In this issue:

- Financial incentives help pregnant smokers quit
- Varenicline enables gradual smoking cessation
- Increasing varenicline dose in smokers
- Do smoking cessation aids change across quit attempts?
- Alcohol and tobacco imagery in YouTube music videos
- Extended run-in bupropion for smoking cessation
- Higher BMI may affect NRT efficacy
- Proactive outreach engages low-SES smokers
- Chemical composition of E-cigs available in NZ
- A brief intervention reduces passive smoking in babies

Abbreviations used in this issue

BMI = body mass index
NRT = nicotine replacement therapy
SES = socioeconomic status

Welcome to issue 18 of Smoking Cessation Research Review.

Results of a multinational clinical trial described in this issue of Smoking Cessation Research Review provide good evidence as to varenicline successfully increasing smoking abstinence rates through smoking reduction. However, not all smokers respond to the standard varenicline tartrate dosing. In another trial that we discuss, the researchers evaluated whether increasing the varenicline dose enhances abstinence rates in nonresponders. According to the findings, increasing varenicline dose before quitting reduced participants’ smoking enjoyment but had no significant effect on tobacco withdrawal symptoms or smoking cessation. The study concludes that “the limits to treatment response to varenicline may be due to factors other than insufficient dosage”.

Recent research from the UK demonstrates that popular contemporary YouTube music videos watched by a large number of British adolescents include significant tobacco and alcohol content, including branding. A range of regulatory and non-regulatory approaches is available to reduce such content; is society willing to consider taking action?

We hope you enjoy the selection in this issue, and we welcome any comments or feedback.

Kind Regards,

Brent Caldwell
brentcaldwell@researchreview.co.nz

Natalie Walker
nataliewalker@researchreview.co.nz

Independent commentary by Dr Brent Caldwell.

Brent Caldwell is a Senior Research Fellow at Wellington Asthma Research Group, he is currently working on the Inhale Study. His main research interest is in identifying and testing improved smoking cessation methods, with a particular focus on clinical trials of new smoking cessation pharmacotherapies.

Independent commentary by Honorary Associate Professor Natalie Walker.

Dr Natalie Walker is an epidemiologist and leader of the Addiction Research programme at the National Institute for Health Innovation, University of Auckland. Natalie joined the University in 1995, and completed a PhD in cardiovascular epidemiology in 2000. Natalie currently holds a Heart Foundation Douglas Senior Fellowship in Heart Health (Prevention). Her primary area of interest is the conduct of phase III, community-based, clinical trials, particularly in the fields of smoking cessation, alcohol consumption, and heart health. She is a member of the Society for Research on Nicotine and Tobacco, and a board member of ASHI.

Disclosure Statement: Natalie Walker has provided consultancy to the manufacturers of smoking cessation medications, received honoraria for speaking at a research meeting and received benefits in kind and travel support from a manufacturer of smoking cessation medications. Natalie has also undertaken two trials of very low nicotine content cigarettes, which were purchased from two different tobacco companies. The companies concerned had no role in the development of the study design, data collection, data analysis, data interpretation, or writing of the trial publications.

HELP KIWIS BECOME SMOKEFREE NOW AND NZ CAN BE SMOKEFREE BY 2025.

At 12 weeks, smokers are around 4x more likely to quit with Champix than if they had taken placebo²

(OR 3.85, CI 2.69-5.50, p <0.0001 for CO confirmed 4 week continuous quit rate for week 9-12)

