Interventions to aid smoking cessation post-myocardial infarction

Smoking kills. Almost a fifth (19%) of all coronary heart disease deaths in the UK are attributable to smoking.[1] Many of these could be prevented. Smoking cessation significantly decreases mortality and – in the setting of myocardial infarction – this reduction is estimated at 35%.[2] Smoking cessation is also cost effective with interventions in the UK ranging from £212 to £873 per life year gained.[3] But in the setting of unstable cardiovascular disease, safe and efficacious methods of helping patients to stop smoking are yet to be demonstrated.

It is generally accepted that it is safe to use nicotine replacement therapy (NRT) in the setting of stable cardiovascular disease.[4] National Institute of Clinical Excellence (NICE) guidelines issued last year state that, in the setting of unstable cardiovascular disease, the use of NRT and bupropion needs to be discussed with a healthcare professional.[5] This is also the case in smoking cessation guidelines developed by the Health Education Authority for healthcare professionals.[6]

Celine Adams

A NRT immediately post-myocardial infarction

In this issue (pages 212–13), Willmer and Bell have addressed an area on which information is lacking in the literature – is it safe to use NRT immediately following an acute myocardial infarction (AMI)? Intuitively one would imagine that it could not be more harmful than ongoing smoking yet its safety and efficacy in this group remains to be proven. Whilst this study is a step forward, many questions remain unanswered.

The study focuses on a group of 42 patients targeted for an in-patient smoking cessation programme following acute myocardial infarction. Of these patients, 76% chose to commence NRT as an in-patient. All received counselling both as an in-patient and at least four times post-discharge for between 30 minutes to one hour in either the out-patients department or at home. At four weeks, 75% had quit smoking. At one year, 64% remained non-smokers confirmed by carbon monoxide readings. No adverse events occurred.

The absence of a control group makes it difficult to ascertain the impact of NRT itself in this setting. It is known that counselling contributes significantly to smoking cessation and more intense counselling increases the likelihood of this occurring. Review of Cochrane data in this area in hospital patients demonstrates that interventions with counselling lasting for 60 minutes or more, with at least six months follow-up, was effective whereas those with counselling for less than 30 minutes were not.[7] Those who have been trained to deliver the advice have achieved greater effectiveness as opposed to those who have to fit it in to other duties.[7,8] It is not clear for how long counselling continued following discharge in this study although patients were seen at least four times, or by whom the intervention was delivered.

Patients post-myocardial infarction are highly motivated to make lifestyle changes. It has been reported that they are twice as likely to give up smoking when compared to patients post-coronary artery bypass grafting.[8] Reviews of smoking interventions in patients with coronary heart disease have shown that these prove to be less effective if the study excludes patients post-myocardial infarction.[2] It seems reasonable to expect that patients with a smoking related illness will have high motivation to quit smoking. There is also some evidence to support that this may be the case in patients with a cardiovascular rather than a respiratory diagnosis.[9]

The claim that NRT increases smoking cessation rates one and a half to two times compared to placebo generally stems from studies undertaken in 'healthy' volunteers.[10] The efficacy of NRT in hospitalised patients has not been established. In fact, it appears that the intensity of the intervention offered is the most important factor in determining its efficacy. A recent study examining NRT in those with smoking related illnesses

found that, against a background of high intensity advice and support, in both placebo and NRT groups there was no significant difference between the two groups at one year, despite significantly increased cessation rates at one month in those using NRT.[10] This is in accordance with studies previously undertaken in this area.[11,12] However, these studies excluded patients one month and two weeks respectively post-myocardial infarction as part of their criteria. Ways of sustaining abstinence are problematic with up to 70% of smokers post-myocardial infarction returning to the habit within one year.[13] Whilst this study suggests that impressive cessation rates can be achieved in post-myocardial infarction patients with the use of NRT at one year, this clearly needs further confirmation.

Therefore the issue of the efficacy and safety of NRT in the setting of AMI and unstable angina remains unresolved. Whilst this study suggests that it is safe and efficacious, the sample size is too small to generalise the findings. A large, randomised, placebo-controlled study against a background of high intensity advice and support is required to resolve this issue.

References

1. British Heart Foundation. Coronary heart disease statistics 2002. London: British Heart Foundation, 2002.
2 Van Berkel M, Boersma H, Roos-Hesselink JW, Erdman RAM, Simmons ML. Impact of smoking cessation and smoking interventions in patients with coronary disease *Eur Heart J* 1999;**20**:1773-82.
3. Percival J. *Clearing the air 2. Smoking and tobacco control – an updated guide for nurses*. London: Royal College of Nursing, 2002.
4. Rigotti N. Treatment of Tobacco use and Dependence. *N Engl J Med* 2002;**346**:506-12.
5. National Institute for Clinical Excellence. Nicotine replacement therapy and bupropion for smoking cessation (2002 guideline). www.nice.org.uk
6. West R, McNeill A, Raw M. Smoking cessation guidelines for health professionals: an update. *Thorax* 2000;**55**:987-99.
7. West R. Helping patients in hospital to quit smoking. *BMJ* 2002;**324**:64.
8. Hajek P, Taylor T, Mills P. Brief intervention during hospital admission to help patients to give up smoking after myocardial infarction and bypass surgery: randomised controlled trial. *BMJ* 2002;**324**:87-9.
9. Munafo M, Rigotti N, Lancaster T, Stead L, Murphy M. Interventions for smoking cessation in hospitalized patients: a systematic review. *Thorax* 2001;**56**:656-63.
10. Hand S, Edwards S, Campbell IA, Cannings R. Controlled trial of three weeks nicotine replacement treatment in hospital patients also given advice and support. *Thorax* 2002;**57**:715-18.
11 Campbell IA, Prescott RJ, Tjeder-Burton SM. Transdermal nicotine plus support in patients attending hospital with smoking-related diseases: a placebo-controlled study. *Resp Med* 1996;**90**:47-51.
12. Joseph AM, Norman SM, Ferry L *et al*. The safety of transdermal nicotine as an aid to smoking cessation in patients with cardiac disease. *N Engl J Med* 1996;**335**:1792-8.
13. O'Connell N. Smoking cessation and CHD. *Cardiol News* 2002;**5**:17-18.

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