

Prescribing Patterns of Skin and Soft Tissue Infections in Patients Discharged from the Emergency Department

Introduction

- Skin and Soft tissue Infections (SSTIs) are commonly treated in the Emergency Department (ED)
- Inadequate initial antibiotic treatment given in the ED has been reported in up to 25%.¹
- 30-day-readmission rate for residual SSTI complications have been reported up to 15%.²
- We evaluated the prescribing patterns of antibiotics given in the ED of a regional health system to determine if guideline directed therapy (GDT) is utilized.

Methods

- **Design:** Single center retrospective cohort study examining ED visits at Ascension St. John Hospital
- **Inclusion:** Patients ≥ 18 years old treated for mild non-purulent or moderate purulent SSTI between 7/1/2020 and 12/31/2020.
- **Exclusion:** Severe SSTI, Immunocompromised, Intravenous Drug Abuse (IVDA), Human/Animal Bite wounds, no receipt of systemic antibiotics, or admitted to inpatient
- **Data Collected**
 - Demographics (age, weight, race)
 - Charlson Comorbidity Index (CCI)
 - Antibiotic regimen
 - Readmission
 - Reasons for readmission
- We evaluated the appropriateness of antibiotics chosen as well as dose, frequency, and duration (GDT).
 - GDT is defined as appropriate antibiotic as well as dose, duration and frequency

Statistical Methods

- Continuous variables analyzed with Student's t test
- Categorical variables analyzed with the chi-squared test

