

Introduction

Cellulitis is a common infectious disease and some patients may need to be admitted for treatment with intravenous antibiotics. Blood cultures are often blindly and routinely obtained in most patients who are admitted for cellulitis. This practice may contribute to the ever-increasing costs in medical healthcare. Even so, a number of patients were discharged based on objective clinical improvement even before the official blood culture results were out.

Methodology

This is a cross-sectional study. Medical records of all adult patients admitted to Hospital Port Dickson between 1st January 2018 to 31st December 2018 with a diagnosis of cellulitis are reviewed and analyzed. We ascertained demographics, past medical history, risks factors for developing cellulitis, antibiotics used, any blood cultures taken and positivity of blood cultures by reviewing patient medical records. We also take note of the decision of changing antibiotics in the hospital or upon discharged and whether the decisions made were based on the blood culture results.

Results

Among 73 patients hospitalized with a diagnosis of cellulitis, blood cultures were obtained in 62 patients (84.9%). Blood cultures were positive in 2 patients (3.2%), however both results were considered contaminants. All of the patients that were admitted were started with antibiotics. 21 patients (28.8%) had their antibiotics changed in ward and all of the decision were made by physicians based on clinical factors and were not affected by the blood culture results.

Conclusion

The aim of this study is to determine the incidence of bacteremia in cellulitis and the role of blood cultures in the management of cellulitis in a local setting in Hospital Port Dickson. In this study, blood cultures never revealed a significant result in these adults admitted for cellulitis and no patient required a change in antibiotics based on the blood culture results. Clinicians may need to judiciously screen patients who are at risks of developing septicemia and order blood cultures accordingly as this study does not show a need for blood cultures in the management of cellulitis.

Discussion

Blood cultures are often and routinely obtained in patients being admitted for cellulitis. However, numerous studies have found a relatively low incidence of bacteremia proven by a positive blood cultures, which lie in the range of 2.0-18.5% [2, 5-10]. Most of these infections are caused by beta-hemolytic streptococci, followed by Staphylococcal aureus and several other organisms [2]. The rate of contaminants in blood cultures are also relatively high (3.6-4.8%). [2,5,9] IDSA has advised against blood cultures in patients with cellulitis, and blood cultures should be considered only for patients with malignancy, on chemotherapy, neutropenia, severe cell-mediated immunodeficiency, immersion injuries and animal bites. [3] Despite the guidelines, clinicians often still routinely order blood cultures as they are unable to determine which patients may benefit from the blood cultures. This practice may contribute to the increasing workload of healthcare professionals to obtain and process the blood culture and further contribute to the ever-increasing medical healthcare costs. Even so, a number of patients were discharged based on objective clinical improvement even before the official blood culture results were out. Based on findings of this study, clinicians are encouraged to individualized their approach to the usage of blood cultures in patients with cellulitis and choose appropriate antibiotics based on national guidelines and local susceptibility if available.

