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[O27] RISK FACTORS FOR RECURRENCE OF CHRONIC POSTTRAUMATIC OSTEOMYELITIS

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Aim: The incidence of posttraumatic osteomyelitis (PTO) is increasing in spite of new surgical techniques and development of new antimicrobial therapies. It has been difficult to assess outcomes of PTO because of the numerous risk factors involving the patients, trauma characteristics, surgical conditions, diversity of etiologic agents and long period of follow-up required to determine the effects of any treatment. We aim to identify factors predisposing to develop recurrence of chronic PTO.

Method: Between August 2007 and August 2012, a single-center prospective cohort study was carried out among 193 patients with PTO following orthopedic surgery. Bone and soft tissues were collected for cultures and PTO was defined according to CDC/NHSN criteria. Patient, injury, surgery-associated variables and microbiological records were identified for potential risk factors associated to recurrence of PTO. Univariate and multivariable analyses using logistic regression were performed, and $p < 0.05$ was considered significant.

Results: We analyzed 192 patients with PTO, of which 38 (19.8%) had recurrence. One hundred and thirty-two (68.8%) patients were men and 25.9% were over 60 years of age. High-energy trauma due to road traffic accidents occurred in 57% of our population and 29.7% suffering fall from height. Open fractures were diagnosed in 37.8% of patients and 39.9% underwent more than one surgical debridement. Factors associated to recurrence in the multivariable analysis were age 61-80 years and above 80 years [hazard ratio (HR) = 6.086, 95% confidence interval (CI) = 2.459;15.061, $p = < 0.001$] and [HR = 9.975 (95% CI = 3.591;27.714), $p = < 0.001$], need for intraoperative blood transfusion [HR = 2.239 (95% CI = 1.138;4.406), $p = 0.020$], and bone and soft tissue positive culture for *Pseudomonas aeruginosa* [HR = 2.700 (95% CI = 1.370;5.319), $p = 0.004$]. When *P. aeruginosa* was the recovered pathogen, disease-free survival was lower than of *Staphylococcus aureus* and *Enterococcus* spp, $p = 0.002$. In terms of age, disease-free survival was of 38 months for patients 61 to 80 years and of 17 months for more than 80 years; $p < 0.001$.

Conclusions: Risk factors associated with recurrence of the PTO are difficult to be measured e the present study revealed that elderly patients, the need for intraoperative blood transfusion and *P. aeruginosa* culture were independently associated with recurrence of PTO.

Reference:

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Senneville E et al. Clin Infect Dis 2011;53(4):334–340