



Diabetic Foot Study Group of the EASD

15th Scientific Meeting

28 - 30 September 2018
Berlin · Germany

Programme and Abstracts



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[P057] EVALUATION: LOCAL DELIVERY OF ANTIBIOTICS IN ELECTIVE SURGERY TO CURE CHRONIC DIABETIC FOOT OSTEOMYELITIS AND ITS VALUE TO ANTIBIOTIC STEWARDSHIP

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Aim: Diabetic foot infections (DFIs) are common, burdening and contributing to the growing resistance to antibiotics with demand for excessive use, (Lipsky, 2016). Chronic osteomyelitis is a further complication and significant challenge. Failure to respond to initial conservative measures often requires a radical surgical approach. Locally a cohort of diabetic patients diagnosed with chronic osteomyelitis were identified as highest risk of amputation, all failed to heal despite repeated antibiotics courses, (average 29 weeks) or experienced a relapse.

Method: Clinical care was in partnership with 2 orthopaedic surgeons with a special interest in diabetic foot disease who performed the delivery of highly purified synthetic calcium sulphate (HPSCS) beads impregnated with antibiotics (Gentamicin and Vancomycin main choice), in conjunction with surgical debridement. Sparse data exists regarding the treatment of DFIs. However, some authors have reported good results with surgical debridement with the application of beads impregnated with gentamicin and vancomycin (Markakis, 2017). Selection of these 2 potent antibiotics were based on in vitro sensitivities of isolates obtained from DFI's, (Jogia et al 2015), the technique of delivery directly into the bone has been shown to be safe and effective without any of the antibiotic dreaded complications (e.g. AKI).

Results/Discussion: Two patient's deaths were excluded as BKA's were not options instead of HSPCS beads due to greater surgical risk and both declined BKA. Both died before discharge, one from post-operative complications and one from failure of infection control. However, good outcomes were achieved for the majority of the patients, including neuropathic, vascular compromised patients, mid and hind foot and previous relapses from surgical debridement without HPSCS. Post operatively in month one 69% changed to a "healing trajectory" with 23% healed. At 12 months 86 % remained healed, one patient underwent a BKA. Many patients, (77%), still required additional antibiotics post operatively, however at a significant reduction, (average 7 weeks). The team considered the two deaths and the BKA above to have been too late in selection to have changed these poor outcomes.

Conclusion: The modern world and the complex diabetic foot patients alike are further challenged, with the matter of the relentless rise in antibiotic resistance in all classes, (PHE, 2012/15). To safe guard this precious resource this study has raised that local delivery of antibiotics perhaps plays a role to reduce the burden on antibiotics and contribute to a favorable outcome for chronic osteomyelitis though acknowledging RCT'S are required to demonstrate this.