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News

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*****Geneticists doubtful genetic screening can help Vietnam vets exposed to Agent Orange.

* * FOR IMMEDIATE RELEASE * *

DALLAS--A legislative mandate calling for "genetic screening" of Vietnam veterans exposed to herbicide Agent Orange has medical scientists shaking their heads:

"We know of no toxic chemical that when taken by the father has been shown to cause birth defects in his children," says Dr. Jan Friedman, head of the Division of Clinical Genetics at The University of Texas Southwestern Medical School.

Some poisons cause germ cell toxicity in the father's sperm. This condition has been shown to cause infertility or subfertility, however, and not genetic mutations in offspring, he says. "We are concerned that such genetic effects could occur, but there is just no evidence to support that."

Friedman, along with genetic counselor Dr. Mary Jo Harrod, is doubtful geneticists can give the help required by a bill recently passed in the Texas Legislature. The bill calls for The University of Texas Health Science Centers to provide "genetic screening to determine if the veteran has suffered physical damage as a result of substantial exposure to chemical defoliants or herbicides, including Agent Orange."

"There is not a test for what the Legislature is asking us to do," says Harrod. "There seems to be some confusion in the bill between the effects on the veterans' own health and the effects on their babies."

"Moreover, there is no general genetic screening test that will guarantee a couple they will have a normal child or to tell a couple they're at high risk to have a child with most birth defects," says Friedman. "Tests for chromosomal breakage in the father's blood would not yield conclusive information regarding the risks of birth defects in his offspring."

The geneticists say that five percent of all Vietnam veterans would be expected to have children with birth defects and mental retardation because that is the incidence in the normal population. There is no scientific evidence that children of veterans exposed to Agent Orange have more birth defects than anyone else, they say.

Miscarriages, stillbirths and birth defects are known to occur when pregnant women are exposed to some toxic agents. Reportedly, some fetuses of Vietnamese women were harmed as a result of exposure to Agent Orange sprayed by U.S. aircraft. Although some animal studies have shown an increased number of fetal abnormalities when pregnant animals were exposed to TCDD (2,3,7,8-tetrachlorodibenzo-p-dioxin), a highly toxic contaminant of Agent Orange, other studies have failed to confirm this finding. Studies in which male mice were exposed to TCDD prior to impregnating unexposed females failed to show any increase in fetal loss or malformations.

"We are always interested in seeing the family of any child with a birth defect," says Harrod, "whether the father was exposed to Agent Orange or not. These families need genetic counseling."

(over)

The problem facing these scientists and others assessing TCDD exposure, is that few human data have been published on the toxin's long-term effects. The effects likely to be associated with TCDD are known chiefly from reports of industrial accidents and other occupational exposures. But there has never been any form of TCDD poisoning to reach the potential magnitude of the Agent Orange effects in Vietnam. More than 45,000 veterans with suspected Agent Orange-related disorders have been examined at Veterans Administration hospitals since 1978. Congressional estimates of numbers of veterans exposed to Agent Orange run as high as 2.5 million.

Currently a VA-funded study is underway at the University of California at Los Angeles, and the Air Force is involved in a long-term study of 1,198 men who were engaged in "Operation Ranch Hand" spraying since theirs was the greatest exposure.

Birth defects are part of a diverse set of health complaints being attributed to TCDD exposure. From personal experience, veterans are describing delayed health effects ranging from chloracne (a painful acneiform eruption caused by exposure to chlorine and chlorine compounds), tumors and liver disease to neurologic and psychiatric disorders. Traces of TCDD are still detectable in the fat tissue of servicemen exposed to Agent Orange and other TCDD-containing herbicides used in Vietnam.

"There is no doubt that TCDD is very acutely and chronically toxic and that these symptoms are consistent with known toxic effects," says Dr. James Garriott, chief toxicologist for the Southwestern Institute of Forensic Sciences. "Many of these physical effects have been observed in both animal studies and in humans exposed to TCDD in industrial and laboratory circumstances."

Garriott and Southwestern toxicologist Dr. Thomas Kurt agree that TCDD is the most toxic synthetic chemical known to man. On a weight basis, low microgram levels of exposure are enough to cause serious chronic illness, says Garriott. In fact, it takes so little TCDD to produce harmful effects that scientists have not been able to determine a level low enough to be classified as safe.

The repeated absorption of Agent Orange by servicemen patrolling freshly denuded forests was enough exposure to cause chronic toxicity while not being lethal, according to Garriott and Kurt. During the 10 years that 107 million pounds of herbicides were used in South Vietnam, an estimated 368 pounds of TCDD were dropped on 6 million acres. (The TCDD was produced inadvertently when the herbicide 2,4,5-T was manufactured.)

"The presence of TCDD in fat tissue consistently suppresses immune responses and makes the exposed person more susceptible to infections," says Garriott. "It is extremely stable and there seems to be no way to antagonize it or to counteract it. No way has been found to enhance excretion. And it's been found to have an extremely long half-life in plasma and in fat, which lasts a matter of years."

Herbicides were intended to destroy underbrush, which could conceal the enemy, and for enemy food and crop denial. But it also was ingested, inhaled and absorbed through the skin by people in the sprayed areas. Men drank from and swam in contaminated jungle streams. And there were even reports that some soaked their clothes in it to keep the mosquitos away.

It is still difficult, however, to pinpoint the delayed manifestations of TCDD poisoning. One complication--"There is a great deal of poison paranoia and poison hysteria associated with TCDD exposure," Kurt says.

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