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Pesticide Exposure May Increase Dementia Risk

BY MICHELE G. SULLIVAN

VIENNA — Pesticide exposure might increase the risk of later dementia by as much as 70%.

"Exposure to pesticides may have long-term damaging effects on the nervous system that contribute to the development of Alzheimer's or other dementias," Kathleen M. Hayden, Ph.D., said at the International Conference on Alzheimer's Disease.

"We need more research to fully characterize the increased risks associated with different types of pesticides, and the duration of their use," she added.

Dr. Hayden of Duke University Medical Center, Durham, N.C., based her study on data from the Cache County Study of Memory, Health, and Aging. The ongoing study began in 1995, and includes 5,092 subjects, who are assessed every 3 years.

The study participants were given a questionnaire that focused on pesticide exposure.

The study population was a good one for examining the impact of pesticides, Dr. Hayden said, because the subjects live in a rural area, the economy of which relies heavily on growing wheat, soybeans, apples, corn, and hay.

Dr. Hayden and her colleagues assessed the risk of new-onset dementia and Alzheimer's disease in 4,012 of these subjects who were free of dementia at baseline.

Their logistic regression analysis was based on 6 years of follow-up, and controlled for age, sex, education, and ApoE4 status.

At baseline, the subjects were a mean of 75 years old. Pesticide exposure had occurred in 19% (743). The exposed group was primarily male (89%).

After 6 years of follow-up, there were 412 new cases of dementia; 85 of these subjects (21%) reported having had some degree of pesticide exposure on their baseline assessment.

The analysis found consistent significant relationships between new-onset dementia and exposure to both organophosphates and organochlorines. Any exposure to pesticide was associated with a 56% increase in the risk of dementia and Alzheimer's disease.

Exposure to organophosphate compounds increased the risk of dementia by 36% and increased the risk of Alzheimer's disease by 59%. Exposure to organochlorines increased the risk of dementia by 60% and increased the risk of Alzheimer's disease by 70%, the investigators found.

The study did not take into account the duration or extent of exposure, and does not prove a causal link between pesticides and dementia, Dr. Hayden cautioned. But the findings do suggest that more study is necessary, especially in light of the ever-increasing use of such chemicals.

"Some pesticides do alter the level of neurotransmitters, and their use has increased drastically in the past 50 years," Dr. Hayden said.

"According to the Environmental Protection Agency, there are more than 18,000 pesticides licensed for use in the U.S., and each year, more than 2 million pounds are applied to our crops, parks, homes, and forests," she said. ■