

Abstract:

A. Title: Antibiotic Stewardship in Skin and Soft Tissue Infections

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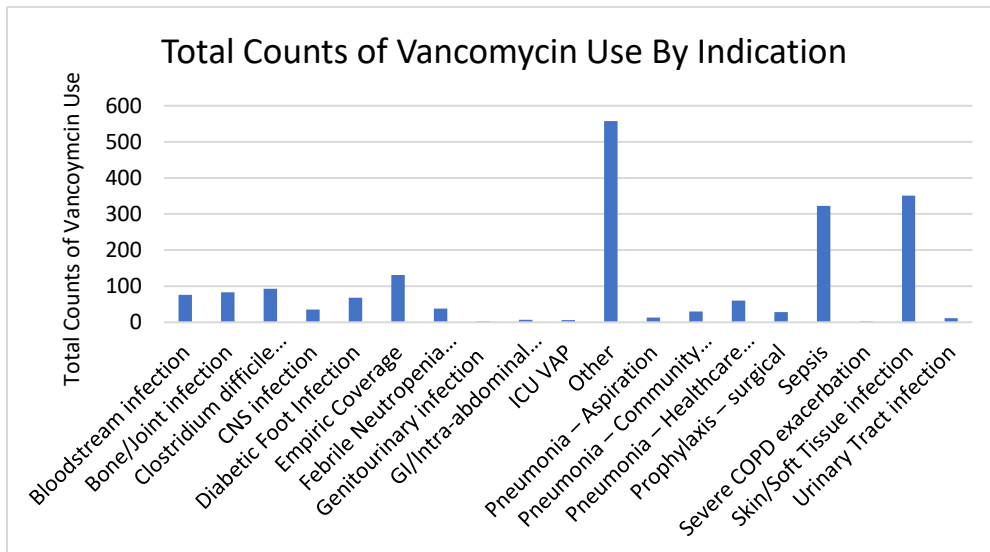
C. Faculty Mentors: Jose Campo Maldonado, MD

D. Introduction: Skin and soft tissue infections (SSTIs) are characterized by microbial invasion of the skin layers and are common in various healthcare settings. Physicians primarily refer to the Infectious Diseases Society of America’s (IDSA) 2014 classification of SSTIs. The IDSA classifies them as primarily nonpurulent (cellulitis, erysipelas, and necrotizing) versus purulent (furuncles, carbuncles, and abscesses). In this classification, abscesses and cellulitis are the most prevalent. One study, conducted between 2005-2010 in the United States, found a combined total of 2.3 million cases of SSTIs in ambulatory and inpatient settings. This was higher than the rates of pneumonia and urinary tract infections during the same time period. Another study found that between 2000 and 2012, there was a 40% increase (2.4 million to 3.3 million) in cases of SSTIs. Clearly, the disease burden of SSTIs is high and concerning.

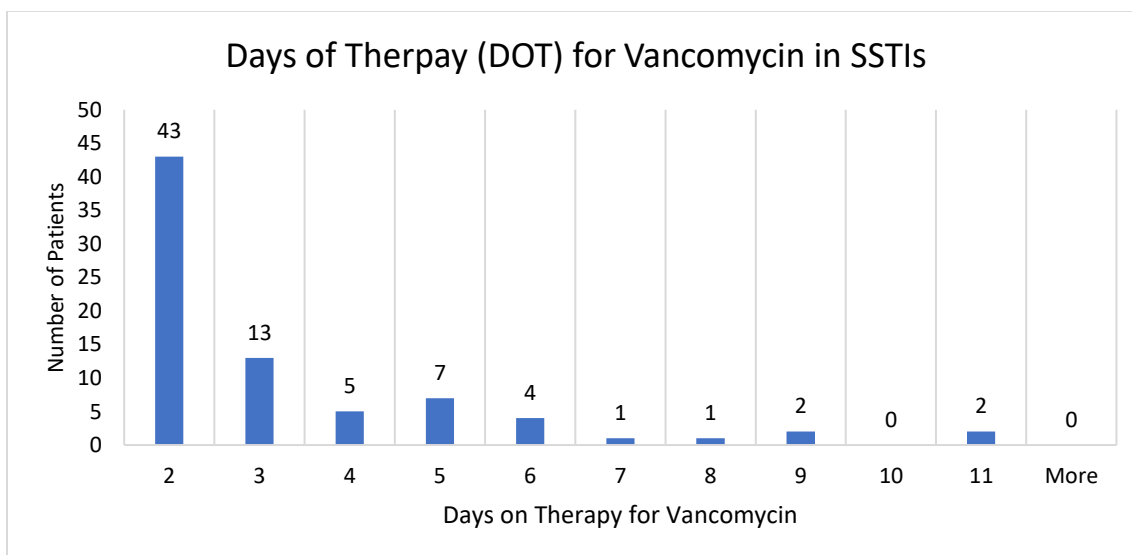
E. Objective: Our aim is to study the primary uses of vancomycin and piperacillin/tazobactam and their average days of therapy in the treatment of SSTIs.

