Reviewer's report

Title: Mortality and morbidity among people living close to incinerators: a cohort study based on dispersion modeling for exposure assessment

Version: 1 Date: 12 August 2010

Reviewer: Bert Brunekreef

Reviewer's report:

Comments on Ranzi et al.

This paper relates exposure to waste incinerator emissions to mortality and cancer incidence in a Po valley area in Italy. Some positive findings emerge amidst a large majority of null results.

Comments

The authors were motivated to undertake this study because the literature in MWI effects is still inconclusive, and most studies conducted to date have not been able to use individual level data on exposure and confounders. However, the new study was relatively small, and a discussion of statistical power is missing. How large an effect did the authors expect to find, and what was the power of their study to detect it?

Study findings were largely null, with some exceptions. The number of exceptions was so small relative to the number of null findings that I’m more (than the authors) inclined to see this as a negative study. There’s nothing wrong with that but I’d like to encourage the authors to discuss the issue of multiple testing, and the number of positive findings in comparison to the null findings.

Despite the availability of at least some individual level data, the authors were unable to have data on smoking and occupational exposures. They suggest that having area level SES helped them to address these factors, but they also mention (p. 18) that rate ratio estimates were attenuated after adjustment for SES. This clearly suggests that residual confounding may have been operating, and the authors need to add a discussion of this possibility.

Subjects were included when they had resided for at least five years in the study area. As acknowledged, cancer may take much longer to emerge, and it would be useful to check whether results change when restricted to those who had lived in the study area at least since 1990.

This is all the more important because the authors try to explain the null finding for cancer incidence by arguing that there may not have been enough time for cancer incidence (as opposed to mortality) to have been affected by exposure…..

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

no competing interests