EDITORIAL

MI admissions fall following smoking ban in England

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INSTINCTIVELY WE ALL KNOW THAT A SMOKING BAN MUST BE A GOOD THING PARTICULARLY FROM a cardiovascular point of view. However, it is important to quantify the effects. A study in the *BMJ* has found a significant reduction in the incidence of myocardial infarction (MI) since smoke-free legislation was introduced in England on 1 July 2007.[1]

There have been many studies including meta-analyses showing that passive smoking increases the risk of coronary heart disease and this risk could be increased by as much as 60%, similar to that seen in light smokers.[2,3] The mechanism of such effects is thought to be through increases in platelet aggregation and alterations in endothelial function. These effects can occur very rapidly and as such the benefits of reducing smoke exposure could be seen quite early.

'A small but significant reduction in emergency admissions for MI was found after the smoking ban'

To assess the effectiveness of the smoking ban the study authors analysed all patients aged 18 or older in England with an emergency admission coded with a primary diagnosis of MI. Admissions between July 2002 and September 2008 were included with the aim of comparing data from five years before the ban and 15 months afterwards. The primary outcome measure was the weekly number of completed hospital admissions.

The results were adjusted for the pre-existing decline in admissions, trends in population size, and seasonal variation in admissions. The authors found a small but significant reduction in the number of emergency admissions for MI after the implementation of the smoking ban, 2.4% (95% CI: 0.66% - 4.06%, P=0.007). In real terms they reasoned that this was 1,200 fewer emergency admissions for MI, 1,600 if readmissions were included, in the first year after legislation. This held true for men, 3.1% (P=0.001) and women, 3.8% (P=0.007) aged 60 and over. The difference was also significant in men under the age of 60, 3.5% (P<0.01) but not in women, 2.5% (P=0.38).

Therefore, it would appear that smoke-free legislation leads to reductions in MI although the authors note that this was a fairly modest reduction compared with studies of smoking legislation in other countries.

They postulate that this could be because the legislation was introduced when many public places and workplaces were already smoke-free. At the time the ban was introduced 55% of employed adults in England were working in a smoke-free environment. Furthermore, bars and restaurants had already started to ban smoking before the legislation. This is illustrated by the fact that exposure to passive smoking was 50% lower in England than in Scotland just before the ban.

The finding that women under 60 appear not to benefit from the smoking ban was also considered by the authors. They felt that exposure to passive smoking was already declining in women and that their study may have been inadequately powered to detect the small but significant benefits seen in men due to the low numbers of admissions in women under the age of 60.

The final point of note is that the authors were not able to determine the smoking status of patients from the routine hospital data available. Therefore they were unable to determine how much of the effect observed was due to reduced exposure to passive smoking and how much was due to smokers who quit.

The authors also postulate that an observed reduction in hospital admissions for MI might be explained by an increase in out of hospital deaths. However, analysis of European data revealed that out of hospital deaths for coronary events mirrored the decline in admissions so this is unlikely to be an important factor.

It should also be remembered that there is only a relatively short period of post-legislation follow up in this study so it is not inconceivable that the small benefit observed could disappear with time. However, given the number of MIs per year a small but significant reduction in events is to be welcomed.

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