This project was approved by Ascension St. John Institutional Review Board

Results

Figure 1. Study Enrollment

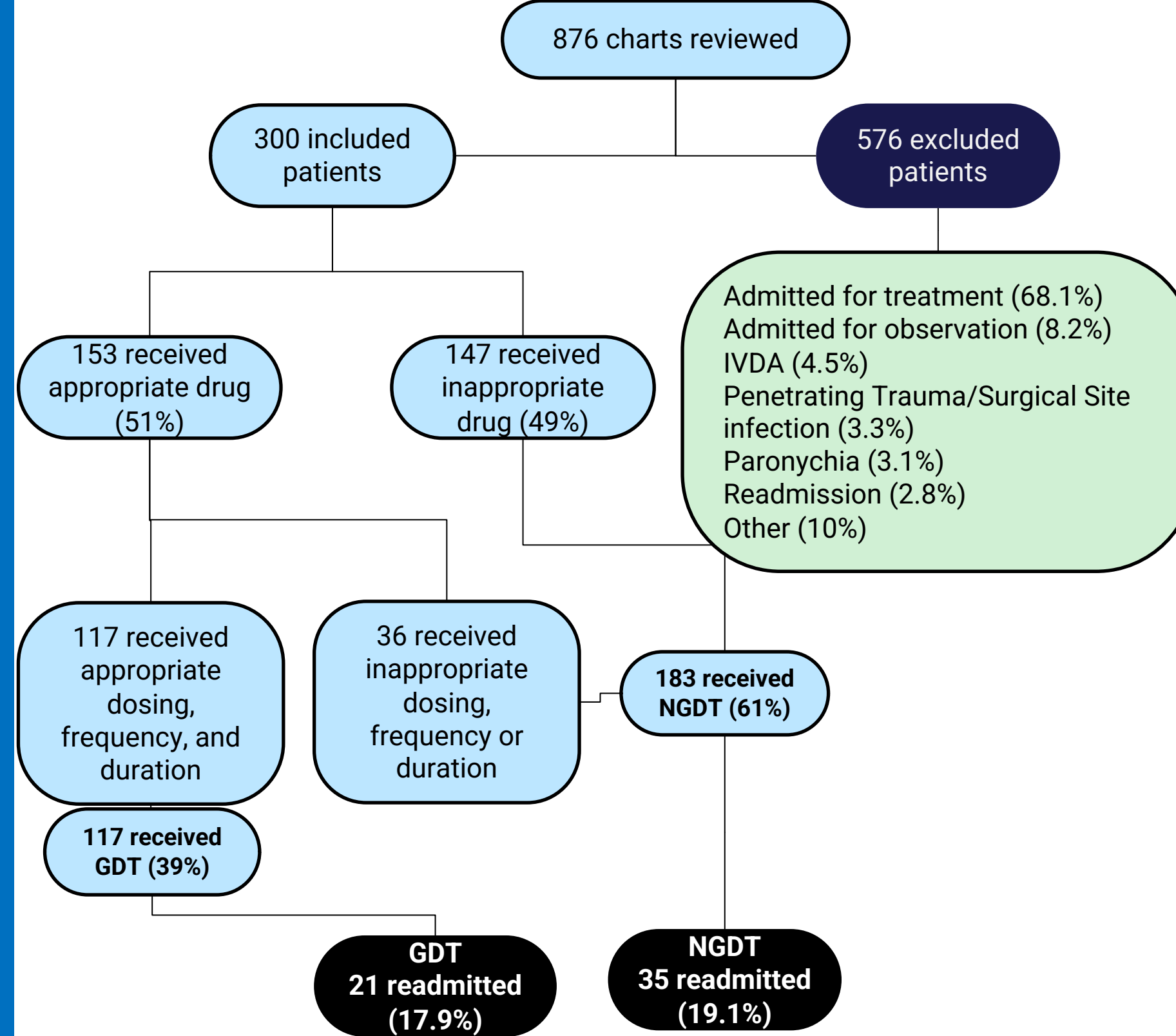


Table 1. Patient Characteristics

	GDT (n=117)	Non-GDT (n=183)	p-value
Female	50	109	0.004
Mean Age (years)	39.6	36.9	0.12
Mean BMI (kg/m2)	30.7	30.6	0.84
Race			
White	17	27	0.39
Black	100	151	0.39
Other	0	5	0.39
CCI	0.359	0.219	0.23
Purulent	74	114	0.87
Non-purulent	43	69	0.87
Antibiotics within 1 year	44	40	0.87