References: 1. Pharmac Special Authority Form Click here. 2. Champix Data Sheet. MINIMUM DATA SHEET: CHAMPIX® (varenicline tartrate) 0.5 mg and 1 mg tablets. Indications: Aid to smoking cessation. Contraindications: Hypersensitivity to varenicline or excipients. Precautions: Neuropsychiatric Symptoms: history of or underlying psychiatric illness, including changes in behaviour or thinking, anxiety, psychosis, mood swings, aggression, depression, suicide ideation and suicidal behaviour; patients and families to monitor; patients to stop taking CHAMPIX at first sign of symptoms and contact a health care professional immediately; ongoing follow-up until resolution. Seizures, hypersensitivity reactions, cardiovascular events, driving or operating machinery, alcohol consumption, pregnancy, lactation, severe renal impairment. See Data Sheet for details. Adverse Effects: Smoking cessation/nicotine withdrawal symptoms. Most common: nausea, headache, insomnia, nasopharyngitis, abnormal dreams, abdominal pain, constipation, fatigue, diarrhea, flu-like symptoms, vomiting, dyspepsia, dysgeusia, dry mouth, sleep disorder, back pain, change in appetite, somnolence, weight increased, arthralgia, anorexia, abdominal distension, rash, mood, dyspnoea, toothache, chest pain, gastrooesophageal reflux disease, pruritus. Post-marketing reports of myocardial infarction, stroke. See Data Sheet for details. Dosage and Administration: Patients should set a date to quit smoking and start dosing 1-2 weeks before this date. Alternatively, patients can start treatment and quit smoking between days 8 and 35 of treatment. Days 1-3: 0.5 mg once daily. Days 4-7: 0.5 mg twice daily. Day 8 - end of treatment: 1 mg twice daily. Patients should be reviewed for 12 weeks. An additional 12 weeks of treatment can be considered for those who need additional support. Retirement with varenicline is encouraged in patients who are motivated to quit and did not succeed with current treatment or who relapsed. Dose tapering not required at end of treatment. Dose reduction is required for patients with severe renal impairment. Patients who cannot tolerate adverse effects may have the dose lowered temporarily or permanently. See Data Sheet for details. Medicines Classification: Prescription Medicine. CHAMPIX is fully funded under Special Authority. Before prescribing please review Data Sheet available from MEDISAFE (www.medsafe.govt.nz) or Pfizer New Zealand Ltd (www.pfizer.co.nz)/Level 1, Suite 1A, Building 8, 8 Nugent St, Grafton, Auckland 1023 or call 0800 736 363. Registered trademark. V10115. P10135 March 2015.

For more information, please go to http://www.medsafe.govt.nz

www.researchreview.co.nz

a RESEARCH REVIEW publication

CONTACT Pfizer on 0800 736363 to discuss Champix and the support resources available.

Welcome to issue 18 of Smoking Cessation Research Review.

Results of a multinational clinical trial described in this issue of Smoking Cessation Research Review provide good evidence as to varenicline successfully increasing smoking abstinence rates through smoking reduction. However, not all smokers respond to the standard varenicline tartrate dosing. In another trial that we discuss, the researchers evaluated whether increasing the varenicline dose enhances abstinence rates in nonresponders. According to the findings, increasing varenicline dose before quitting reduced participants’ smoking enjoyment but had no significant effect on tobacco withdrawal symptoms or smoking cessation. The study concludes that “the limits to treatment response to varenicline may be due to factors other than insufficient dosage”.

Recent research from the UK demonstrates that popular contemporary YouTube music videos watched by a large number of British adolescents include significant tobacco and alcohol content, including branding. A range of regulatory and non-regulatory approaches is available to reduce such content; is society willing to consider taking action?

We hope you enjoy the selection in this issue, and we welcome any comments or feedback.

Kind Regards,

Brent Caldwell
brentcaldwell@researchreview.co.nz

Natalie Walker
nataliewalker@researchreview.co.nz
Financial incentives for smoking cessation in pregnancy: randomised controlled trial

Authors: Tappin D et al.

