

Common household pesticides linked to childhood cancer cases in Washington area

July 28 2009

A new study by researchers at the Georgetown's Lombardi Comprehensive Cancer Center finds a higher level of common household pesticides in the urine of children with acute lymphoblastic leukemia (ALL), a cancer that develops most commonly between three and seven years of age. The findings are published in the August issue of the journal *Therapeutic Drug Monitoring*.

Researchers caution that these findings should not be seen as cause-andeffect, only that the study suggests an association between pesticide exposure and development of childhood ALL.

"In our study, we compared urine samples from children with ALL and their mothers with healthy children and their moms. We found elevated levels of common household pesticides more often in the mother-child pairs affected by cancer," says the study's lead investigator, Offie Soldin, PhD, an epidemiologist at Lombardi. Soldin cautions, "We shouldn't assume that pesticides caused these cancers, but our findings certainly support the need for more robust research in this area."

The study was conducted between January 2005 and January 2008 with volunteer participants from Lombardi and Children's National Medical Center who live in the Washington metropolitan area. It included 41 pairs of children with ALL and their mothers (cases), and 41 pairs of healthy children and their mothers (controls). For comparison purposes, the case pairs were matched with control pairs by age, sex and county of residence. Previous studies in agricultural areas of the country have



suggested a relationship between pesticides and childhood cancers, but researchers say this is the first study conducted in a large, metropolitan area.

Urine samples were collected from all child-mother pairs and analyzed by the <u>Centers for Disease Control and Prevention</u> to look for evidence of organophosphates (OP), the chemical name of some household pesticides. The body breaks down OP into metabolites which can be tracked in urine samples. The researchers say pesticides were detected in the urine of more than half of the participants, but levels of two common OP metobolites, diethylthiophosphate (DETP) and diethyldithiophosphate (DEDTP), were higher in the children with ALL compared to the control children (p

Also for the study, the mothers completed a questionnaire to collect information about the family's exposure to pesticides, their medical history, home and neighborhood characteristics, diet, and history of smoke exposure. More case mothers (33 percent) than controls (14 percent) reported using insecticides in the home (p

"We know pesticides - sprays, strips, or 'bombs,' are found in at least 85 percent of households, but obviously not all the <u>children</u> in these homes develop cancer. What this study suggests is an association between pesticide exposure and the development of childhood ALL, but this isn't a cause-and-effect finding," Soldin explains. "Future research would help us understand the exact role of <u>pesticides</u> in the development of cancer. We hypothesize that pre-natal exposure coupled with genetic susceptibility or an additional environmental insult after birth could be to blame."

Source: Georgetown University Medical Center (<u>news</u> : <u>web</u>)



Citation: Common household pesticides linked to childhood cancer cases in Washington area (2009, July 28) retrieved 1 May 2024 from <u>https://medicalxpress.com/news/2009-07-common-household-pesticides-linked-childhood.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.