

Predictors of Infection After Distal Femur Fracture: A Multicenter Study

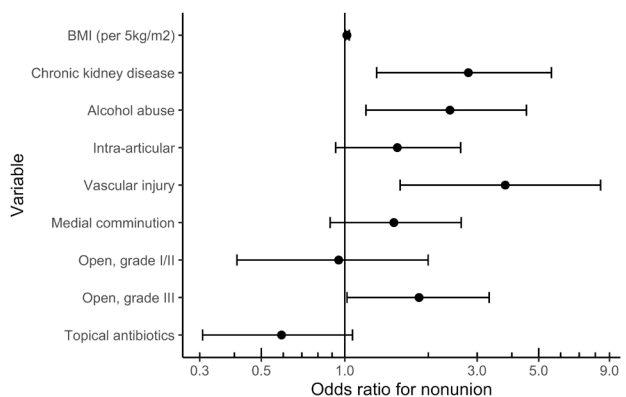
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Purpose: Our objective was to evaluate the association between patient, injury, and treatment characteristics and the outcome of deep infection in patients with distal femur fractures.

Methods: A multicenter retrospective review involving 10 centers was performed of distal femur fractures in patients at least 18 years of age who underwent operative fixation between January 2012 and December 2019. Pathologic fractures and patients with less than 3 months of follow-up and no outcome event were excluded. The study cohort was comprised of 1107 distal femur fractures. The outcome of interest was any infection requiring surgical treatment. Associations between potential predictors and infection were evaluated using logistic regression analysis.

Results: 7% (79 / 1107) of fractures were associated with subsequent deep infections. In the multivariate analysis (Figure 1), predictive factors included body mass index (BMI; odds ratio [OR]= 1.02 per 5 kg/m²; 95% confidence interval [CI]: 1.01-1.04; P = 0.02), chronic kidney disease (OR = 2.79; 95% CI: 1.30-5.56; P = 0.01), alcohol abuse (OR = 2.39; 95% CI: 1.19-4.51; P = 0.01), vascular injury (OR = 3.79; 95% CI: 1.58-8.35; P<0.01), and grade III open fracture (OR = 1.85; 95% CI: 1.02-3.31; P = 0.04). There was a nonsignificant trend toward topical antibiotics being a protective factor (OR = 0.59; 95% CI: 0.31-1.07; P = 0.10). The most frequently cultured organisms were methicillin-resistant Staphylococcus aureus (22%), methicillin-sensitive S. aureus (20%), and Enterobacter cloacae (12%).

Conclusion: 7% of distal femur fractures in this large multicenter cohort developed infections requiring surgical treatment. Higher BMI, open injuries, vascular injuries, chronic kidney disease, and alcohol abuse were risk factors for infection.



See the meeting website for complete listing of authors’ disclosure information. Schedule and presenters subject to change.