ASSOCIATION OF VA SURGEONS

The Effect of Agent Orange on Nonmelanoma Skin Cancer Regression Rates

Decades ago, the US military used herbicides, including Agent Orange (2,3,7,8-tetrachlorodibenzodioxin), in conflicts such as the Vietnam War. Agent Orange has since been linked to multiple ailments, including prostate cancer, porphyria, chloracne, Hodgkin disease, and many more.1 Recently, a pilot study by Clemens et al2 suggested that exposure to Agent Orange may increase the incidence of nonmelanotic invasive skin cancer (NMSC) among veterans when compared with the general population. They also found a greater risk when the exposure was through more direct means such as spraying the herbicide.

Frequently, following a biopsy, NMSCs may regress to the point that no evidence of carcinoma may be found after excision. The observation was first described by Goldwyn and Kasdon in 1978.3 Since their initial report, several studies4-6 have found regression rates varying from 24% to 72%. With the pilot study by Clemens et al2 suggesting that Agent Orange increased the incidence of NMSC, we aimed to determine if these NMSC lesions still behaved similarly. We then proceeded to design a study comparing regression rates between veterans with NMSC who were exposed to Agent Orange and veterans with NMSC who were not.

Methods | Veterans Affairs (VA) institutional review board approval was obtained to conduct a retrospective study of the period from 2003 to 2013. Participants did not provide consent because our study was deemed to be exempt by the institutional review board owing to its retrospective nature and lack of any patient communication or contact. There was also no financial compensation.

A database was created of patients from the Richard L. Roudebush VA Medical Center using International Classification of Diseases, Ninth Revision codes for NMSC and Current Procedural Terminology codes for both biopsy and excision. Inclusion criteria consisted of patients who had a biopsy of the lesion performed without any other concurrent dermatologic treatment (eg, electrodessication and curettage, cryotherapy, or topical chemotherapy), positive margins after initial biopsy, and, finally, excision of the lesion. Data on patient demographics, Agent Orange exposure, and lesion characteristics were collected. Agent Orange exposure was identified by the VA Agent Orange registry. Regression was defined as no evidence of residual carcinoma in the excision following positive margins on the initial biopsy. Statistical analysis was then performed with SPSS software (IBM) using the Fisher exact t test.

Results | There were 1499 lesions identified in 1024 patients. Demographic data are presented in Table 1. Of the 1499 lesions, 100 were the result of the patients being exposed to Agent Orange in Vietnam. There were 66 basal cell carcinomas (BCCs) and 34 squamous cell carcinomas (SCCs) in patients exposed to Agent Orange. For the entire population, a regression rate of 41.0% was observed. A differential regression rate was present with 30.7% regression for patients with BCC and 55.7% for patients with SCC. Differences between SCC and BCC regression were statistically significant (P < .05). For the patients exposed to Agent Orange, an overall regression rate of 43.0% was observed, with a rate of 36.4% for patients with BCC and 53.5% for patients with SCC. Once again, there was a significant difference between BCC and SCC, but no difference between exposure to Agent Orange and nonexposure (P < .05) (Table 2).

Discussion | In the pilot study by Clemens et al,2 veterans exposed to Agent Orange were found to have an increased incidence of NMSCs compared with the general population. If borne out in a larger data set, the difference is critical because it mandates closer surveillance of these patients. A logical extension of this study2 is that NMSCs behave differently with respect to regression when compared with patients without Agent Orange exposure. We found similar rates of regression between both cohorts in all 3 categories: BCC, SCC, and overall NMSC. With the suggestion that exposure results in patients developing more invasive forms of NMSC, the expectation is that Agent Orange would result in lesions that are less likely to regress. However, these findings demonstrate that, in a large cohort,
the NMSC lesions developing in patients exposed to Agent Orange do not regress any differently than the lesions developing in patients who were not exposed.