Summary: This study was conducted in one large health board area with a materially deprived, inner city population in the west of Scotland. It investigated the efficacy of a financial incentive added to routine specialist pregnancy stop smoking services versus routine care to help pregnant smokers quit. The study recruited 612 self-reported pregnant smokers aged ≥16 years in NHS Greater Glasgow and Clyde who were English-speaking, <24 weeks pregnant, and had an exhaled carbon monoxide breath test result of ≥7 ppm. Participants were randomised to either a control group (n=306) in which they were given routine care, offered a face-to-face appointment to discuss smoking and cessation and, for those who attended and set a quit date, the offer of free nicotine replacement therapy (NRT) for 10 weeks provided by pharmacy services, and 4 weekly support phone calls, or to an intervention group (n=308) consisting of routine care plus the offer of up to £400 of shopping vouchers: £50 for attending a face-to-face appointment and setting a quit date; then another £50 if at 4 weeks’ post-quit date exhaled carbon monoxide confirmed quitting; a further £100 was provided for confirmed validated abstinence of exhaled carbon monoxide after 12 weeks; a final £200 voucher was provided for validated abstinence of exhaled carbon monoxide at 34–38 weeks’ gestation. According to an intention-to-treat analysis, significantly more smokers in the incentives group versus the control group quit smoking (69 [22.5%] vs 26 [8.6%]). The relative risk (RR) of not smoking at the end of pregnancy was 2.63 (95% CI, 1.73 to 4.01; p<0.001); the absolute risk difference was 14.0% (95% CI, 8.2% to 19.7%). The number-needed-to-treat (where financial incentives need to be offered to achieve one extra quitter in late pregnancy) was 7.2 (95% CI, 5.1 to 12.2). The mean birth weight did not differ significantly between the intervention and control groups (3140 g vs 3120 g; p=0.67).

Reference: BMJ. 2015;350:h134

Abstract

Effect of varenicline on smoking cessation through smoking reduction: a randomized clinical trial

Authors: Ebbert JO et al.

Summary: This multinational clinical trial recruited 1510 cigarette smokers who were unwilling or unable to quit smoking within the next month, but who were willing to reduce smoking and make a quit attempt within the next 3 months. Participants were randomised to receive either 24 weeks of varenicline titrated to 1 mg twice daily (n=760) or placebo (n=750) with a reduction target of ≥50% in number of cigarettes smoked by 4 weeks, ≥75% by 8 weeks, and a quit attempt by 12 weeks. The 24-week treatment period was followed by a 28-week follow-up. Varenicline was associated with significantly higher continuous abstinence rates during weeks 15 through 24 compared with placebo (52.1% vs 6.9%; RR 4.6, 95% CI, 3.5 to 6.1). At weeks 21–24, continuous abstinence rates were 37.8% in the varenicline group and 12.5% in the placebo group (RR 3.0; 95% CI, 2.4 to 3.7; corresponding rates during weeks 21–52 were 27.0% and 9.9%, respectively (RR 2.7; 95% CI, 2.1 to 3.5). Serious adverse events occurred in 3.7% of the varenicline group and 2.2% of the placebo group (p=0.07).


Abstract

Increasing varenicline dose in smokers who do not respond to the standard dosage: a randomized clinical trial

Authors: Hajek P et al.

Summary: In this trial, 503 smokers attending a stop smoking clinic commenced standard varenicline tartrate dosing, gradually increasing to 2 mg/day, 3 weeks before their target quit date (TQD). On day 12, a total of 200 participants reporting no strong nausea, no clear reduction in smoking enjoyment and <50% reduction in their baseline smoking were randomised to receive dose increases of twice-daily varenicline (0.5 mg) or placebo; dose increases could also take place on days 15 and 18 (up to a maximum of 5 mg/day). The dose increase reduced smoking enjoyment during the pre-quit period (mean ratings were 1.7 for varenicline and 2.1 for placebo; p=0.001) but did not affect the mean frequency of urges to smoke at 1 week after the TQD, their strength, or the severity of withdrawal symptoms. Likewise, the dose increase did not affect smoking cessation rates for varenicline versus placebo at 1, 4, and 12 weeks after the TQD. Varenicline was associated with significantly more nausea and vomiting compared with placebo (both comparisons p<0.001).

