PANCREATIC CANCER DEATHS IN TEXAS VETERANS

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DEDICATION

I appreciate the kindness, advice and support from my committee members Dr. Irina Cech, Dr. George Delclos, and Dr. Elaine Symanski.

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The Texas Department of State Health Services (TDSHS), Bureau of Vital Statistics collected the electronic death data and made the data available through the University of Texas Health Science Center at Houston School of Public Health for research free of charge.

As a preface to my study, I would like to explain a little about what led to my interest in the topic. In a paper describing the historical aspects of the research linking phenoxy herbicides to certain cancers, Dr. Lennert Hardell traces his interest in the topic to having met a particular patient who developed pancreatic cancer after working with a mixture of 2,4-D and 2,4,5-T.[1] This is the same mixture of herbicides used in Vietnam as "Agent Orange". I can trace my interest in pancreatic cancer and herbicide to noticing a series of obituaries of Vietnam veterans, all with pancreatic cancer. The first, died at age 51 of pancreatic cancer, having served several tours of duty with the Air Force in Vietnam. In a short period thereafter, I noticed other, similar obituaries, all with pancreatic cancer, and all with Vietnam military service. Through courses in legal research, I was also aware of legal cases, Board of Veterans Appeals claims, wherein veterans have applied for, and been denied, compensation for medical conditions the veterans believe were brought on by military service. The files are publicly available and searchable by key word. I read approximately fifty claims appeals made by Vietnam veterans with pancreatic cancer and/or their survivors. The claims under appeal, though made by different individuals, were very much alike in both the time period of military service and in the age at diagnosis of pancreatic cancer. These veterans told of being diagnosed with pancreatic cancer in their 40's and then being told the condition

normally occurs in patients who are much older. These Board of Veteran Appeals files are also available on the full-text electronic databases, such as Lexis-Nexis in Academic Universe. This SPH library resource provides the ability to quickly access full-text historical information whether newspaper articles or legal cases, and serves as a valuable supplement to the research information that is available through Medline. It was from newspaper articles describing the marketing of a lipid lowering drug, structurally similar to phenoxy herbicides, and later describing the banning of that drug in Europe due to cancer deaths that led me to research those topics more thoroughly on Medline.

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Background/Objective

Several studies have found an increased risk of pancreatic cancer in veterans deployed to Vietnam during the Vietnam War. Diabetes, a known risk factor for pancreatic cancer, has been designated as a service-connected illness in deployed Vietnam veterans. The majority of Vietnam veterans, now between the ages of 55 to 65, have not yet reached the ages of pancreatic cancer's greatest prevalence, ages 65 to 79. This case-control study utilized 1998 electronic Texas death certificate data for white, black and Hispanic men to explore the question of whether military service was a risk factor for deaths due to pancreatic cancer among men who died in 1998.

Methods

The primary study included men born between 1927 and 1953, and was a matched case-control study with two control groups; 431 pancreatic cancer cases were birth-year and race-matched one case to two non-neoplastic death controls and, for the second control group, were matched 1:1 with 431 accidental death controls. The exposure was military service, recorded as "yes", "no" or "unknown" on the death certificate. Conditional logistic regression was used for the data analysis. Logistic regression was used in two additional unmatched analyses to examine the same exposure, military service, within different birth

cohorts, again using pancreatic cancer cases with non-neoplastic and accidental death controls.

Results

For pancreatic cancer cases matched to non-neoplastic controls, the association with military service showed an elevated odds ratio (OR) of 1.40 (95% confidence interval [CI] 1.10-1.79); matched to accidental death controls, a similar association with military service was detected [OR=1.40 (95% CI 1.04-1.89)]. The association was not seen in all time periods and was greatest for those within a birth cohort specific for Vietnam Era service. For men born between 1946 and 1950, OR=1.90 (95% CI 1.03-3.50) for comparison with non-neoplastic controls and OR=1.91 (95% CI 0.9995-3.64) for accidental death controls.

Conclusion

In Texas, for men aged 44-71, who died in 1998, military service was associated with an approximately 40% increased risk for pancreatic cancer. For men ages 48-52, military service was associated with an approximately 90% increased risk for pancreatic cancer.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES