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Predictive factors for fracture-related infection in open tibial fractures in a Sub-Saharan African setting
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Abstract
Introduction: The management of open tibial fractures (OTF) is challenging in low and middle-income countries (LMICs) where appropriate human resources and infrastructure (including equipment, implants and surgical supplies) are not readily available and medical care is not readily accessible. OTF are not rarely associated with a subsequent fracture-related infection (FRI), which is one of the most devastating and difficult to cure complications in orthopaedic trauma care. The aim of this study was to determine the rate and the predictive factors of FRI in OTF in a limited-resource setting of sub-Saharan Africa. Methods: Patients with OTF who underwent surgery from July 2015 to December 2020 and followed-up for at least 12 months in a tertiary care teaching hospital in Yaoundé (Cameroon) were retrospectively investigated. Diagnosis of FRI was based on the confirmatory criteria of the International FRI Consensus definition. All patients with bone infections, occurring at any time point during follow-up, were included. Logistic regression was used to determine the predictive factors for FRI. Results: One hundred and five patients with OTF were studied. With a mean follow-up period of 29.5 ± 16.6 months, 33 patients (31.4%) presented with FRI. Gustilo-Anderson type of OTF, compliance with antibiotics, blood transfusion, time to first washing of the wounds and method of bone fixation were factors associated with the occurrence of FRI. In multivariable logistic regression, 6-hours delay to first washing of the wounds (OR=8.07, 95% CI: 1.43–45.31, p = 0.01), and compliance with antibiotics (OR=11.33, 95%CI: 1.11–115.6, p = 0.04) were the only independent predictors of FRI. Conclusion: The overall rate of FRI in open tibial fracture is still high in the sub-Saharan African context. For similar low-resources settings, this study supports the recommendations (1) to perform a very early washing-dressing-splinting of OTF on admission of the patient, (2) to administer antibiotics early, and (3) to perform surgery as soon as reasonably possible, once appropriate personnel, equipment, implants and surgical supplies are available. © 2023 Elsevier Ltd

Author Keywords
Fracture-related infections; Open tibial fractures; Predictive factors

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