

Magnitude of Infection and Associated factor in Open Tibial Fractures Treated Operatively at Addis Ababa Burn Emergency and Trauma Center April, 2023

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Abstract : Back ground: An open tibial fracture is an injury where the fractured bone directly communicates with the outside environment. Due to the specific anatomical features of the tibia (limited soft tissue coverage), more than quarter of its fractures are classified as open, representing the most common open long-bone injuries. Open tibial fractures frequently cause significant bone comminution, periosteal stripping, soft tissue loss, contamination and are prone to bacterial entry with biofilm formation, which increases the risk of deep bone infection. Objective: The main objective of the study was to determine Prevalence of infection and its associated factors in surgically treated open tibial fracture in Addis Ababa Burn Emergency and Trauma (AaBET) center. Method: A facility based retrospective cross-sectional study was conducted among patient treated for open tibial fracture at AaBET center from September 2018 to September 2021. The data was collected from patient's chart using structured data collection form, and Data was entered and analyzed using SPSS version 26. Bivariable and multiple binary logistic regression were fitted. Multicollinearity was checked among candidate variables using variance inflation factor and tolerance, which were less than 5 and greater than 0.2, respectively. Model adequacy were tested using Hosmer-Lemeshow goodness of fitness test (P=0.711). AOR at 95% CI was reported, and P-value < 0.05 was considered statistically significant. Result: This study found that 33.9% of the study participants had an infection. Initial IV antibiotic time (AOR=2.924, 95% CI:1.160- 7.370) and time of wound closure from injury (AOR=3.524, 95% CI: 1.798-6.908), injury to admission time (AOR=2.895, 95% CI: 1.402 - 5.977). and definitive fixation method (AOR=0.244, 95% CI: 0.113 - 0.4508) were the factors found to have a statistically significant association with the occurrence of infection. Conclusion: The rate of infection in open tibial fractures indicates that there is a need to improve the management of open tibial fracture treated at AaBET center. Time from injury to admission, time from injury to first debridement, wound closure time, and initial Intra Venous antibiotic time from the injury are an important factor that can be readily amended to improve the infection rate. Whether wound closed before seven days or not were more important factor associated with occurrences of infection.

Keywords : infection, open tibia, fracture, magnitude

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