Reference: JAMA Intern Med. 2015;175(2):266-71

Abstract

Associations between use of pharmacological aids in a smoking cessation attempt and subsequent quitting activity: a population study

Authors: Ferguson SG et al.

Summary: This analysis involved data from the Smoking Toolkit Study, a UK national household survey, in which 5489 smokers completed questionnaires at baseline and again at 6 months’ follow-up. They were asked about treatment/s – prescription medication/s (bupropion, varenicline or NRT), over-the-counter NRT or unaided – that they had used in their most recent quit attempt (at baseline), and any use of treatment/s for a quit attempt in the last 3 months at follow-up. Smokers who had tried to quit at baseline were more likely to report having tried to quit again prior to follow-up (all odds ratios [ORs] ≥2.19 vs no attempt at baseline; p<0.001). Smokers who tried to quit using pharmacological aids were more likely to try to quit again at follow-up (all ORs ≥2.19 vs no attempt at baseline; p<0.001). Smokers were more likely to re-try aids they had used previously (all ORs ≥1.48 vs no attempt at baseline; p<0.01).

Reference: Addiction. 2015;110(3):513-8

Abstract
Adolescents' exposure to tobacco and alcohol content in YouTube music videos

Authors: Cranwell J et al.

Summary: These researchers performed a 10-second interval content analysis of alcohol, tobacco or electronic cigarette (E-cig) imagery in all UK Top 40 YouTube music videos during a 12-week period in 2013/14. Adolescent exposure to such content was assessed by an on-line national survey of adolescent viewing of the 32 most popular high-content videos. The survey was completed by 2068 adolescents (11–18 years). Alcohol imagery appeared in 45% of all videos, tobacco in 22% and E-cigs in 2%. Alcohol branding appeared in 7% of videos, tobacco branding in 4% and E-cigs in 1%. The most frequently observed alcohol, tobacco and E-cig brands were, respectively, Absolut Tune, Marlboro and E-Lites. At least one of the 32 most popular music videos containing alcohol or tobacco content had been seen by 81% of adolescents surveyed, and of these 87% had re-watched at least one video. The average number of videos seen was 7.1. Girls were much more likely to watch and also re-watch the videos than boys (p<0.001).

Comment (NW): Hah – Tell me something I didn’t know – and don’t forget the violence and sexual imagery as well. So what can we do – stronger internet filters and work more with YouTube and the music industry to encourage censorship? YouTube have community guidelines http://www.youtube.com/yt/policyandsafety/communityguidelines.html and I believe alcohol and tobacco imagery fall under the ‘Harmful or dangerous content’ section.


Abstract

Does extended pre-quit bupropion aid in extinguishing smoking behavior?

Authors: Hawk LW et al.

Summary: This study assessed whether an extended run-in (4 weeks) of pre-quit bupropion results in greater pre-quit reductions in smoking rate and cotinine, and greater short-term abstinence, as compared with the standard run-in of 1 week of pre-quit bupropion. Ninety-five adult smokers were randomised to a standard run-in group (n=48; 3 weeks placebo, then 1 week bupropion pre-quit) or an extended run-in group (4 weeks pre-quit bupropion; n=47). Both groups received group behavioural counselling and 7 weeks of post-quit bupropion. During the pre-quit period, the extended use of bupropion resulted in a greater decrease in smoking rate, compared to the standard run-in group (p=0.03). Cigarette craving and salivary cotinine followed a similar pattern, though the latter was evident only among women. Extended run-in bupropion also demonstrated greater biochemically verified 4-week continuous abstinence rates (53% vs 31% with standard run-in bupropion; p=0.033). Interestingly, although women had greater reductions in cigarette craving and salivary cotinine compared with men, women were less likely than men to be abstinent (biochemically verified 4-week continuous abstinence rates were 32% and 53%, respectively; p=0.039).

