

EPIDEMIOLOGY

## EPIDEMIOLOGICAL EVIDENCE FOR A NEGATIVE ASSOCIATION BETWEEN AIR POLLUTION AND BASAL CELL CARCINOMA IN ELDERLY CAUCASIAN WOMEN

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Introduction: Basal cell carcinoma (BCC) is the most common human skin cancer. The risk to develop BCC is strongly modified by environmental factors. It is positively associated with exposure to ultraviolet radiation, but negatively with exposure to tobacco smoke, whereas nothing is known about the role of air pollution.

Objective: To investigate the association between BCC and air pollution and whether it is modified by other factors.

Methods: In this population-based cross-sectional study, logistic regression analysis was used to estimate the association of air pollution with BCC in elderly women from the SALIA cohort study. Modeled residential exposure to air pollution during the follow-up from 2007 to 2010 was estimated by land-use regression according to the ESCAPE study and the baseline exposure from 1985 to 1994 was back-extrapolated. Potentially related variables included history of sunbed use, Fitzpatrick skin type, exposure to tobacco smoke and residence area and were derived from interview-based questionnaires.

Results: The study included 799 elderly women (mean age: 74±3.05) with complete data. From these, 6.45% had ever been diagnosed a BCC. Exposure to air pollution showed negative associations with BCC. These negative associations were stronger and reached significance in sunbed users (ORs and 95%CI for baseline NOx, PM10 and PM2.5 are 0.12(0.02-0.76), 0.12(0.02-0.9) and 0.12(0.01-0.93)), in participants exposed to second hand smoke (ORs and 95%CI for baseline PM10, PM2.5, PM2.5abs and PMcoarse are 0.49(0.27-0.88), 0.4(0.2-0.79), 0.28(0.09-0.89) and 0.24(0.08-0.68)), and in participants living in urban areas (ORs and 95%CI for baseline NOx is 0.33(0.13-0.87)). In addition, Fitzpatrick skin types, sunbed use history and exposure to second hand smoke showed significant interaction effects with air pollution on BCC.





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Conclusions: Elderly Caucasian women exposed to higher levels of air pollution were less likely to be diagnosed with BCC, indicating that air pollution might decrease the risk of developing BCC.



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