

## **HYPERCALCAEMIA IN THE MANAGEMENT OF BONE AND JOINT INFECTION: A COMPARISON OF TWO ANTIBIOTIC DELIVERY SYSTEMS**

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### **Aim**

Antibiotic-eluting calcium compounds can be used to deliver antibiotics in the management of prosthetic joint infection (PJI). Described complications include wound drainage, heterotopic ossification (HO) as well as hypercalcaemia which is potentially life threatening.

The aim of this study is to assess the incidence of hypercalcaemia and other complications between two calcium based antibiotic delivery systems.

### **Method**

A retrospective study was performed. Thirty-two patients treated with Stimulan or Cerament calcium based antibiotic delivery system between August 2014 to January 2017 were included.

Seven patients received Cerament, 21 cases received Stimulan and one patient received both.

The volume used as well as pre- and post-operative serum calcium were recorded as well as any wound related complications and radiologic changes suggestive of heterotopic ossification. The postoperative serum adjusted Calcium were taken weekly during the initial post-operative period.

Patients with overactive parathyroid disease and pre-existing renal disease were excluded.

### **Results**

Stimulan group (n=22, Mean volume 39.2ml)

Mean pre-operative serum calcium was 2.48mmol/l. At 1- and 2-weeks post-surgery mean levels were 2.51 and 2.47mmol/l (patients receiving <40ml), and 2.47 and 2.50mmol/l (patients receiving >40ml – 9 cases) respectively.

There was no significant difference between pre/post-operative levels at 1 (p=0.97) or 2 weeks (p=0.91) and no difference between those treated with <40ml or >40ml of Stimulan at 1 or 2 weeks (p=0.91)

Cerament group (n=8, Mean volume 9.4ml)

Mean pre-operative serum calcium was 2.42mmol/l. Mean post-operative levels at 1- and 2-weeks post-surgery were 2.44mmol/l (p=0.92) and 2.37mmol/l (p=0.61) respectively.

One patient had prolonged wound discharge and required re operation. No HO was encountered.

### **Conclusions**

Our results suggest that hypercalcaemia and other complications are uncommon with the use calcium based antibiotic delivery systems and that calcium based antibiotic delivery systems are safe in the treatment of PJI.