



Epidemiology and outcomes of NSTI: A population-based incidence study of California hospitalizations in 2016

Tessa Zangara BA, Cordelie Witt MD MPH, Patrick Hosokawa MS, Lisa Ferrigno MD MPH FACS



Background

- **Background:**
 - **Necrotizing soft tissue infections:**
 - Incidence reported at 500-1500/year or 0.4/100,000 (group A strep)¹
 - More recent estimates use databases with sampling, requiring back calculations
 - Misdiagnosis is common: 41 - 96%²
 - Mortality: 4-46%³
 - Lack of epidemiologic data limits diagnostic and prognostic calculators
- **Purpose:**
 - Assess patients with NSTI hospitalized in CA in 2016
 - Population-based incidence
 - Demographics, comorbidities, anatomic spectrum
 - Patient outcomes

Methods

- Retrospective review:
 - California Office of Statewide Health Planning and Development Patient Discharge Database
 - All hospitalized patients
 - 2016
 - Patients selected using ICD-10 diagnosis codes; operative interventions assessed via ICD-10 procedure codes
 - Excluded patients previously hospitalized for soft tissue infection before 2016

Results

- **1925 patients**
- **Incidence: 4.9/100,000**

Demographics	N (%) or median (IQR)
Male sex	1312 (68%)
White race	933 (49%)
Age (years)	55 (44 -64)

Comorbidities	N (%)
Hypertension	1,172 (61%)
Diabetes mellitus	1,150 (60%)
Injection drug use	743 (39%)
Obesity	634 (33%)
Chronic kidney disease	517 (27%)
Venous insufficiency	470 (24%)
Cancer	249 (13%)

Disposition	N (%)
Home/self care/home health	993 (52%)
SNF/intermediate care	548 (28%)
Rehabilitation	29 (2%)
Other inpatient facility	44 (2%)
Death/hospice	297 (15%)
Other	14 (1%)

Outcomes	N (%) or median (IQR)
Hospital LOS (days)	10 (5 - 20)
Number of debridements	1 (1 - 1)
Severe sepsis	619 (32%)
Septic shock	297 (15%)
Vasopressors	83 (4%)
Mechanical ventilation	458 (24%)
Tracheostomy	47 (2%)
Dialysis	98 (5%)
Death or hospice	297 (15%)

Discussion

- Incidence higher than some historical reports
- Highest prevalence among 50-59-year-old white males
- Common comorbidities: DM, HTN, IVDU
- Many, but not majority, required advanced ICU therapies
- Only ~ 50% discharged home; 15% death/hospice