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SFCE : Société Française de lutte contre les Cancers de l'Enfant et de l'Adolescent

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Abbreviations used:

AL	Acute leukaemia
ALL	Acute lymphoblastic leukaemia
AML	Acute myeloblastic leukaemia
HL	Hodgkin's lymphoma
NHL	Non-Hodgkin's lymphoma
CI	Confidence interval
OR	Odds ratio

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Abstract

Objectives

Investigating the role of household exposure to pesticides in the aetiology of childhood haematopoietic malignancies.

Methods

The national registry-based case-control study ESCALE was carried out in France over the period 2003-2004. Population controls were frequency matched with the cases on age and gender. Maternal household use of pesticides during pregnancy and paternal use during pregnancy or childhood were reported by the mothers in a structured telephone questionnaire. Insecticides, used at home, on pets, or for garden crops, herbicides and fungicides were distinguished. We estimated odds ratios (OR) using unconditional regression models closely adjusting for age, gender, degree of urbanization and type of housing (flat or house).

Results

We included a total of 764 cases of acute leukaemia (AL), 130 of Hodgkin's lymphoma (HL), 166 of non-Hodgkin's lymphoma (NHL) and 1681 controls. Insecticide use during pregnancy was significantly associated with childhood AL (OR=2.1 [1.7-2.5]), both lymphoblastic and myeloblastic, NHL (OR=1.8 [1.3-2.6]), mainly for Burkitt's lymphoma (OR=2.7 [1.6-4.5]), and mixed-cell HL (OR=4.1 [1.4-11.8]), but not nodular sclerosis HL (OR=1.1 [0.6-1.9]). Paternal household use of pesticides was also related to AL (OR=1.5 [1.2-1.8]) and NHL (OR=1.7 [1.2-2.6]), but, for AL, the relationships did not remain after adjustment for maternal pesticide use during pregnancy.

Conclusion

The study findings strengthen the hypothesis that domestic use of pesticides may play a role in the aetiology of childhood haematopoietic malignancies. The consistency of the findings with those of previous studies on AL raises the question of the advisability of preventing pesticide use by pregnant women.