

Low Rates of Service Connectivity for Soft Tissue Sarcoma among Eligible Vietnam Veterans with Agent Orange Exposure

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INTRODUCTION:

The Veterans Health Administration (VHA) is the largest integrated healthcare system in the United States, caring for over 9 million veterans. The Veterans Administration (VA) offers a disability program to compensate veterans for conditions incurred due to their service (service-connected conditions). This compensation can include a monthly payment as well as cost-free medical care for the condition.

Veterans who served in Vietnam or within twelve nautical miles of Vietnam shores between January 1962 and May 1975 are presumed to have Agent Orange exposure. The VA presumes by law that a number of diagnoses including respiratory cancers and prostate cancer are related to Agent Orange or other herbicide exposure during military service. Soft tissue sarcoma (STS) is also on the VA presumptive list for Agent Orange and herbicide exposure (1), but the rarity of STS may be a barrier for patients and their care teams to recognize and begin a VA disability claim. With the recent passage of the Promise to Address Comprehensive Toxics (PACT) Act, the VA has expanded service-connected health benefits for veterans exposed to burn pits and other toxic substances.

It is currently unknown whether veterans with STS are receiving the service-connected benefits for which they are eligible. The purpose of this study was to evaluate whether veterans with a diagnosis of STS have been service connected for their cancer. We hypothesized the Vietnam veterans with a recognized exposure to Agent Orange would have a high rates of service connection for STS.

METHODS:

Institutional Review Board approval was obtained for this retrospective study. Through the National VA Corporate Data Warehouse, all surgical pathology notes were identified from 2003 to 2022. These reports were retrospectively searched for the terms myxofibrosarcoma, dedifferentiated liposarcoma, myxoid liposarcoma, and undifferentiated pleomorphic sarcoma (UPS). These diagnoses represent the most common STS (2). Manual review of the pathology reports facilitated creation of a cohort of veterans with confirmed STS. Era of service, service-connected conditions, and information on Agent Orange exposure were abstracted from the data warehouse. All service-connected disability conditions for patients in the cohort were reviewed to determine whether or not these conditions may be related to STS. Examples of these conditions include malignant neoplasm of the respiratory system, or malignant growth of the bones. Proportions of groups were compared by Chi-square or Kruskal-Wallis tests.

RESULTS:

Over 10.5 million pathology reports were searched using the diagnosis terms. Manual review of pathology notes confirmed 200 myxofibrosarcoma, 148 dedifferentiated liposarcoma, 119 myxoid liposarcoma, and 257 undifferentiated pleomorphic sarcoma (UPS) cases in our cohort. Of the 724 total veterans in our cohort, 62 (8.5%) were specifically service-connected for STS. There was no difference in STS service condition by sarcoma subtype ($p=0.53$). Of the 6,786 non-sarcoma service-connected disability conditions for patients in our cohort, 232 (5%) were determined to be likely related to STS.

One-hundred-thirty-two (18%) patients were identified in the medical record as having exposure to Agent Orange. One-hundred-twenty-eight of these patients were exposed to Agent Orange in Vietnam, three were exposed in the Blue Water Navy (BWN), and one was exposed in the Korean Demilitarized Zone (DMZ). Veterans with recognized Agent Orange exposure were more likely to be service-connected for their STS (19% vs. 2.5%, $p<0.0001$). Service-connectivity varied significantly by era of service, and era with the highest proportion of STS service-connectivity was Vietnam (12%, $p=0.0006$).

Vietnam veterans with recognized Agent Orange exposure were more likely to be service-connected for their STS (29.5% vs. 4%, $p<0.0001$). However, 92/132 (70%) of Vietnam veterans with recognized Agent Orange exposure and a STS diagnosis were not specifically service-connected for sarcoma.

DISCUSSION AND CONCLUSION:

Although STS is a service-connected diagnosis for Agent Orange exposure, in the present study we found low rates of service connectivity for eligible veterans. These data suggest that the majority of eligible patients are not receiving disability compensation to which they are entitled. Following the passage of the PACT Act, there are additional veterans who are eligible for disability compensation for a range of conditions. Monitoring the rates of actual receipt of service connection and its documentation is one means of assessing the efficacy of these programs. Orthopaedic surgeons caring for veterans with STS may be able to assist veterans by encouraging them to file disability claims.

Level of Evidence: Diagnostic Study, Level II

Works Cited:

1. U.S. Department of Veterans Affairs. Soft Tissue Sarcoma and Agent Orange. Available at: <https://www.publichealth.va.gov/exposures/agentorange/conditions/soft-tissue-sarcoma.asp>, accessed March 14, 2023.
2. Stacchiotti, S. *et al.* Ultra-rare sarcomas: A consensus paper from the Connective Tissue Oncology Society community of experts on the incidence threshold and the list of entities. *Cancer* **127**, 2934–2942 (2021).