

P12

Utility of Bacterial Cultures in the Management of Foot Ulcers in Diabetic Patients, Dar es Salaam, Tanzania. Z. G. Abbas^{1,2}, J. Lutale¹, and L. K. Archibald³. ¹Muhimbili University College of Health Sciences, Dar es Salaam, Tanzania, ²Abbas Medical Centre, Dar es Salaam, Tanzania, and ³University of Florida, Gainesville, Florida, USA

Introduction: Foot ulcers cause substantial morbidity and mortality among patients with diabetes mellitus (DM) in Africa. In developed countries, choice of antimicrobials for treating foot sepsis is often guided by deep tissue cultures. Moreover, previous work in Tanzania has shown that empiric antimicrobials are effective in achieving complete ulcer healing. Thus, we conducted this study to determine the utility of culturing ulcers as a guide to initiating antimicrobial therapy versus initiating blind empirical therapy without cultures.

Methods: This was a retrospective cohort study of DM patients who attended Muhimbili National Hospital (MNH) diabetes clinic during Jan 1997-Jan 2006 (study period). A case was defined as any adult patient, who presented with a foot ulcer during the study period and was prescribed antimicrobial therapy either empirically or as dictated by the results of deep tissue culture and susceptibility testing. Patients were enrolled after informed consent. Relative risk and 95% confidence intervals (CI) were calculated. Multivariate analysis using logistic regression was carried out; adjusted odds ratio (AOR) was calculated.

Results: Of 512 patients initially enrolled in this study, comprehensive outcome data were available for 374 (73%); the remainder was either lost to long-term follow-up or died. Sixty (16%) of these 374 patients had foot cultures performed. Pathogens were predominantly gram-negative and included *E. coli* (27%), *Klebsiella* spp. (25%), and *Pseudomonas* spp. (19%). Complete healing of ulcers occurred in 224 (60%) patients and was equally likely when antimicrobials were prescribed empirically versus when chosen based on the report of culture and antimicrobial susceptibility (184/314 vs. 40/60, p=0.24). On logistic regression analysis, factors independently associated with ulcer healing were avoidance alcohol during antimicrobial therapy (AOR: 6.0, CI: 2.1-18.3), and adjunctive major amputation (AOR: 27.1, CI: 11.2-82), or minor amputation (AOR: 17.1, CI: 8.2-40.6).

Conclusion: Empirical therapy with broad-spectrum antimicrobials resulted in rates of ulcer healing that were not significantly different from healing rates achieved through antimicrobial therapy based on culture results. Given the limited microbiology services and resources in Tanzania, empirical broad spectrum antimicrobial therapy with adjunctive surgery remains the core of management of the infected diabetic foot