controlled trials found no significant increase in cardiovascular serious adverse events associated with varenicline use.
“Smoking cessation therapies do not appear to raise the risk of serious cardiovascular disease events.”
### Medication Effectiveness

<table>
<thead>
<tr>
<th>Medication</th>
<th>Number of arms</th>
<th>Estimated odds ratio</th>
<th>% Estimated abstinence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placebo</td>
<td>80</td>
<td>1.0</td>
<td>13.8</td>
</tr>
<tr>
<td>Varenicline (2 mg/d)</td>
<td>5</td>
<td><strong>3.1</strong> (2.5-3.8)</td>
<td><strong>33.2</strong> (28.9-37.8)</td>
</tr>
<tr>
<td>Nicotine patch</td>
<td>32</td>
<td><strong>1.9</strong> (1.7-2.3)</td>
<td>23.4 (21.3-25.8)</td>
</tr>
<tr>
<td>Nicotine gum</td>
<td>15</td>
<td><strong>1.5</strong> (1.2-1.7)</td>
<td>19.0 (16.5-21.9)</td>
</tr>
<tr>
<td>Bupropion SR</td>
<td>26</td>
<td><strong>2.0</strong> (1.8-2.2)</td>
<td><strong>24.2</strong> (22.2-26.4)</td>
</tr>
<tr>
<td>Patch + Gum (ad lib)</td>
<td>3</td>
<td><strong>3.6</strong> (2.5-5.2)</td>
<td><strong>36.5</strong> (28.6-45.3)</td>
</tr>
<tr>
<td>Patch + Bupropion</td>
<td>3</td>
<td><strong>2.5</strong> (1.9-3.4)</td>
<td>28.9 (23.5-35.1)</td>
</tr>
</tbody>
</table>

Combination therapy of varenicline with nicotine replacement therapy is better than varenicline alone: a systematic review and meta-analysis of randomized controlled trials

Ping-Hsun Chang¹, Chien-Hsieh Chiang¹,²,³, Wei-Che Ho¹, Pei-Zu Wu¹, Jaw-Shiun Tsai¹,² and Fei-Ran Guo¹,²

Conclusions
The combination therapy of varenicline with NRT is more effective than varenicline alone in smoking cessation. This effect is more evident if pre-cessation treatment of nicotine patch is administrated. The adverse events of combination therapy are comparable to varenicline mono-therapy with the exception of skin reactions. Larger RCTs are needed to make more robust conclusions.
Cannabis Sativa

Marijuana 2017: Some Considerations
CANNABIS USE IN CANADA

Canada has one of the highest rates of cannabis use in the world.

- 40% of Canadians have used cannabis
- 10% of Canadians have used cannabis in the past year
- 20% of Canadians aged 15-24 years used cannabis in the past year
- 70% of Canadian cannabis users are age 25 or older

Centre for Addiction and Mental Health (CAMH)
Marijuana can be considered a very crude drug containing a very large number of chemical and pharmacological constituents, the properties of which are only slowly being understood.

Principal Cannabinoids: $\Delta^9 THC$, Cannabinol, Cannabidiol
Cannabis Sativa

Pot = leaves of cannabis plant
Hash = resin of cannabis plant

Marijuana can be inhaled or ingested in foodstuffs
Δ⁹-THC concentration of domestic and nondomestic samples with 95% confidence intervals.
“...it’s surprising how strong a lot of the marijuana is...we’ve seen potency values close to 30% THC, which is huge.”

(Potency used to be around 10% or less.)
**University of Ottawa Heart Institute Quit Smoking Programme**

**Characteristics of Marijuana Users (18% of QSP patients)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
<th>Occupation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>56%</td>
<td>Working</td>
<td>49%</td>
</tr>
<tr>
<td>Grade 9-11</td>
<td>16%</td>
<td>Unemployed</td>
<td>12%</td>
</tr>
<tr>
<td>Grade 12</td>
<td>19%</td>
<td>Disability</td>
<td>31%</td>
</tr>
<tr>
<td>Some post-secondary</td>
<td>42%</td>
<td>Retired</td>
<td>7%</td>
</tr>
<tr>
<td>No response</td>
<td>23%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The acute effects of smoking or eating cannabis include euphoria (‘high’) as well as cardiovascular, bronchopulmonary, ocular, psychological and psychomotor effects.

