

LOSS-TO-FOLLOW UP AND SELECTION BIAS IN A LONGITUDINAL STUDY OF CLEAN-UP WORKERS OF THE *PRESTIGE* OIL SPILL

Jan-Paul Zock, *Centre for Research in Environmental Epidemiology (CREAL) Barcelona, Spain*

Gema Rodríguez-Trigo, *Hospital Clínico San Carlos Madrid, Spain*

Emma Rodríguez-Rodríguez, *Spanish Society of Respiratory Medicine (SEPAR), Spain*

Aina Espinosa, *Centre for Research in Environmental Epidemiology (CREAL) Barcelona, Spain*

Ana Souto-Alonso, *Hospital Arquitecto Marcide Ferrol, Spain*

Francisco Pozo-Rodríguez, *Hospital 12 de Octubre Madrid, Spain*

Federico P Gómez, *Hospital Clínic Barcelona, Spain*

Carme Fuster, *Autonomous University Barcelona, Spain*

Josep Maria Antó, *Centre for Research in Environmental Epidemiology (CREAL) Barcelona, Spain*

Joan Albert Barberà, *Hospital Clínic Barcelona, Spain*

Background and Aims: Loss to follow-up may introduce bias in epidemiological assessments of chronic health effects of incidental environmental exposures. A baseline study conducted in fishermen two years after the *Prestige* oil spill (Spain) showed that clean-up workers had a higher prevalence of respiratory symptoms and bronchial hyperresponsiveness (BHR), and higher levels of the oxidative stress marker 8-isoprostane than non-exposed. A follow-up survey was conducted four years later. We evaluated how loss to follow-up may have introduced selection bias in the longitudinal study.

Methods: Repeated respiratory testing including BHR and 8-isoprostane level was done using identical methodology as in the baseline study. The associations between study participation and respiratory health status at baseline and at follow-up were studied separately for exposed and non-exposed.

Results: Participation rates were similar in exposed (158/230=69%) and non-exposed (57/87=66%). Among non-exposed, the prevalence of respiratory symptoms at baseline was higher among participants (38% vs. 11%; $p=0.01$) than among non-participants. This difference was not apparent for exposed (35% vs. 26%; $p=0.22$). The prevalence of BHR slightly increased during follow-up among exposed (15 to 18%) and strongly increased in non-exposed (11 to 33%). After adjustment for sex and age, Odds Ratios for BHR among responders were 2.2 (95% CI 0.8-6.4) at baseline and 0.6 (0.3-1.2) at follow-up. Mean EBC 8-isoprostane levels increased 14 to 19 pg/mL in exposed and 6 to 21 pg/mL in non-exposed, and the adjusted GM ratios were 2.3 (95% CI 1.4-3.6) at baseline and 1.0 (0.7-1.4) at follow-up.

Conclusions: A differential loss to follow-up related to baseline health status may have introduced selection bias. In addition, a marked deterioration of respiratory health status during follow-up among non-exposed but not among exposed may be suggestive of an initial selection bias that only has become apparent after several years of follow-up.