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Author Contributions: Drs Nosrati and Tholpady had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Dr Nosrati and Ms Han contributed equally and would like to be considered as co-first authors.

Study concept and design: All authors.

Acquisition, analysis, or interpretation of data: Nosrati, Han, Tholpady.

Drafting of the manuscript: Nosrati, Han, Tholpady.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Nosrati, Tholpady.

Administrative, technical, or material support: Nosrati, Flores.

Study supervision: Nosrati, Flores, Sood, Tholpady.

Conflict of Interest Disclosures: None reported.

Previous Presentation: This paper was presented as the Annual Meeting of the Association of VA Surgeons; April 7, 2014; New Haven, Connecticut.


ASSOCIATION OF VA SURGEONS

Using a Composite Readmission Measure to Assess Surgical Quality in the Veterans Health Administration: How Well Does It Correlate With Established Surgical Measures?

Preventing readmissions is a top priority in the current health care landscape. Although medical conditions have been the focus of these efforts, the Centers for Medicare and Medicaid Services recently added 30-day all-cause readmissions after total hip/knee replacement to their 2014 public reporting and pay-for-performance programs. Compared with medical conditions, readmissions after surgery have been poorly studied. Furthermore, whether they truly reflect hospital surgical quality is not clear. To address this gap, we developed a hospital-level readmission composite measure that included 7 major surgical procedures frequently performed in Veterans Affairs (VA) hospitals and assessed how well it correlated with other well-established surgical quality metrics.

Methods | We used 2009 administrative data to identify index surgical procedures for total hip/knee replacement, colectomy, lung resection, ventral hernia repair, radical prostatectomy, and thyroidectomy and associated unplanned 30-day readmissions using the Centers for Medicare and Medicaid Services hospital-wide, all-condition 30-day readmission algorithm. We followed a recently published method to calculate surgical volume (sum of procedure-specific volumes) and a risk-adjusted composite readmission rate (average of procedure-specific risk-adjusted readmission rates weighted by procedure-specific volume) for VA hospitals that performed at least 5 index surgical procedures in 2009. For each of the 67 VA hospitals with advance surgical programs, we examined the correlation between the composite readmission rate and the VA Surgical Quality Improvement Program (VASQIP) mortality and morbidity observed to expected ratios and the Surgical Care Improvement Program compliance scores from the 2010 VA Facility Quality and Safety Report generated based on data collected in 2009 (first as continuous variables and then by grouping each measure into quartiles).

Results | Of the 13 282 index surgical procedures assessed, 982 (7.4%) were associated with a 30-day readmission. Readmission rates varied by type of surgery, ranging from 5.1% for thyroidectomy to 12.8% for colectomy. The mean (SD) hospital-level composite readmission rate was 7.3% (4.0%) (Table 1). Hospitals’ readmission rates were significantly, albeit weakly, correlated with hospitals’ VASQIP morbidity observed to expected ratios ($r = 0.31, P = .01$); they were not significantly associated with any of the other measures (Table 2).

Discussion | Use of readmission measures to assess surgical quality may capture other quality problems missed by other commonly used surgical metrics. Our findings that hospital-level readmission rates were not strongly correlated with standard surgical quality metrics are consistent with a recent study demonstrating that half of all surgical readmissions were not associated with a complication currently assessed by the VASQIP (eg, readmissions due to ileus or dehydration after colectomy). Although the units of analysis differed (hospital vs patient), both studies suggest that readmissions may represent an additional dimension of surgical quality compared with other measures, such as care related to preoperative preparation, discharge planning, management of medical comorbidities, or access to care. Given that hospitals may soon be penalized based on excess rates of surgical readmissions, health care professionals should think beyond the traditional surgical quality metrics (eg, by expanding the definition of postoperative complications to include procedure-specific events and by improving processes of care in discharge planning to reduce readmissions after surgery).

From a quality-measurement perspective, our findings suggest that the quality of surgical care at a hospital can be...