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STUDY OF PUS CULTURES WITH POSITIVE STAPHYLOCOCCUS AUREUS CULTURE RESULTS

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ABSTRACT

Objective: This study aimed to determine Staphylococcus Aureus antibiotic resistance to different antibiotics. **Materials and methods:** This is a retrospective study at Alhomsi Laboratory between 1/10/2018 and 31/7/2019 including all samples of pus with staphylococcus culture results during the studied period. **Results:** We found 90 samples with Staphylococcus Aureus Infection. The most resistance was against norfloxacin (70%), while the highest sensitivity against Staphylococcus Aureus was by Imipenem (85%). **Conclusion:** Resistance of the Staphylococcus Aureus in our study to different antibiotics was much higher than the resistance percentages of similar studies and that shows the obvious misuse, overuse and lack of knowledge about their effects among general population.

INTRODUCTION

The rapid emergence of resistant bacteria is occurring worldwide, endangering the efficacy of antibiotics, which have transformed medicine and saved millions of lives.[1–6] Many decades after the first patients were treated with antibiotics, bacterial infections have again become a threat.[7] The antibiotic resistance crisis has been attributed to the overuse and misuse of these medications, as well as a lack of new drug development by the pharmaceutical industry due to reduced economic incentives and challenging regulatory requirements.[2–5,8–15] The Centers

for Disease Control and Prevention (CDC) has classified a number of bacteria as presenting urgent, serious, and concerning threats, many of which are already responsible for placing a substantial clinical and financial burden on the health care system, patients, and their families.[1,5,11,16] Coordinated efforts to implement new policies, renew research efforts, and pursue steps to manage the crisis are greatly needed.[2,7]

MATERIALS AND METHODS

This study was a retrospective study of all the pus cultures with staphylococcus positive results with of the patients who reviewed Alhomsi laboratory between 1/10/2018 to 31/7/2019. This study included 90 cases. Only the authors to ensure the privacy collected all the data and all the names and personal information were blinded. Informed consent was taken from all the patients to be included in this study. Statistical analysis was done using SPSS 25.0.

RESULTS

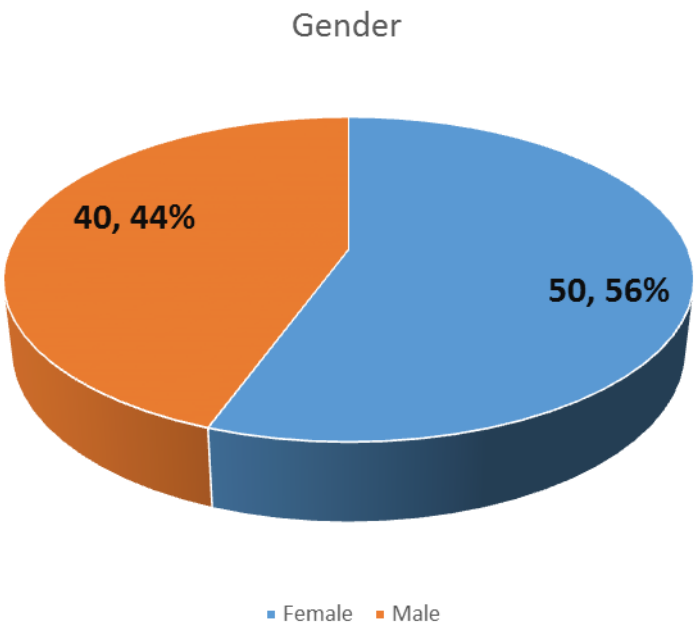

Figure 1: Gender Distribution of Our Study.

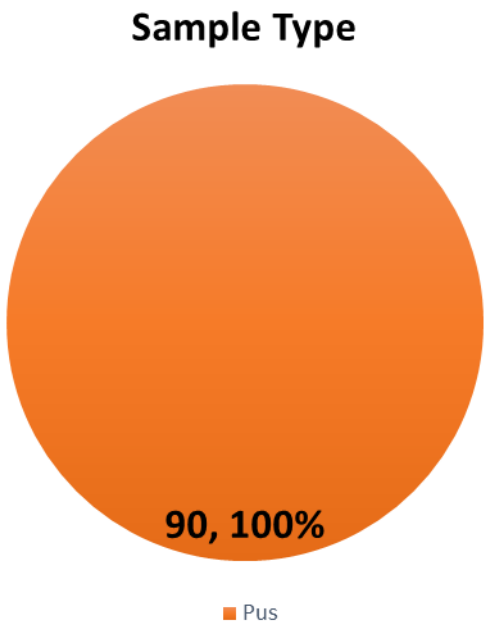

Figure 2: Source of samples in our study.

