NON-HODGKIN`S LYMPHOMA AND THE PESTICIDE HYPOTHESIS: DOSE RESPONSE

[HYPERLINK "agendaauthor.asp?author=193"]

Meeting: [HYPERLINK "agendameeting.asp?meeting=72"]

Monday, August 21, 2000 - 2:00 PM

Agricultural Exposure and Human Health

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☯☏☼✋✞✌❄☜❁Non-Hodgkin`s lymphoma (NHL) has been associated with farming and agricultural exposures including specific herbicides and insecticides. The hypothesis that exposure to specific herbicides and/or insecticides is etiologically associated with NHL remains controversial. We conducted a Canadian multi-centre population-based incident, NHL case (n = 517) - control (n = 1506) study among men. We collected lifetime occupational history including pesticide exposure by utilizing a self-report postal questionnaire followed by a telephone interview administered to those initially reporting exposure to pesticides of 10 hours per year or more and a 15% random sample of the remainder. We computed odds ratios (OR) using conditional logistic regression adjusted for the matching variables of age and province of residence. Among major chemical classes of pesticides, in univariate adjusted analyses, we found that risk of NHL was significantly increased by exposure to phenoxyherbicides, to dicamba containing herbicides and to carbamate and organophosphorus insecticides. Among individual active agents, risk was increased by exposure to the herbicide mecoprop and to the insecticides malathion, DDT, carbaryl, aldrin and lindane. Utilizing conditional logistic analyses which included in the model all covariates for which the 95% confidence interval (95% CI) excluded unity, we found that antecedent cancer, a family history of cancer among first degree relatives and exposure to mixtures containing the herbicide dicamba or mecoprop (a phenoxyherbicide) and to aldrin (an organochloride insecticide) were statistically significant independent predictors of an increased risk of NHL while a personal history of measles and of allergy desensitization treatments were protective. Models which explored the relationships among the number of days per year of personally applying/mixing individual compounds and risk of NHL showed (a) no relationship to increasing days of exposure for bromoxynil; several phenoxyherbicides including MCPA; 2,4-D and 2,4-DB; dicamba; diallate, triallate or treflan. (b) more than two days per year of exposure to glyphosate resulted in an OR (95% CI) of 2.11 (1.20, 3.72). (c) one or 2 days per year of exposure to mecoprop resulted in an OR (95% CI) of 2.22 (1.35, 3.67) and more than 2 days per year of exposure to mecoprop resulted in an OR (95% CI) 2.05 (1.17, 3.60) consistent with the multivariate model. Funded by Health Canada, the British Columbia Health Research Foundation and the Centre for Agricultural Medicine, University of Saskatchewan.

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