

**[O06] ADMISSION TIME DEEP SWAB SPECIMENS COMPARED TO BONE SAMPLING TO GUIDE TARGETED ANTIBIOTIC THERAPY IN HOSPITALISED PATIENTS WITH ACUTE SEVERE DIABETIC FOOT AND OSTEOMYELITIS**

Ana Manas<sup>1</sup>, Surabhi Taori<sup>2</sup>, Michael Edmonds<sup>3</sup>, Prash Vas<sup>3</sup>

<sup>1</sup>*Kings College Hospital, London, United Kingdom*

<sup>2</sup>*Kings College Hospital, Microbiology, London, United Kingdom*

<sup>3</sup>*Diabetic Foot Clinic, King's College Hospital, London, United Kingdom*

**Aim:** A significant challenge in guiding antibiotic therapy among hospitalized individuals with severe diabetic foot infection is the lack of a gold standard culturing technique. Whilst many studies have suggested that cultures from wound swabs are unreliable; their findings have been limited by poor swabbing technique, use of historical swab results and inclusion of non-selective outpatient and hospitalized patient cohorts with widely variant ulcer stages. Our study aimed to evaluate if deep swab cultures taken at time-point of a hospital admission with a severe diabetic foot infection could reliably identify pathogens compared to cultured bone specimens.

**Method:** Retrospective review of consecutive hospital admissions with a severely infected diabetic foot, Texas Grade 3 ulceration and clinico-radiological evidence of osteomyelitis over a 9 month period. A deep swab (DWS) through the actively infected discharging ulcer down to the bone, was taken at time of admission. Bone sampling was undertaken during surgery (SBS). The number of organisms isolated per individual per sampling technique was then determined and data is represented as such.

**Results:** A total of 59 subjects ( average 63±9 years, 75% male, 85% Type 2 diabetes, HbA1C 8.9%) met the inclusion criteria. The number of organisms isolated by DWS was significantly lower than with SBS (0.9±0.7 vs 1.5±1.0 individual, p=0.02). With the DWS technique, 42/59 (73%) of individuals had 1 or more positive growth, whilst with SBS the proportion was higher, 50/59 (85%). Importantly, all but one individual with no growth on DWS had a positive culture on SBS. Furthermore, there was poor concordance in growth between the techniques, with only 15 /59 (25%) growing identical organisms ( $\kappa=0.3$ ). There was a trend for individuals with negative SBS 09/59 (15%) to wait longer to have their index infection clearance surgery (average 5.8 days vs 4.5 days amongst those who had positive bone growth).

**Conclusion:** The deep swab technique had poor reliability in guiding initial or subsequent targeted antibiotic therapy in the acutely infected osteomyelitic diabetic foot requiring hospitalisation. We believe, early bone sampling should remain the mainstay for guiding antibiotic therapy. Efforts should be focused on early surgical infection clearance and bone pathogen isolation. Delays to surgery may increase the possibility of no growth in bone specimens. When surgical debridement is contraindicated or access to theatre is difficult, deep swab cultures may only reliably inform in a select few and positive growth results need to be viewed with caution.