

# Effects Of Gentamicin-Impregnated Collagen Sponge Versus Gentamicin-Impregnated Polymethylmethacrylate (PMMA) Beads In Patients With Osteomyelitis

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## INTRODUCTION:

Usage of local antibiotic as adjunct to surgical debridement and systemic antibiotic therapy has been proven to be useful as a treatment in osteomyelitis. Although antibiotic-impregnated polymethyl methacrylate (PMMA) beads are still regarded as gold standard for local antibiotic delivery, new antibiotic-impregnated collagen sponge however has multiple advantages over it. Aim of this study is to compare the effects between gentamicin-impregnated collagen sponge and gentamicin impregnated PMMA beads in patients with osteomyelitis.

## METHODS:

A total of 60 patients who were diagnosed with osteomyelitis who underwent their first surgical debridement with application of either gentamicin-impregnated collagen sponge (n=28) or gentamicin-impregnated PMMA beads (n=32) were reviewed retrospectively. Data were retrieved from hospital notes and operating theatre registry. The data taken was the numbers of debridement, trend of blood parameters (C-reactive protein (CRP) and total white cell count (TWC)), duration of hospitalization and total duration of systemic antibiotic therapy.

## RESULTS:

From the 60 patients diagnosed with osteomyelitis, 52 were males and 8 were females. The gentamicin-impregnated collagen sponge group has significant lower re-operative rate ( $p < 0.05$ ) while also has significant reduction of TWC in the period of 6 weeks ( $p < 0.05$ ). The two groups showed no statistical difference in regards of duration of hospital admission, duration of systemic antibiotic therapy completed, the reduction of CRP at 6 weeks post-debridement, and the duration needed for TWC and CRP to normalize and stabilize.

## DISCUSSIONS:

This study reiterates the efficacy of usage of gentamicin-impregnated sponge as adjunct of treatment in osteomyelitis and reinforces previous studies' findings that the usage of gentamicin-impregnated collagen sponge will result in lower re-operative rate as compared to conventional gentamicin-impregnated PMMA beads.

## CONCLUSION:

The usage of gentamicin-impregnated collagen sponge may provide a more feasible choice for local antibiotic delivery in the treatment of osteomyelitis.

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