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Cancer incidence in the AGRICAN cohort study (2005–2011)

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Abstract

Background: Numerous studies have been conducted among farmers, but very few of them have involved large prospective cohorts, and few have included a significant proportion of women and farm workers. Our aim was to compare cancer incidence in the cohort (overall, by sex, and by work on farm, occupational status and pesticide use) within the general population.

Methods: More than 180,000 participants in the AGRICAN cohort were matched to cancer registries to identify cancer cases diagnosed from enrolment (2005-2007) to 31st December 2011. We calculated standardized incidence ratios (SIRs) and 95% confidence intervals (95%CIs).

Results: Over the period, 11,067 incident cancer cases were identified (7304 men and 3763 women). Overall cancer incidence did not differ between the cohort and the general population. Moreover, SIRs were significantly higher for prostate cancer (SIR=1.07, 95%CI 1.03-1.11) and non-Hodgkin lymphoma (SIR=1.09, 95%CI 1.01-1.18) among men, skin melanoma among women (SIR=1.23, 95%CI 1.05-1.43) and multiple myeloma (men: SIR=1.38, 95%CI 1.18-1.62; women: SIR=1.26, 95%CI 1.02-1.54). In contrast, SIRs were lower for upper aerodigestive tract and respiratory cancers. Increase in risk was greater in male farm workers for prostate and lip cancer, in female farm workers for skin melanoma, and in male farm owners for multiple myeloma. Moreover, incidence of multiple myeloma and skin melanoma was higher among male and female pesticide users respectively.

Conclusion: We found a decreased incidence for tobacco-related cancers and an increased incidence of prostate cancers, skin melanoma and multiple myeloma. Specific subgroups had a higher cancer incidence related to occupational status and pesticide use.

Keywords: Agriculture; Cohort studies; Farmers; Incidence; Neoplasms.

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