Letters to the Editor

doi:10.1093/eurheartj/ehl568

Online publish-ahead-of-print 22 February 2007

Short-term effects of Italian smoking regulation on rates of hospital admission for acute myocardial infarction

In their recent paper, Barone-Adesi et al.1 conclude that smoke-free policies may result in short-term reduction in admission for acute myocardial infarction (AMI). However, from the methods and data presented in this paper, we believe that the observed effect may not be real and that the authors’ conclusion must be treated with caution.

Our main concern is the manner in which the authors present their data. They have chosen not to provide simple information about the rate of AMI over time. Instead, they compare the 5-month period during the ban (February–June 2005) with the same period the previous year. Using this technique, they have been able to demonstrate a marginal effect. However, no explanation has been offered as to why a 5-month period was chosen or what effect is observed when a different time period (3 months, say) is compared. In our opinion, this raises the possibility of selection bias.

Even if any selection bias is ignored, the significance of the results remains questionable. It should be noted that the marginally significant overall rate ratio (RR) of 0.89 (95% CI 0.81–0.98) is largely attributable to an RR of 0.75 in females under 60. This favourable RR was calculated comparing February–June 2005 (during the ban) with February–June 2004. However, looking at Table 1, it appears that the high rate of AMI among women under 60 in February–June 2004 is anomalous and unlikely to be related to smoking. This is supported by the fact that the rate in women under 60 had decreased even before the ban was imposed (RR 0.88, comparison of October–December 2004 with October–December 2003).

In conclusion, this study’s methods have introduced selection bias. This bias, in conjunction with the very marginal and possibly insignificant RR, means no robust conclusions about the effectiveness of the smoking ban can be drawn from these data.

Reference

Eur Heart J (2007) 28, 2296–2298

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Short-term effects of Italian smoking regulation on rates of hospital admission for acute myocardial infarction: reply

Broome et al.1 suggest that our estimate of a 11% decrease in hospital admissions for acute myocardial infarction (AMI) during the first 5 months after the introduction of the Italian smoking ban in January 2005 might be biased.2 They base their argument on three points, which, in our opinion, add plausibility to the hypothesis of an association between implementation of smoking bans and a decrease in AMI.1,3,4

First, we chose a priori to analyse the 5-month period (February–June 2005) after the introduction of the ban because, at the time of submission of our manuscript, data from the regional Hospital Discharge Registry were available till June 2005. However, restriction of the analysis to the 3-month period February–April 2005 would also give a 11% overall reduction (95% confidence interval: 21–0%; P = 0.05) among persons aged <60.

Secondly, the rate ratio (RR) of 0.89 that we estimated in our paper was not due mainly to the RR of 0.75 among women: it is the weighted average of 0.91 among men and 0.75 among women, in which the weight for men is 85%, whereas that for women is 15%. This is because, among people aged <60, AMI was much commoner in men than in women.

Thirdly, as our estimates were more strongly influenced by the rates for men than by those for women, it is more important to consider the background trend in admissions for AMI of men than for women.

As also shown in Table 1 of our original article,1 the rates of admissions for AMI per 1000 person-years among men aged <60 were 1.21 in 2001, 1.25 in 2002, 1.31 in 2003, 1.35 in 2004 and 1.24 in 2005, indicating, if anything, an increasing trend up to 2004. Therefore, adjustment for the background trend would have given an even higher estimate of the effect of the ban.

We thank Broome et al.1 for giving us the opportunity to clarify these points, which, in our opinion, add plausibility to the hypothesis of an association between implementation of smoking bans and a decrease in AMI.1,3,4

References
2. Broome RA, Beveridge CH, Williams ES. Short-term effects of Italian smoking regulation on rates of hospital admission for acute myocardial infarction. Eur Heart J 2007; Published online ahead of print February 22; doi:10.1093/eurheartj/ehl568.

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