

12<sup>th</sup> International Conference on  
**OSTEOPOROSIS, ARTHRITIS AND MUSCULOSKELETAL DISORDERS**  
March 13-14, 2019, London, UK

**Dose adjustment of antibiotic loaded calcium sulphate in patients with renal dysfunction**

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**Introduction:** The use of antibiotic loaded biodegradable calcium sulphate (also known as Stimulan) is an effective treatment option in patients suffering from osteomyelitis or soft tissue infection. The small size of Stimulan beads gives it a large surface area to volume ratio, which is considerably higher compared to traditional antibiotic loaded cement. This allows it to release a high concentration of antibiotics locally; which in theory can lead to high systemic levels of antibiotics. However, there is a lack of sufficient data regarding the systemic absorption of antibiotic loaded Stimulan especially in patients with renal dysfunction.

**Methods:** 15 patients underwent surgical debridement and lavage followed by the insertion of gentamicin and vancomycin loaded Stimulan for the treatment of osteomyelitis or soft tissue infection. In some patients suffering with renal dysfunction, the antibiotic doses were halved. Antibiotic levels were then checked daily for 3 days following the procedure.

**Results:** Patients with no renal dysfunction: Systemic levels of antibiotics were below trough levels at all times. Patients with renal dysfunction receiving full dose of antibiotics: Systemic levels of gentamicin and vancomycin were in therapeutic range post-op and remained high until dialysis. Patients with renal dysfunction receiving half dose of antibiotics: Vancomycin levels were below trough level, but gentamicin levels were above.

**Conclusion:** Patients with normal renal function treated with antibiotic loaded Stimulan do not require dose adjustment or antibiotic assay levels. However, in patients with renal dysfunction, antibiotic doses should be adjusted, regular assays should be undertaken, and post-operative dialysis should be arranged.

**Biography**

My name is Louai Abdeh and I am a Trauma & Orthopedics Core Surgical Trainee at the Manchester Royal Infirmary. As a medical student and junior doctor, I have taken an active role in many clinical governance and research projects, and I have presented at a number of conferences including the ASiT International Conference 2018, Barts and London National Undergraduate Surgical Conference and Warwick Undergraduate Regional Medical Conference. I have also completed a Master of Research in Tissue Engineering for Regenerative Medicine, and I received a distinction grade for my dissertation "The Role of Macrophages and Mast Cells in Fibroblast to Myofibroblast Differentiation- An insight into the Relationship between Inflammatory Cells and Fibrosis".

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