

## GENERAL ORTHOPAEDICS

FULL ACCESS 

# INTRAOPERATIVE USE OF DEFENSIVE ANTIBACTERIAL COATING (DAC) FOR COMPLEX SURGERIES IN COMPLEX HOSTS

The Welsh Orthopaedic Society (WOS) 2024 Meeting, Chester, England, 23–24 May 2024.

R. H. R. Roberts   N. Shams   S. Ingram-Walpole   D. Barlow   A. Syed   Y. Joshi   I. Malek

[Cite this](#)

## Abstract

Periprosthetic joint infections (PJIs) and osteosynthesis-associated infections (OSIs) present significant challenges in trauma and orthopaedic surgery, substantially impacting patient morbidity, mortality, and economic burden. This concern is heightened in patients with pre-existing comorbidities, such as diabetes mellitus, which are not always modifiable at presentation. A novel intraoperative strategy to prevent these infections is the use of Defensive Antibacterial Coating (DAC), a bio-absorbable antibiotic-containing hydrogel applied to implant surfaces at implantation, acting as a physical barrier to prevent infection.

The purpose of this study is to assess the use of a commercially available hydrogel (DAC), highlighting its characteristics that make it suitable for managing PJIs and OSIs in orthopaedics and traumatology. Twenty-five patients who underwent complex orthopaedic procedures with intraoperative application of DAC between March 2022 and April 2023 at a single hospital site were included. Post-operative assessment encompassed clinical, laboratory, and radiographic examinations.

In this study, 25 patients were included, with a mean age of  $70 \pm 14.77$  years and an average ASA grade of  $2.46 \pm 0.78$ . The cohort presented an average Charleston Comorbidity score of  $5.45 \pm 2.24$ . The procedures included 8 periprosthetic fractures, 8 foot and ankle surgeries, 5 upper limb surgeries, and 4 elective hip and knee surgeries. Follow-up assessments at 6 weeks and 6 months revealed no evidence of PJI or OSI in any patients, nor were any treatments for PJI or OSI required during the interim period.

DAC demonstrated efficacy in preventing infections in high-risk patients undergoing complex orthopaedic procedures. Our findings warrant further investigation into the use of DAC in complex hosts with randomized control trials.

Email: [Richard.roberts6@doctor.nhs.uk](mailto:Richard.roberts6@doctor.nhs.uk)