Comment (BC): Giving smokers four weeks of pre-cessation bupropion, rather than the standard one week, will assist more to quit smoking in the short term, particularly for male smokers. The effect of bupropion on reducing the reinforcement of smoking may be enhanced by combining pre-quit bupropion with nicotine patch therapy, thereby potentially increasing abstinence. Bupropion could also be combined with a rapid-acting NRT, but the advantage of patch is it only has to be applied once a day, whereas rapid-acting NRT requires smokers to remember to use them regularly. Another option would be to combined bupropion with naltrexone, which can reduce weight gain.

Reference: Nicotine Tob Res. 2015 Jan 14. [Epub ahead of print]

Differential efficacy of nicotine replacement among overweight and obese women smokers

Authors: Strong DR et al.

Summary: These researchers examined whether higher body mass index (BMI) affects the efficacy of the nicotine patch in this secondary analysis of data from two large trials of transdermal nicotine replacement in general medical practices. They also examined the potential for gender to further moderate the relationship between BMI and treatment efficacy. In the placebo-controlled trial (n=1621), 21-mg patch was no more effective than placebo for assisting biochemically verified point prevalence abstinence up to 1 year after quitting for women with higher BMI, but appeared to be effective for men at normal or high BMI (gender × BMI beta = −0.22; p=0.004). While long-term cessation outcomes did not differ among male or female smokers in the 15-mg patch trial (n=705), rates of early lapse were significantly higher in both trials among women with higher BMI, but appeared to be effective for men at normal or high BMI (gender × BMI beta = −0.22; p=0.004). While long-term cessation outcomes did not differ among male or female smokers in the 15-mg patch trial (n=705), rates of early lapse were significantly higher in both trials among women with higher BMI treated with nicotine patch.

Comment (BC): Although this trial was unable to determine why patch therapy was not as effective in women who were obese, it is likely that a higher dose of nicotine, and addressing concerns about post-cessation weight gain, would obviate the effect of obesity on patch therapy for women. Obese women could use two Step1 patches simultaneously; add nicotine lozenges to patch therapy; use patch plus the appetite-supressing bupropion+naltrexone therapy; and also take part in a weight loss programme.

Reference: Nicotine Tob Res. 2014 Dec 6. [Epub ahead of print]
Proactive tobacco cessation outreach to smokers of low socioeconomic status: a randomized clinical trial

Authors: Haas JS et al.

Summary: These researchers evaluated the effectiveness of a proactive tobacco cessation strategy designed to address sociocultural mediators of tobacco use in smokers of low socioeconomic status (SES). An analysis of electronic health records (EHRs) identified potentially eligible low-SES adult smokers receiving primary care in the greater Boston area and the study researchers used interactive voice response techniques to reach out to them. Consent-seeking patients were randomised to either receive usual care from their own health care team (control group, n=308) or enter an intervention program that included (1) telephone-based motivational counseling, (2) free NRT for 6 weeks, (3) access to community-based referrals to address sociocultural mediators of tobacco use, and (4) integration of all these components into their normal health care through the electronic health record system (intervention group, n=339). At 9 months after study entry, self-reported past-7-day tobacco abstinence (quit rates) were higher in the intervention group compared with the usual care group (17.8% vs 8.1%; OR 2.5; 95% CI, 1.5 to 4.0; number needed to treat, 10). When the researchers examined whether use of intervention components was associated with quitting, participating in the telephone counseling was associated with a higher likelihood of quitting than not participating (21.2% vs 10.4%; p<0.001). There was no difference in quitting by use of NRT. Quitting did not differ by a request for a community referral, but individuals who used their referral were more likely to quit than those who did not (43.6% vs 15.3%; p<0.001).