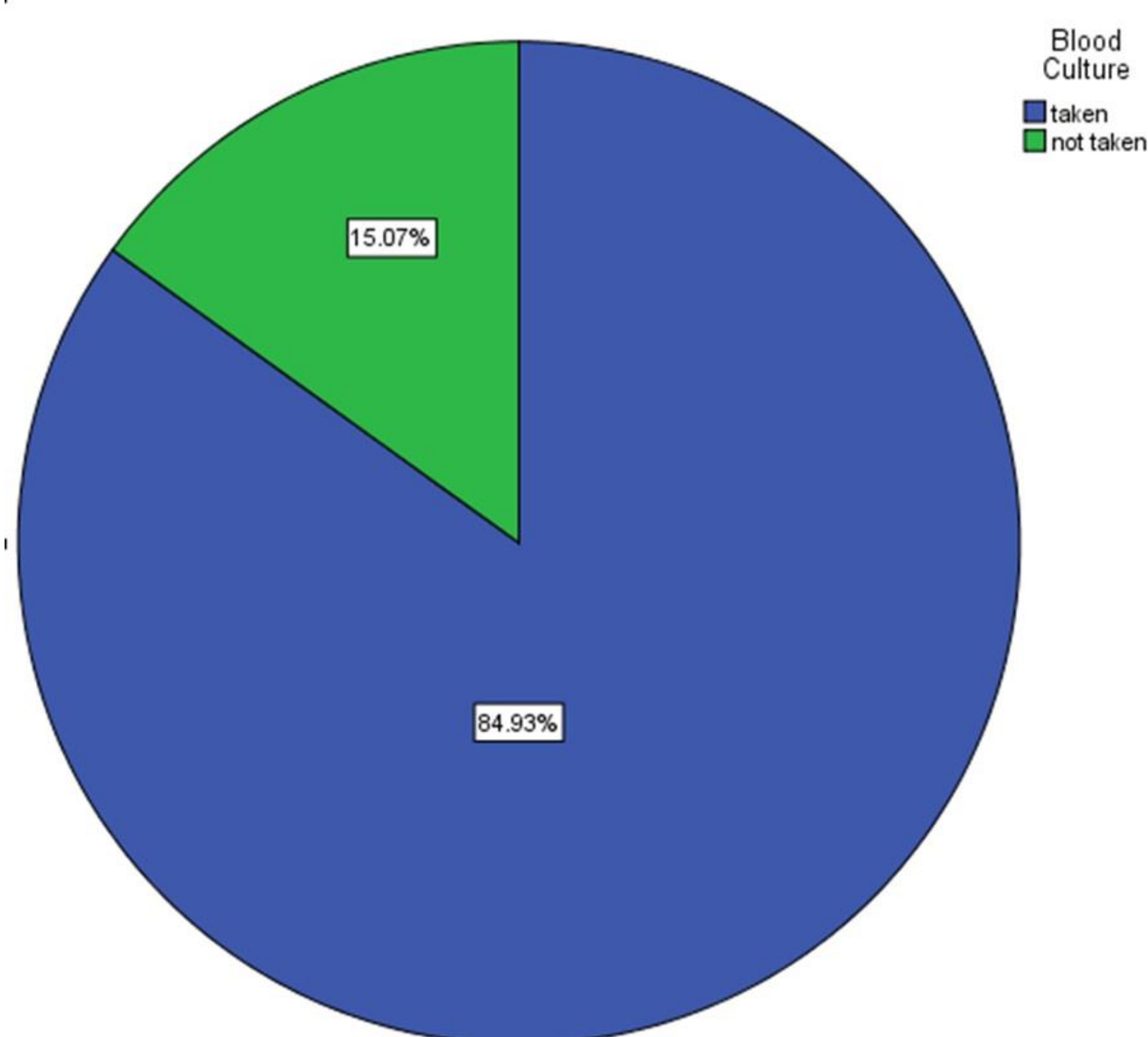


Figure 1a. Percentage of blood culture taken in this study.