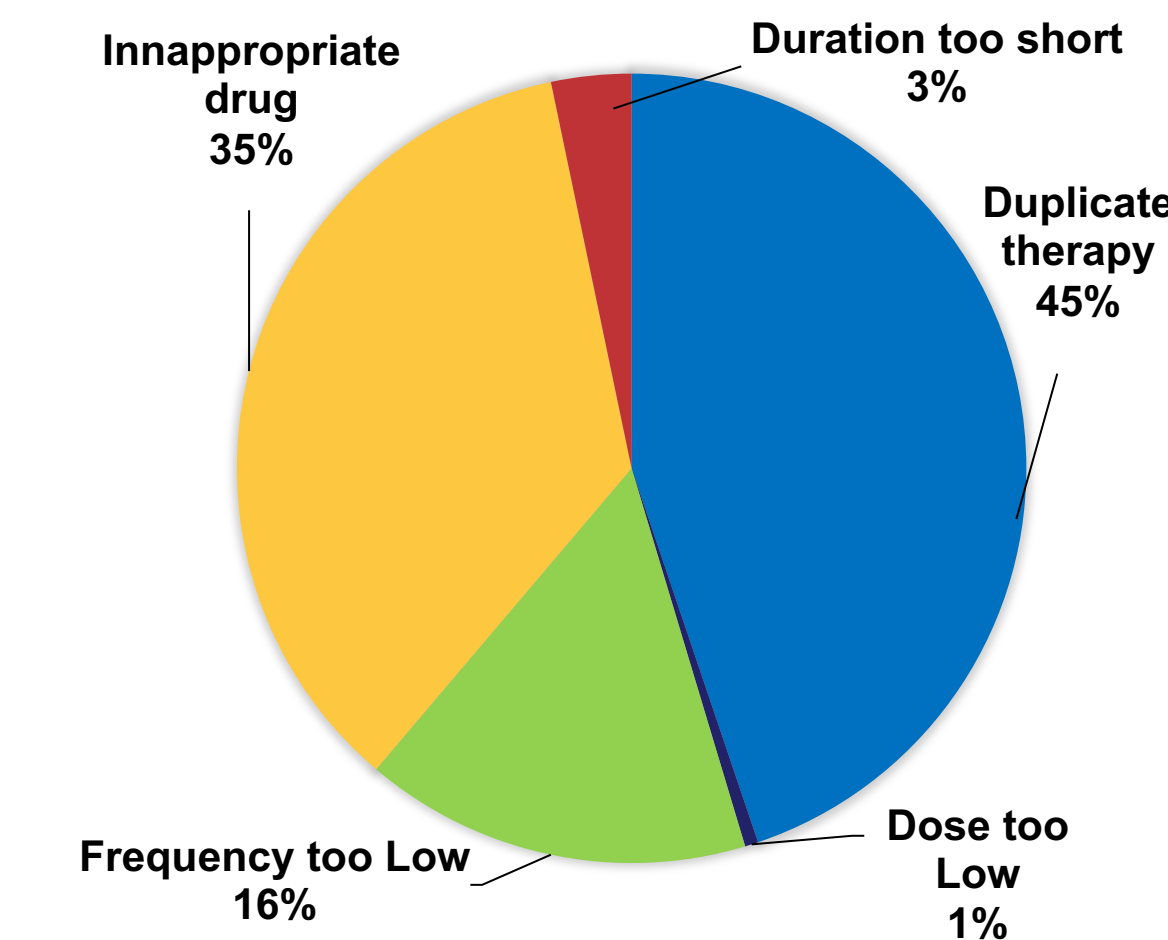
Table 2. Readmission Rate by Group

	30 day Readmission rate	P-value
Appropriate antibiotic	19.6	0.57
Inappropriate antibiotic	17.6	
GDT	17.9	0.8
Non- GDT	19.1	

Table 3. Reason for Readmission

	GDT (n=21)	Non-GDT (n=35)	P-value
Persistent symptoms or progression of original SSTI	9	11	0.57
Reasons not due to progression or persistence of original SSTI	12	24	0.46

Figure 2. Major Causes of Non-Guideline Therapy



Summary

- Inappropriate drug choice or duplicate therapy were the main reasons for non-GDT, making up 80% of 183 subjects who did not receive GDT:
 - 64 patients received an inappropriate drug as monotherapy
 - 82 patients received duplicate therapy or "double coverage"
- Inappropriate dosing, duration, and frequency were less common reasons for non-GDT.
- The only significant difference between the demographics of those who receive GDT versus non-GDT was gender:
 - Females were more likely to receive Non-GDT than males.

Conclusions

- Majority of prescribed treatment for SSTI did not conform to GDT.
- 30-day readmission rates did not significantly differ from those who received GDT and those who did not.

Limitations

- Retrospective Chart Review
- Limited Sample Size

Future Directions

- Further research is needed on ED treated SSTI and associated outcomes in order to guide future education and subsequent prescribing practices.

References

1. Macia-Rodríguez C, Alende-Castro V, Vazquez-Ledo L, Novo-Veleiro I, González-Quintela A. Skin and soft-tissue infections: Factors associated with mortality and readmissions. *Enferm Infecc Microbiol Clin*. 2017 Feb;35(2):76-81. doi: 10.1016/j.eimc.2016.02.030. Epub 2016 Apr 6. PMID: 27061974.
2. Linder KE, Nicolau DP, Nailor MD. Epidemiology, treatment, and economics of patients presenting to the emergency department for skin and soft tissue infections. *Hosp Pract (1995)*. 2017 Feb;45(1):9-15. doi: 10.1080/21548331.2017.1279519. Epub 2017 Jan 16. PMID: 28055287