Comment (BC): Automated interactive voice recognition may be a technology that PHO collectives could invest in, to prompt patients who smoke to be referred to a Tobacco Treatment Specialist (TTS) and receive help from organisations that address socioeconomic issues. In order to replicate the impressive efficacy of the treatment used in this trial, PHOs would also need to establish teams of staff with equivalent training to that of TTSs, and develop a list of organisations in their communities that address socioeconomic issues. Although NRT was not found to improve quit rates in this trial, people in this trial were only given 6 weeks of patches. If they had been given combination NRT for a longer period of time, NRT would likely have further boosted abstinence.

Reference: JAMA Intern Med. 2015;175(2):218-26

Nicotine and toxicant yield ratings of electronic cigarette brands in New Zealand

Author: Laugesen M

Summary: Fourteen leading E-cig brands available in New Zealand in 2013 were analysed before and after nicotine exhaustion for nicotine; 9 were analysed for major toxicants. Concentration of nicotine and aldehydes in vapour was measured and compared with the nicotine and aldehydes in the smoke of a Marlboro cigarette. E-cigs had a mean nicotine yield of 43 µg per puff (range 18–93 µg per puff) compared to 147 µg per puff from a Marlboro cigarette, being of high nicotine strength (16–18 mg or higher) contained 5–46 mg nicotine per cartomiser. E-cigs had a mean nicotine concentration in infant hair samples from a random sample of 253 babies at baseline and 6 months: 78.7% of the babies tested at baseline were exposed (nicotine ≥1 ng/mg in hair samples). Over follow-up, reduced nicotine concentration was found to improve quit rates in this trial, people in this trial were only given 6 weeks of patches. If they had been given combination NRT for a longer period of time, NRT would likely have further boosted abstinence.

Comment (BC): E-cigs contain phenomenally lower levels of toxicants than cigarette smoke. E-cigs continue to evolve, with newer models delivering more nicotine, and are therefore likely to be better substitutes for smoking. It is unlikely that the government will allow the legal sale of nicotine E-cigs unless their manufacturers apply for their products to be licensed as medicines by Medsafe. However, why would manufacturers go to this expense in order to sell their products in the small NZ market when they make massive profits from selling their products elsewhere? Perhaps the government could pay the cost of Medsafe applications for companies that agree to sell their products cheaply in NZ?


Effectiveness of a brief primary care intervention to reduce passive smoking in babies: a cluster randomised clinical trial

Authors: Ortega CG et al.

Summary: Outcomes are reported from a brief primary care intervention conducted in Catalonia, Spain, involving 1101 babies whose parents were smokers. Parents were assigned to either a brief tobacco smoke pollution intervention, or to usual care (controls). Over 6 months of follow-up, parents in the intervention group were more likely to engage in strategies to avoid tobacco smoke pollution exposure in their babies as compared with parents in the control group: 35.4% vs 26.9% at home (p=0.006) and 62.2% vs 53.1% in cars (p=0.008). Logistic regression analysis yielded adjusted ORs for appropriate measures in the intervention group versus the control group of 1.59 (95% CI, 1.21 to 2.09) at home and 1.30 (95% CI, 0.97 to 1.75) in cars. Nicotine concentration was measured in infant hair samples from a random sample of 253 babies at baseline and 6 months: 78.7% of the babies tested at baseline were exposed (nicotine ≥1 ng/mg in hair samples). Over follow-up, reduced nicotine concentration was associated with improved implementation of effective strategies reported by parents at home (p=0.029) and in cars (p=0.014).

Comment (BC): Smokers who have children and are unable to improve their children’s health by quitting smoking can at least be encouraged to limit their children’s exposure to second-hand smoke. This intervention, which successfully reduced children’s second-hand smoke exposure, only required a minimum of three counselling sessions at routine postnatal GP visits, and could therefore be readily adopted in New Zealand. The health of both parents and children’s exposure to second-hand smoke may be further improved by encouraging parents to reduce their smoking by the use of NRT. These simple interventions may also increase smokers’ sense of self-efficacy and increase their chances of quitting in the future.

Reference: J Epidemiol Community Health. 2015;69(3):249-60