

**What happens to diabetic patients who are admitted to hospital with foot infection and what determines their outcome?**

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The aim was to determine the outcome of a cohort of diabetic patients hospitalised because of foot infection and assess if clinical and biochemical markers and co-morbidities predicted lower extremity amputations (LEA). Forty-two patients were admitted during the 3 month study period (mean age  $64.7 \pm 12.6$  years, 66.7% male, 61.9% white): 37 had type 2 diabetes, 22 patients were ischaemic. Co-morbidities were assessed according to the Charlson index. Mean score was  $6.14 \pm 2.6$ : 9 patients had had myocardial infarction, 8 had coronary artery disease, 12 had renal impairment, 5 had liver impairment and 3 had malignancy. Clinical and biochemical findings on admission were (mean  $\pm$  SD or median (IQR)): temperature  $37.1 \pm 0.8$  °C, C- reactive protein was 81 (30 - 140) mg/L. neutrophils  $7.8 \pm 3.47 \times 10^9$ /L and capillary blood glucose (CBG) 9.5 (6.2 - 12.9) mmol/L. 25 patients underwent surgery [10 LEA (1 major, 9 minor)], 15 had operative debridement and 12% had >1 episodes of surgery. 7 patients had angioplasty and 2 had arterial by-pass. 6 patients were admitted to the Intensive Care Unit (ITU) for septicaemia (4) pneumonia (1) hyperkalaemia (1) and there was 1 death. On univariate analysis, MRSA colonisation was significantly associated with LEA compared to no LEA (60% vs. 25%,  $p=0.04$ ). Log CBG (transformed because a skewed variable) was higher in patients that had LEA (2.5 vs. 2.1,  $p=0.04$ ) compared to those that did not. Charlson score was not significantly different between LEA group,  $6.70 \pm 2.8$ , compared with non-LEA group,  $5.97 \pm 2.6$ ,  $P=0.45$ . On multiple logistic regression, analysis of risk factors (adjusted OR, [95% confidence interval], p value) revealed male gender (0.025, [0.001 - 0.74],  $p=0.03$ ) as the only covariate independently associated with LEA. Stepwise regression indicated that log CBG remained significantly different between the LEA and non-LEA group even after adjustment for demographic ( $p=0.05$ ) but became insignificant after clinical and biochemical covariates were introduced to the model ( $p=0.06$ ). Patients were followed up at 4 months after the end of the study: all-cause readmission rate was 36% (14% due to foot related problems) including 3 admissions to ITU, all-cause ED attendance was 41% and all-cause mortality was 10%. Diabetic patients with foot infections demand rigorous surgical and medical intervention. Male patients have significantly higher rates of LEA for diabetic foot infections than females. Patients with hyperglycaemia on admission represent a group at increased risk of LEA.