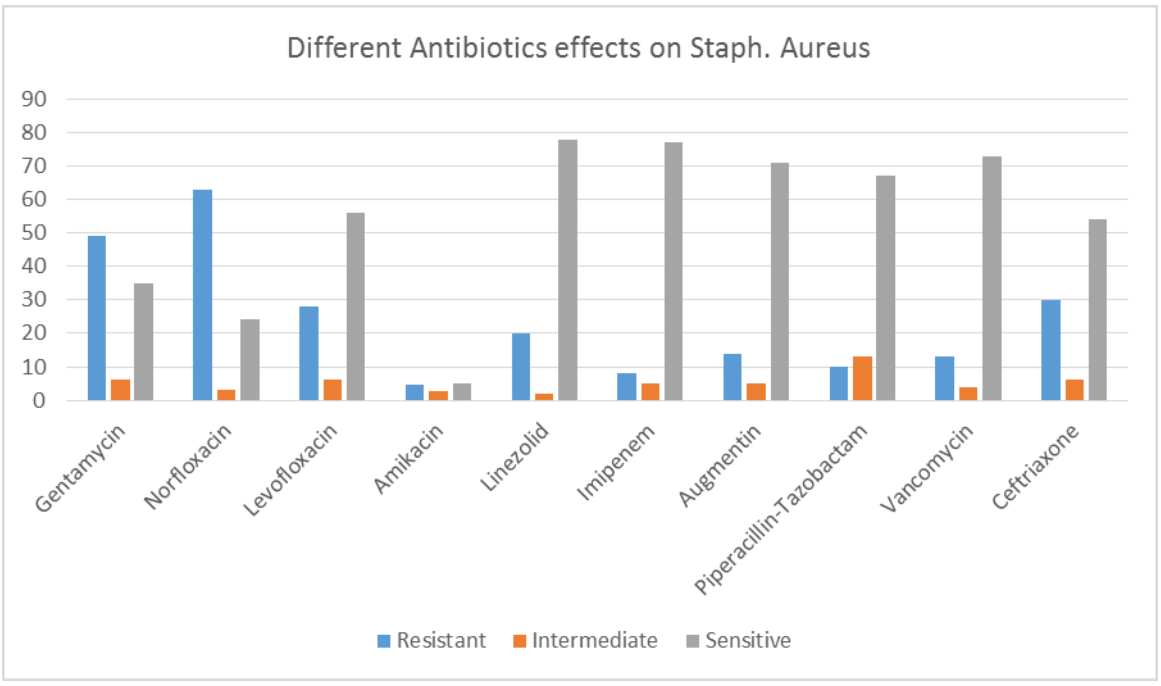

Figure 3: Frequency of cases that are (Resistant, Sensitive, and Intermediate) to different antibiotic therapies.

DISCUSSION

This study was done to determine the resistance of Staphylococcus Aureus to commonly used antibiotics. Our study included 90 pus samples with Staphylococcus Aureus infection with a predominance of females 50 cases (56%) and 40 males (46%). Figure 1.

A similar study (17) showed that Staphylococcus Aureus resistance to methicillin was (56.8%), which was the highest. while the lowest resistance was to linezolid (0%).

In our study, Staphylococcus Aureus was resistant to Cephalosporins (Ceftriaxone) with a statistical significant ($p<0.05$) in 33% of all cases. Staphylococcus Aureus resistance to Fluoroquinolones (norfloxacin) was 70%. Furthermore, 54% of Staphylococcus Aureus cases had resistance against Aminoglycosides (gentamycin). 20% of all cases had resistance to Linezolid. Figure 3.

Regarding sensitivity to different antibiotics, with a statistical significance ($p<0.05$), Imipenem had the highest sensitivity with 85%, Vancomycin with 81%, Linezolid with 78% and Piperacillin-tazobactam with 75%. Figure 3.

It should be noted that the resistance of the Staphylococcus Aureus in our study to different antibiotics was much higher than the resistance percentages of similar studies (17) and that shows the obvious misuse, overuse and lack of knowledge about their effects among general population.

Compliance with Ethical Standards

Funding: This study was not funded by any institution.

Conflict of Interest: The authors of this study have no conflict of interests regarding the publication of this article.

Ethical approval: The names and personal details of the participants were blinded to ensure privacy.

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