

Mortality from nonneoplastic skin disease in the United States

Jason P. Lott, MD, MSHP^{a,c,d} and Cary P. Gross, MD^{b,c}
New Haven, Connecticut

Background: The mortality burden from nonneoplastic skin disease in the United States is unknown.

Objective: We sought to estimate mortality from nonneoplastic skin disease as underlying and contributing causes of death.

Methods: Population-based death certificate data detailing mortality from nonneoplastic skin disease for years 1999 to 2009 were used to calculate absolute numbers of death and age-adjusted mortality by year, patient demographics, and 10 most commonly reported diagnoses.

Results: Nonneoplastic skin diseases were reported as underlying and contributing causes of mortality for approximately 3948 and 19,542 patients per year, respectively. Age-adjusted underlying cause mortality (per 100,000 persons) were significantly greater ($P < .0001$) for patients who were black/African American (3.4), women (1.4), and residing in the South (1.6). Most deaths occurred in patients ages 65 years and older (34,248 total deaths). Common underlying causes of death included chronic ulcers (1789 deaths/y) and cellulitis (1348 deaths/y).

Limitations: Errors in death certificate data and inability to adjust for patient-level confounders may limit the accuracy and generalizability of our results.

Conclusion: Mortality from nonneoplastic skin disease is uncommon yet potentially preventable. The elderly bear the greatest burden of mortality from nonneoplastic skin disease. Chronic ulcers and cellulitis constitute frequent causes of death. (J Am Acad Dermatol 2014;70:47-54.)

Key words: death certificate; dermatology; epidemiology; health disparities; mortality; outcomes; public health; skin disease; vital statistics.

Mortality attributable to neoplastic skin disease, including cutaneous squamous cell carcinoma,¹⁻³ basal cell carcinoma,³⁻⁵ and melanoma,⁶⁻⁸ has been previously described in US-based and internationally based studies. However, population-based studies examining death from nonneoplastic skin disorders in the United States have not been performed to our knowledge. Several factors may account for the lack of such analyses, including the low incidence of potentially fatal nonneoplastic skin disease and rarity of death from more commonly encountered

Abbreviations used:

CDC:	Centers for Disease Control and Prevention
NCHS:	National Center for Health Statistics
WONDER:	Wide-ranging Online Data for Epidemiologic Research

nonneoplastic dermatoses. In addition, advances in diagnosis and treatment of nonneoplastic skin disorders that may have once posed serious health threats, such as bullous dermatoses and autoimmune

From the Department of Dermatology,^a Department of Internal Medicine,^b and Robert Wood Johnson Foundation Clinical Scholars Program,^c Yale University School of Medicine and the Veterans Administration (VA) Connecticut Healthcare System.^d

Funding sources: None.

Conflicts of interest: None declared.

Accepted for publication September 25, 2013.

Reprint requests: Jason P. Lott, MD, MSHP, Yale University School of Medicine, 333 Cedar St, SHM IE-61, PO Box 208088, New Haven, CT 06520. E-mail: jason.lott@yale.edu.

Published online November 14, 2013.

0190-9622/\$36.00

© 2013 by the American Academy of Dermatology, Inc.

<http://dx.doi.org/10.1016/j.jaad.2013.09.039>

connective tissue diseases, have resulted in improved survival for many of these conditions.⁹⁻¹⁴

Nevertheless, estimating the burden of mortality from nonneoplastic skin disease remains important for clinicians and policy makers. An accurate understanding of this burden can allow for identification of potentially preventable deaths and disparities in health care access and quality. A recent study of inpatient hospitalization records and death certificates, for example, found 87 deaths related to psoriasis in the United States from 1999 to 2001, prompting the authors to note that “psoriasis continues to be at least a factor, if not the ultimate cause of, patient deaths,” and reflect that “it is distressing to think that some of these deaths might have been prevented.”¹⁵ Further studies, however, have not been conducted to quantify the overall magnitude of and assess variation in mortality resulting from nonneoplastic skin diseases across the United States. Given that death from nonneoplastic skin disease may be potentially preventable, understanding the burden of mortality from these disorders may be important for optimization of clinical care.

For the purposes of vital statistics reporting, skin disease may be recorded as a cause of mortality in 2 ways. First, it may serve as the “underlying cause of death,” defined, according to the World Health Organization, as “the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury.”^{16,17} Alternatively, skin disease may serve as a “multiple cause of death,” denoting “health conditions giving rise to the immediate cause of death and other conditions contributing to death.”^{16,17} Diseases in the latter category can be conceptualized as “contributing” causes of mortality. Consideration of nonneoplastic skin diseases as both underlying and contributing causes of mortality allows for a broad, clinically relevant contextualization of these disorders, which may increase risk of death through various mechanisms, including proinflammatory cytokine cascades in psoriasis,^{18,19} impaired immunity in blistering dermatoses, and visceral organ damage in autoimmune connective tissue diseases.

In this study, we sought to describe US population-based mortality consequent to

nonneoplastic skin disease, as both underlying and contributing causes of death, using publicly available death certificate data. We also sought to quantify variation in this mortality burden by select patient demographics, including age, gender, race, ethnicity, and geographic residence.

CAPSULE SUMMARY

- The mortality burden of nonneoplastic skin disease is unknown.
- This study provides US population-based mortality estimates for nonneoplastic skin disease, revealing variation by race and other patient demographics.
- Mortality from nonneoplastic skin disease is unequally distributed across patients in the United States.

METHODS

The design of this study was cross-sectional and US population based. Our primary aim was to estimate absolute numbers of death and age-adjusted mortality of nonneoplastic skin diseases reported as underlying and contributing causes of death. Our secondary aim was to identify the 10 most common nonneoplastic dermatoses reported as underlying and contributing causes

of death. Our tertiary aim was to identify the 10 most common underlying causes of death (inclusive of all diseases) associated with nonneoplastic dermatoses reported as contributing causes of mortality. In addition, we hypothesized that increased mortality from nonneoplastic skin disease might be associated with increasing patient age, black/African American race, Hispanic ethnicity, residence in the South, and residence in inner cities/rural counties. Our hypotheses were motivated by well-known sociodemographic parameters affecting overall health status and outcomes,^{20,21} and geographic disparities in dermatology workforce distribution that may impede access to dermatologic care.^{22,23}

We examined death certificate data detailing nonneoplastic skin disease for years 1999 to 2009 from the Centers for Disease Control and Prevention (CDC) Wide-ranging Online Data for Epidemiologic Research (WONDER) database (<http://wonder.cdc.gov/>).^{16,24} CDC WONDER houses nationwide death certificate data from the National Center for Health Statistics (NCHS). Mortality data are obtained from the 57 vital statistics jurisdictions of the Vital Statistics Cooperative Program (comprising the 50 US states, Puerto Rico, the US Virgin Islands, Guam, American Samoa, the Northern Mariana Islands, the District of Columbia, and New York City), and from death certificates provided directly to NCHS by state governments.²⁵ Death certification information is registered and recorded by physicians, certifying medical examiners, and/or coroners, which is then abstracted and stored electronically using the Automated Classification of Medical Entities software program

Download English Version:

<https://daneshyari.com/en/article/6072512>

Download Persian Version:

<https://daneshyari.com/article/6072512>

[Daneshyari.com](https://daneshyari.com)