“...most reviews note that cannabis use is associated with impaired function on a variety of cognitive and short-term memory tasks.”
Alternate Delivery Systems
Marijuana Ingestion

Edible products do not permit the user to accurately gauge the effect of the dose consumed.

A “high” usually occurs after 30 minutes...but the effects may persist for 5 – 6 hours.

When marijuana products are consumed orally the effects are delayed but their duration is longer.

Users may have difficulty controlling the dose they consume when using edible marijuana products.
Safety Issues in the Workplace
Many studies focusing on the duration of impairment were conducted when marijuana typically had a much lower concentration.

The applicability of these studies to today’s more potent varieties is questionable as the duration of effect may be longer.
“Addiction (in about 9% overall, 17% of those who began use in adolescence and 25-50% of daily users).”
A non-psychoactive compound in marijuana:

**Cannabidiol (CBD)**

“...has anti-inflammatory, analgesic, anti-nausea, anti-emetic, anti-psychotic, anti-ischemic, anxiolytic, and anti-epilepsy activities.”

Therefore many potential beneficial properties.
Smoking is a leading cause of hospitalization and re-hospitalization.


Canadian Institute for Health Information, Health Indicators 2009.
“The Ottawa Model”

Identification
Documentation
Counseling
Pharmacotherapy
Long-term follow-up

Reid RD, Pipe AL, Quinlan B. *Can J Cardiol* 2006;22:775-780
KEEP CALM AND BE SYSTEMATIC
The **OMSC Primary Care Network** has reached over **83,000** tobacco users in Ontario!

83 Partner FHTs, FHNs, CHCs, NPLCs

174 Clinics in 13 LHINS

~ 740 MDs  ~ 350 RNs
~ 180 NPs  ~ 40 Pharmacists

Potential Reach:
~ 850,000 rostered patients
~ 155,000 tobacco users
~ 2.3 million visits/year
THE 3As: ASK, ADVISE, ACT

ASK AND DOCUMENT
Include tobacco use question as one of the patient’s vital signs

*Have you used any form of tobacco in the last 7 days?*

ADVISE AND REFER
Provide strong, personalized, non-judgmental advice to quit with offer of support

ACT
For Patient who is READY TO QUIT:
QUIT PLAN VISIT
• Strategic counselling
• Pharmacotherapy
• Follow-up/OMSC Smoker’s Follow-up Program

For Patient who is NOT READY TO QUIT:
• Follow-up/OMSC Smoker’s
• Follow-up Program
Delivering evidence-based smoking cessation treatment in primary care practice

Experience of Ontario family health teams

Sophia Papadakis MHA PhD Marie Gharib Josh Hambleton MHA Robert D. Reid PhD MBA Roxane Assi Andrew L. Pipe CMD

Canadian Family Physician • Le Médecin de famille canadien | VOL 60: JULY • JUILLET 2014

ASK

52% [Pre-Intervention] 62% [Post-Intervention]

ADVISE

39% [Pre-Intervention] 56% [Post-Intervention]

ASSIST

29% [Pre-Intervention] 47% [Post-Intervention]

QUIT ATTEMPTS

47% [Pre-Intervention]

SMOKE FREE

10% [Pre-Intervention] 21% [Post-Intervention] 31% [Registered for Telephone Follow-up Support]

3-fold Increase

15% Increase
“Assistance with smoking cessation is a fundamental responsibility of any practitioner who sees patients who are smokers.”
Systematic Approaches to Smoking Cessation in EVERY Clinical Setting
Smoking Cessation
The Most Important Preventive Intervention!
Transforming ...

Patient Care  Professional Behaviours  Institutional Practices