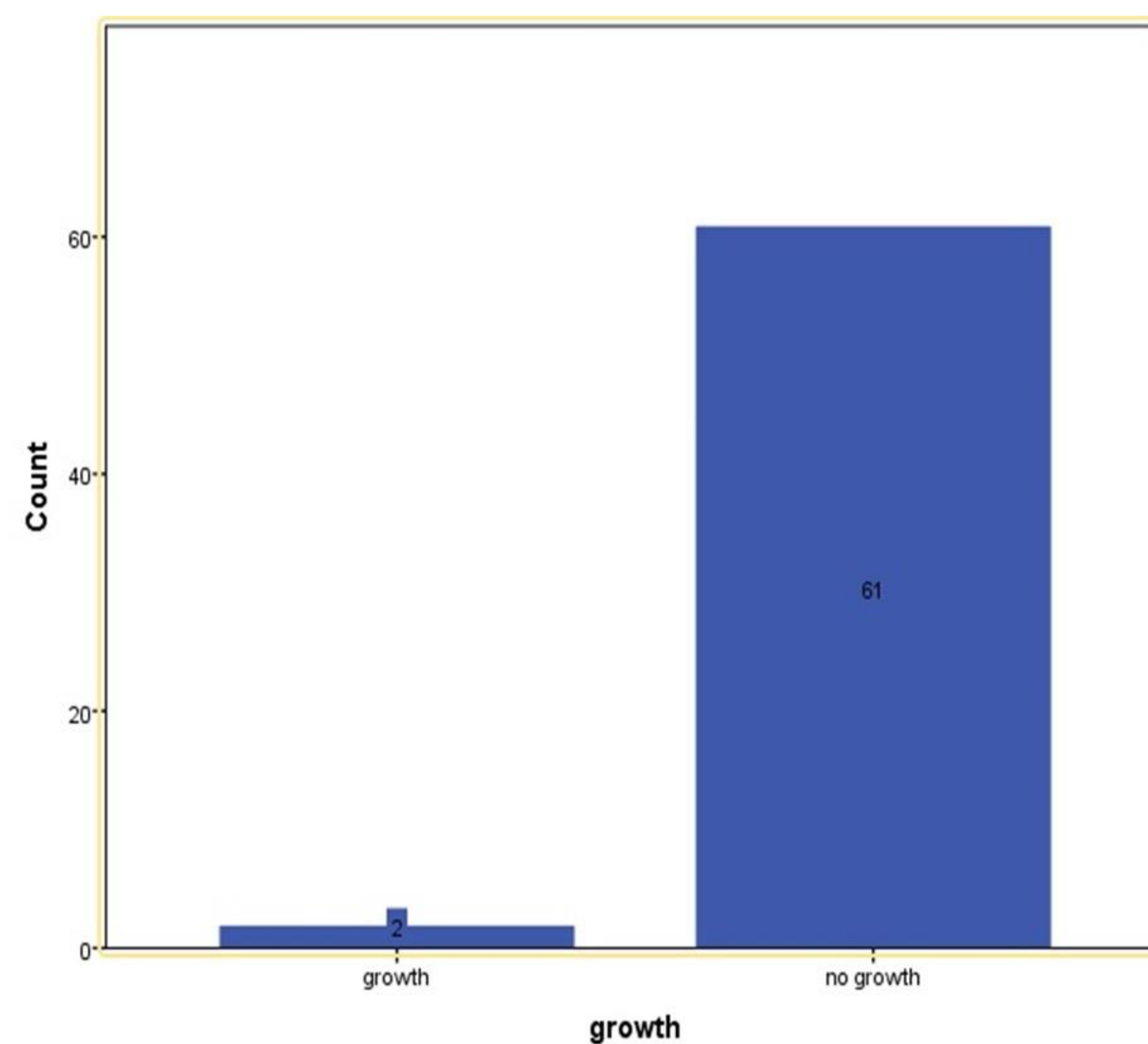


Figure 1b. Total number of positive and negative blood cultures in this study.

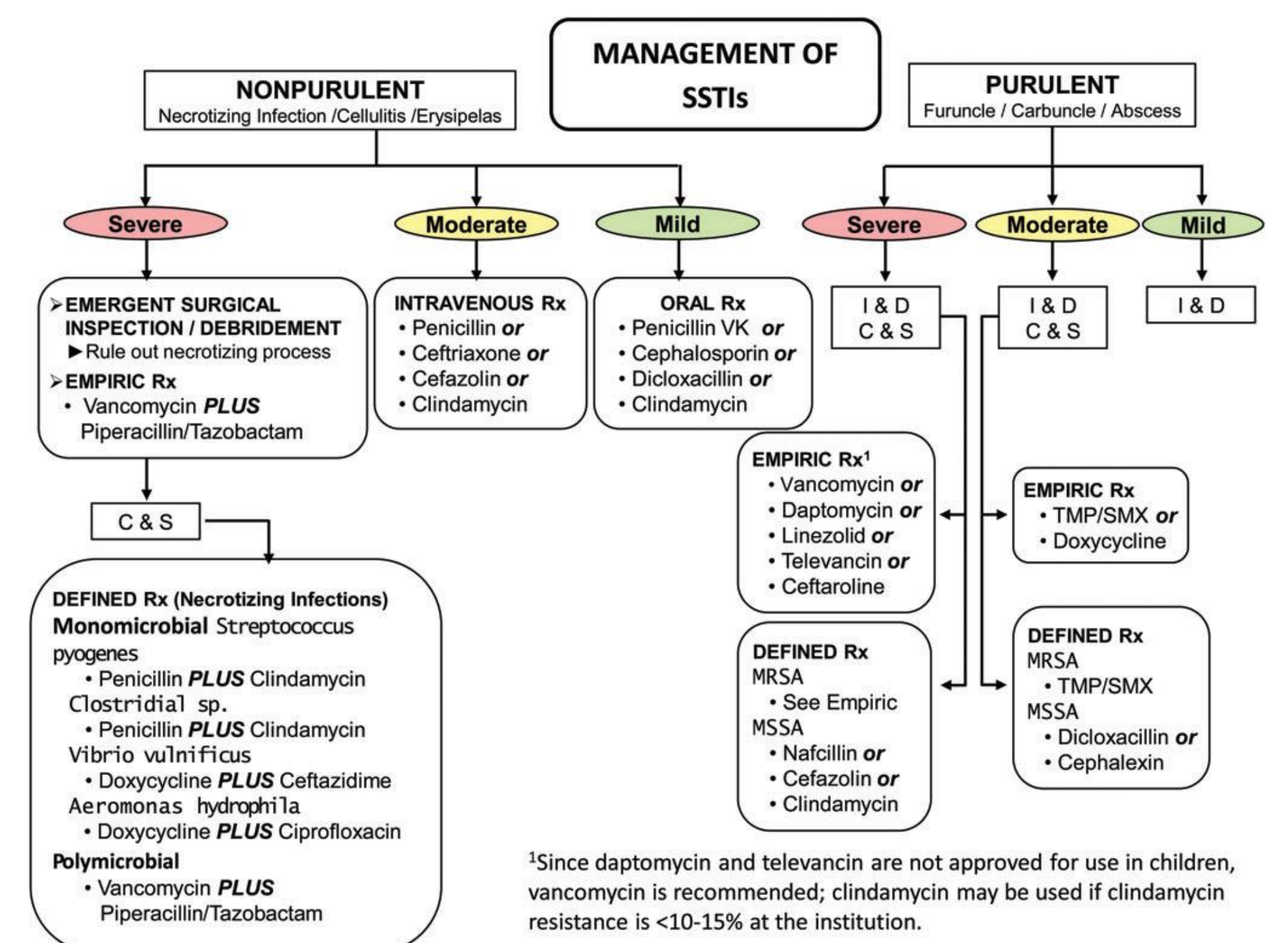


Figure 2. Recommendations of treatment guidelines for purulent and non purulent skin and soft tissue infections (SSTIs). Clinical Infectious Diseases 2014;59(2):e10-52

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