Variation in hospital admission for AMI unlikely to be attributable to smoking legislation

Francesco Barone-Adesi and colleagues present an interesting analysis of hospital admissions for MI around the introduction of Italy’s national smoking ban. They claim to have observed an 11% reduction in admissions aged <60, almost entirely attributable to removal of exposure to ‘side smoke’, by comparing 5 months admissions after introduction of the ban, with a comparable period in the previous year. Such a marked and early effect would be of considerable public health and political interest.

However, it should be noted that they report no reduction overall (RR = 1.01, 0.97–1.06), and it was only by dividing admissions into four groups, men and women and young (<60) and not so young, that a significant reduction (RR = 0.75, 0.58–0.96) could be observed in the smallest of four subgroups considered (men aged at least 60, women aged at least 60, men aged <60, and women aged <60). As correctly pointed out by Professor West, we analysed the two age groups separately. We did so according to an a priori decision based on the evidence that the attributable risk of myocardial infarction due to smoking is higher at younger ages. Moreover, it is reasonable to assume that the active and passive smoking of the youngest group, who would have spent more time in public places than older people, might have been more strongly affected by the new Italian smoking ban. These assumptions are also supported by the statistically significant results of a formal test for homogeneity between age groups (reported in Table 2 of our article).

Conversely, in the main analyses, we did not consider men and women separately. Indeed, as also reported in the abstract and in the conclusions of the article, the main finding of our study is a statistically significant 11% reduction in admissions for AMI after the ban among persons aged <60, regardless of gender. Consistent with this analysis, we compared the expected effect of the decrease in active smoking with the observed 11% decrease in AMI for both genders, not with the 25% decrease found in younger women only. The gender-specific estimates are the results of a secondary analysis carried out to check for internal consistency, the message being that the reduction was observed in both men and women.

Professor West also suggests that no decrease would have been observed if we had chosen as the comparison the average rate observed between 2001 and 2004. This suggested approach implicitly assumes constant rates of AMI over that period. That assumption is not, however, supported by our data, which show an increase in admissions for AMI between 2001 and 2004, irrespective of age group. One method for taking into account the underlying increasing trend would be to fit a regression model and compare the predicted with the observed rate for 2005. This approach would give a higher estimate of the effect of the ban.

As correctly pointed out by Professor West, the conclusion of our article that a specific evidence for an effect it is not premature to report age-specific effect of anti-smoking legislation on incidence of MI.

Reference


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