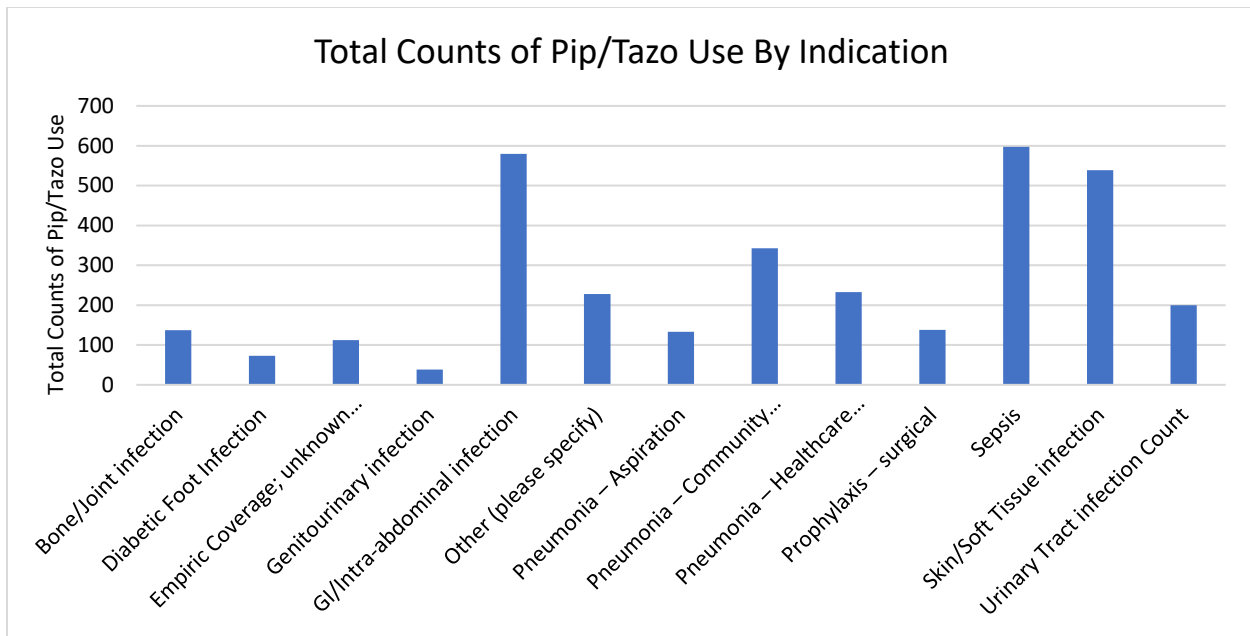
F. Methods: Data was collected for during January of 2019 of all administrations of antimicrobial use in a local hospital, which included the emergency department, inpatient admissions, and intensive care unit. These data points were sorted by antimicrobial, dates administered, and then by their indicated use. Indicated uses were then tallied on a histogram and an average days on therapy was calculated per patient.

G. Results:



Indication for Vancomycin	Count
Bloodstream infection	76
Bone/Joint infection	83
Clostridium difficile infection	93
CNS infection	35
Diabetic Foot Infection	68
Empiric Coverage	131
Febrile Neutropenia infection	38
Genitourinary infection	2
GI/Intra-abdominal infection	7
ICU VAP	6
Other	558
Pneumonia – Aspiration	13
Pneumonia – Community Acquired	30
Pneumonia – Healthcare Associated	60
Prophylaxis – surgical	28
Sepsis	323
Severe COPD exacerbation	2
Skin/Soft Tissue infection	351
Urinary Tract infection	11
Total Count	1915





Indication for Pip/Tazo	Count
Bone/Joint infection	137
Diabetic Foot Infection	73
Empiric Coverage; unknown source	112
Genitourinary infection	38
GI/Intra-abdominal infection	580
Other (please specify)	228
Pneumonia – Aspiration	133
Pneumonia – Community Acquired	343
Pneumonia – Healthcare Associated	233
Prophylaxis – surgical	138
Sepsis	597
Skin/Soft Tissue infection	539
Urinary Tract infection Count	200
Total Count	3351

H. Discussion: Our analysis illustrates that the top three indicated uses of vancomycin was other, sepsis, and SSTIs, in descending order. The average days of therapy per patient for use of vancomycin in the treatment of SSTIs was 2.97 days. Piperacillin/tazobactam similarly was used primarily for sepsis, gastrointestinal/intra-abdominal infections, and SSTIs, in descending order.

I. Conclusion: Our analysis shows that the average days of therapy for use of vancomycin in the treatment of SSTIs was 2.97. Study limitations include the limited, one-month duration of the data set. Our plan is to expand this work using data from a 12-month period on use of antimicrobials in the same hospital. We intend to compare the average days of therapy for different indications (i.e sepsis) and compare to national averages. We hope to interpret these data in the context of guideline recommendations on duration of intravenous therapy for SSTIs, so as to surmise what differences may exist between guidelines and clinical practice.

K. References:

1. Spelman, D., 2020. *Cellulitis And Skin Abscess In Adults: Treatment*. [online] UpToDate. Available at: <https://www-uptodate-com.ezhost.utrgv.edu/contents/cellulitis-and-skin-abscess-in-adults-treatment?search=cellulitis&source=search_result&selectedTitle=4~150&usage_type=default&display_rank=3> [Accessed 20 November 2020].
2. Spelman, D., 2020. *Cellulitis And Skin Abscess: Epidemiology, Microbiology, Clinical Manifestations, And Diagnosis*. [online] UpToDate. Available at: <https://www-uptodate-com.ezhost.utrgv.edu/contents/cellulitis-and-skin-abscess-epidemiology-microbiology-clinical-manifestations-and-diagnosis?search=s%20infections&source=search_result&selectedTitle=7~150&usage_type=default&display_rank=6> [Accessed 20 November 2020].
3. Kaye, K., 2019. *Current Epidemiology, Etiology, And Burden Of Acute Skin Infections In The United States*. [online] NCBI. Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6452002/>> [Accessed 20 November 2020].