E-cigarettes and lung cancer patients: smoking cessation during chemotherapy treatment

Jennifer McKell
on behalf of study team
Feasibility & acceptability of electronic cigarettes as an aid to smoking cessation for lung cancer patients

Funded by: Roy Castle Lung Cancer Foundation

Grant Holders/Project Team
Professor Linda Bauld, University of Stirling
Dr Stephen Harrow, Beatson West of Scotland Cancer Centre
Dr Hayden McRobbie, University of Auckland, New Zealand
Ms Lesley Sinclair, University of Stirling
Dr Kirsten Laws, ANCOR Unit, Aberdeen Royal Infirmary
Ms Jennifer McKell, University of Stirling
Dr Allison Ford, University of Stirling
Ms Jennifer MacPhee, Beatson West of Scotland Cancer Centre
with assistance from Mr Andy Morrison, New Nicotine Alliance
Background

- In UK around 30% of lung cancer patients still smoking at time of diagnosis (Park et al 2012)
- Recent audit in study site found 2 out of 3 lung cancer patients being treated with curative intent with radiotherapy or combination chemo/radio therapy still smoking during treatment
- Continued smoking may have adverse outcomes for the patient and undermine treatment
Why electronic cigarettes?

• E-cigarettes form part of current tobacco harm reduction policy ‘landscape’ in UK (NICE, 2013, RCP, 2016)

• Controversial but widely used with est. 2.9 million users in Great Britain (ASH, 2017)

• Hypothesis: may be particularly valuable for groups of smokers who have tried other approaches to stopping smoking and failed
Aims and Objectives

• To inform the design of a future large scale trial by exploring:
  – feasibility of providing an e-cig starter kit to patients alongside advice and support on how to use device
  – acceptability of introducing e-cigs to patients in clinic settings
  – cessation outcomes during the cancer treatment period
  – patient, relative and professional views on e-cigs as a smoking cessation aid for this group
Methods

**Study Design:** 12 month pilot study with nested qualitative evaluation of feasibility & acceptability

**Participants:** 25 smokers aged >=18yrs with stage IV lung cancer about to start chemotherapy treatment

**Intervention:** Provision of 2nd generation e-cig & liquid with advice & support from experienced vaper

**Key Outcomes:** Feasibility & acceptability of stopping/reducing smoking using e-cig; smoking cessation (CO verified)/reduction at 4 & 16 weeks; perceptions of e-cig use & support offered

**Data collection:** Baseline in-home visit; follow-up at 3 days and 1,2,3,4 & 16 weeks
Sample Characteristics

• Final sample = 29
• 13 women (45%); 16 men (55%)
• Average age = 64 years but ranging from 48 to 78 years
• Average age started smoking = 14 years, ranging from 6 to 23 years
• 13 participants (45%) live in areas with a Scottish Index of Multiple deprivation (SIMD) score = 1 (SIMD=1 most deprived)
• Smoking status at baseline: 19 (66%) describe themselves as heavy smokers
Qualitative Evaluation

In-depth, semi-structured interviews with:

- 13 Participants (4 women and 9 men)
- 6 Significant Others (All female: 3 wives, 1 sister, 1 daughter and one friend)
- 8 Health Professionals (2 GPs, 2 oncologists, 2 respiratory consultants, 2 lung cancer nurse specialists)

One focus group with:

- 4 vaper volunteers (all male)
Results
Findings at 4 weeks

<table>
<thead>
<tr>
<th>Smoking status</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-smoker</td>
<td>9</td>
<td>35%</td>
</tr>
<tr>
<td>Smoker</td>
<td>11</td>
<td>42%</td>
</tr>
<tr>
<td>Unknown</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>LTFU -Withdrawn</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Findings at 16 weeks

<table>
<thead>
<tr>
<th>Smoking status</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-smoker</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>Smoker</td>
<td>14</td>
<td>54%</td>
</tr>
<tr>
<td>LTFU -Withdrawn</td>
<td>8</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>100%</td>
</tr>
</tbody>
</table>
Participants

• All participants motivated to quit smoking at baseline
• Accounts of making a complete switch to using an e-cig
• But also reductions in smoking alongside vaping and others struggling to adopt the e-cig and relapsing

I’ve no touched a cigarette for 6 weeks, a roll up for 6 weeks...I just stopped after about a week. ['George']

...the day came that I was down a wee bit and I just started again [smoking]. But I’ve been on and off all the time [vaping]. I’ve never stopped it. Anytime I go out, see if I go to the shops or go to the pub for a pint I take that with me rather than taking out the fags. ['Paul']
Factors affecting motivation to stop smoking with e-cigarette

• Level of satisfaction/pleasure compared to smoking

...if I do just that [vape], that’s me had my cigarette. My mind tells me I don’t need to worry about cigarettes or nothing. ['Brian']

I wasn’t getting any satisfaction...It’s more pleasurable [smoking]. You feel you are getting a return... You feel you are getting a return for a smoke. ['Stephen']
• Role of smoking as source of relaxation/stress relief

I’ve got to say it’s good, it can calm you down, and a couple of weeks ago it was my partner’s first anniversary who died, you know? We were together forty odd years...I knew I was going to smoke then...I knew just to calm you down. [‘Iain’]
Response to terminal diagnosis

*If I was’nae terminal, see if I had a 40% chance I’d have stuck on it probably because it’s a lot easier than everything else I’ve tried. [‘Paul’]*

*I think with getting this diagnosis as well, that made me more determined to get off it. It’s definitely helped me. [‘Claire’]*
Health Professionals

- Supportive of e-cigarettes as a tool for quitting and study

- Tension between personal bias vs professional evidence-based approach
  “There is lots of uncertainty about e-cigarettes... but given the evidence base, it is probably the right thing to do.” (Respiratory consultant)

- Future efforts should concentrate on patients with curable cancer
  “20-30% of people with stage 4 lung cancer decline very rapidly. Those people will very quickly disengage... if I was doing [the study] I would target my potentially curable patients. I find it hard to see that even if it has an effect, the volume of the effect won’t be big enough to be picked up” (Oncology consultant)
Conclusions

• E-cigarettes have a potential role to play for lung cancer patients
• Research needs to take account of the impact of participants’ emotional and physical health during treatment
• Smoking as a pleasure and aid to relaxation/stress relief also important
• Potential to explore e-cigarette use among patients with earlier stage lung cancer
Thank you for listening!
Questions?

j.e.mckell@stir.ac.uk
Study Flow Diagram

Potential oncology clinics identified

Study introduced to eligible patients by Oncologist/Clinical Nurse Specialist

Consent to pass contact details to study team & information sheet

Consent call & arrange home visit with vapor

Home visit:
- Written consent
- Baseline questionnaire - Smoking behaviour/history
  - Motivation to stop smoking / CO breath test
  - Mood & Physical symptoms
  - Wellbeing
- Experienced vapers:
  - Demonstrate how kit works
  - Find best combination (flavour/strength/voltage)
  - Let participant assemble kit
  - Side effects/battery safety
  - Give 4 weeks supply of e-juice

3 days: e-cig management/side effects

1, 2 & 3 weeks: e-cig use/tobacco use/side effects

4 weeks: smoking status/CO breath test (@ clinic)
  e-cig use/tobacco use/side effects
  other product use
  mood & physical symptoms
  wellbeing

16 weeks: smoking status/CO breath test (@ clinic)
  e-cig use/tobacco use/side effects
  other product use
  mood & physical symptoms
  wellbeing
  study experience

Qualitative interviews with lung cancer participants, family & friends and HPs
SmokeMax Power 1300

Power Button