

Graves' disease, Agent Orange exposure linked in veterans

International Thyroid Congress

PARIS — Exposure to Agent Orange, the defoliant used during the Vietnam War, appears to be an important predictor of Graves' disease in veterans.

Results of a study presented here at the International Thyroid Congress showed that Vietnam War-era veterans who were exposed to Agent Orange have three times the prevalence of Graves' disease compared with unexposed veterans (OR=3.102; 95% CI, 1.56-6.16).

The chemical structure of Agent Orange, which is contaminated with 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), is similar to that of triiodothyronine and thyroxine. It is known to affect thyroid hormone and metabolism.

Ajay Varanasi, MD, an endocrinology fellow in the department of medicine at the University of Buffalo, and colleagues examined whether veterans who were exposed to Agent Orange had a higher prevalence of thyroid disorders, including cancer, [Graves' disease](#), hypothyroidism and nodules.

To assess the prevalence of major thyroid diagnoses, the researchers reviewed the Veterans Administration electronic medical database for upstate New York veterans born between 1925 and 1950, which is the age group that would have been eligible for military service during the Vietnam War era. Their search revealed 19,709 veterans who were exposed to Agent Orange exposure and 50,913 veterans who were not exposed. They compared the groups for possible differences in race, smoking history and type 2 diabetes.

Overall, Agent Orange exposure was the most important predictor of Graves' disease (OR=2.76; 95% CI, 2.22-3.81), independent of race/ethnicity, smoking status and diabetes.

When the researchers examined the records of veterans who were seen at the VA but did not have service-connected disability as well as all veterans who were treated with methimazole or propylthiouracil, they found that many had been diagnosed as having hyperthyroidism when, in fact, their records showed evidence of Graves' disease. Symptoms in these records included diffuse goiter, bruit, infiltrative eye signs and uniform high radioiodine uptake. Similar to the overall group of veterans who were exposed to Agent Orange, these veterans combined also had a threefold greater prevalence of Graves' disease (OR=3.02; 95% CI, 2.25-4.33).

In addition, [diabetes](#) was two times as common in Agent Orange-exposed veterans.

An interesting finding, according to Varanasi, was that exposed veterans had a significantly decreased prevalence of hypothyroidism (OR=0.85; 95% CI, 0.79-0.92).

The researchers noted no significant between-group differences in the prevalence of thyroid cancer (OR=1.16; 95% CI, 0.75-1.77) or thyroid nodules (OR=1.14; 95% CI, 0.93-1.30).

“Despite the limitations associated with retrospective chart reviews and with studying an uncommon disease, in view of known immune-modulating effects of TCDD, our finding of an increased prevalence of Graves’ disease in Vietnam veterans potentially exposed to TCDD warrants further investigation,” Varanasi said while presenting the data. – *by Katie Kalvaitis*

For more information:

- Varanasi A. OC-036. Presented at: the 14th International Thyroid Congress; Sept. 11-16, 2010; Paris.

 [Follow CardiologyToday.com on Twitter.](#)