Short Communication

Microbial Isolates in Early Swabs of Patients With Lower Limb Open Fractures

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Abstract

Fracture of lower limb is one of the most common orthopedic problems in emergency department. These fractures and particularly the open fractures have complications that among them, infection is most important and dangerous because lead to defect in functional outcomes of limb. Based on above mentioned; in this study we isolate and identified types of microbial that cause infection in lower limb’s open fractures. In this cross sectional study, 32 patients with open lower limb fractures were enrolled. Open fracture’s specimens were collected by swab and sent to the laboratory for microbial culture immediately. Then patients were compared based on type of isolated microbial contaminant and results of antibiogram. The most frequent was Klebsiella (15.5%), Gram negative bacteria (15.5%), negative coagulase Staphylococcus (12.5%), Staphylococcus Aureus (6.5%).

Keywords: Fracture, Infection, Culture, Bacteria

Introduction

Given the importance of infection in open fractures, prevention and treatment is of outmost important. There are many different factors that involved in the infection of open fractures, the most known factors are: Lack of prophylactic antibiotics, wound growth’s resistance to antibiotics, the prolonged duration between injuries and antibiotic therapy, the extent of tissue damage.

In general, it can be assumed that the most common and most important early complication of open fracture wounds is infection; thus necessary measures to deal properly with these type of injuries should be considered promptly [1-4]. Therefore, in the current study we decided to isolate and identifying common contaminating organisms in the open fracture’s wounds through out of specimen’s culture, in order to selecting the most effective antibiotics for prevention and treatment of these infections.

Method: This was a cross sectional qualitative study conducted at Shahid Rajai hospital in the Tonkabon, between 86 to 87 periods. Patients with open fractures of the lower extremities whom visited the emergency department were included in the study. Bacterial cultures specimens were sent to laboratory. The patient’s demographic Information were collected through checklist including age, sex, and microbial culture results. Patients compared based on the contaminated isolates and antibiogram results. Data were analyzed using SPSS software twentieth edition. P <0.05 was considered statistically significant [5-7].

Results and Discussion

A total of 32 patients were participate in the study. There were 5 (15.5%) Klebsiella positive cases, 5 gram negative Bactria (15.5%), two cases of Staphylococcus aureus (6.5%), and 4 cases of coagulase-negative staphylococci (12.5%) in the studied sample [8-10]
These findings are inconsistent with the results of some previous study. In one study, common infecting bacteria were staphylococcus aureus; while in another study, the most common isolated bacteria was Escherichia coli, and coagulase-negative staphylococci in the other. The results of this study is consistent with the fascia and Moretti that isolated Gram-negative and coagulase negative Staphylococcus from open fractures of the lower limb in their studies [11-13].

Measures to prevent these type of infection are debridement, irrigation, and appropriate antibiotic therapy. The type of antibiotic used is determined based on the type of infecting organism which only possible through the injury’s specimens microbial cultures. We could select effective antibiotics through microbial culture and antibograms, in order to treat the injuries infection and prevent possible complications. In most studies, the most common infecting organism have been reported as gram-negative bacteria and staphylococcus aureus. It is noteworthy that the use of effective antibiotics of choice in addition to other cares such as debridement, etc. could lead to a more beneficial results [14, 15].

References
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