

especially at 2 years followup emphasising the long time to recovery.

Table 1 - Results

| | EQ-5D VAS | EQ-5D INDEX | PSAS Function | PSAS Expectation | VAS Back Pain | VAS Leg Pain |
|----------|-----------|-------------|---------------|------------------|---------------|--------------|
| Baseline | 67.8 | 0.49 | 5.0 | 7.5 | 5.2 | 2.9 |
| 6 weeks | 60.2 | 0.46 | 4.4 | 6.9 | 4.6 | 3.5 |
| 6 months | 62.2 | 0.54 | 5.5 | 7.4 | 3.7 | 3.2 |
| 1 year | 69 | 0.55 | 6.7 | 7.7 | 3.2 | 2.4 |
| 2 years | 89 | 0.84 | 8.0 | 8.7 | 1.8 | 2.1 |

Abbreviations-
EQ-5D (EuroQol)
VAS (Visual Analogue Scale)
PSAS (Patient Specific Activity Scale)

EQ-5D VAS (0-100) – Higher score indicates better quality of life
EQ-5D INDEX (0-1) - Higher Index indicates better overall quality of life
PSAS Function (0-10) – Higher score indicates better function
PSAS Expectation (0-10) - Higher score indicates higher functional expectation
VAS (0-10) – Higher score indicated higher degree of pain

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07. Tumour (whole spine)
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THE USE OF NEO - ADJUVANT DENOSUMAB IN TREATMENT OF GIANT CELL TUMOURS OF THE SPINE

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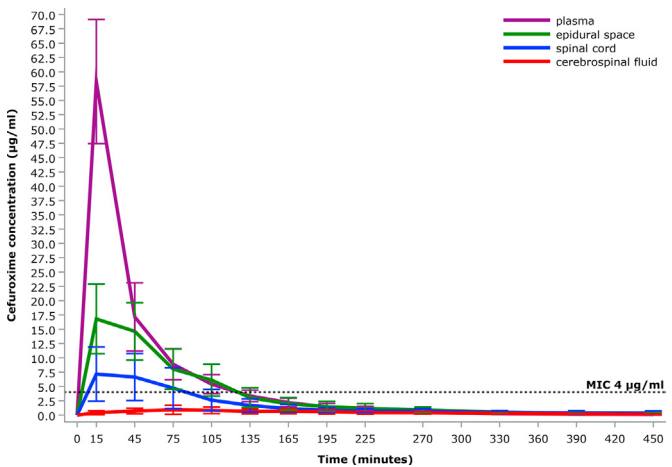
Giant Cell Tumours (GCT) of the spine may be large at presentation and cause severe pain. The current recommended treatment is en bloc excision but is associated with significant morbidity and mortality. Denosumab is a monoclonal RANKL inhibitor that may be used neo – adjuvantly. The goal of this study was to assess the effect of Denosumab on tumour characteristics and symptom relief. We performed a retrospective review of 10 patients treated with denosumab as neo adjuvant and stand - alone treatment. Tumour measurements were taken before and after treatment, PET SUV capitation was measured, and patients were interviewed for subjective pain responses. Clinical response was determined by volumetric reduction in tumour size, PET SUV capitation, the Boriani Classification and improvement in pain symptoms. Following treatment 70% of patients were pain free, 50% noting improvement within 48 hours. Mean relative volumetric reduction in tumour volume was 40%. All pathology specimens confirmed elimination of giant cells. Improvement in Bilsky grading occurred in 4/10 cases and progression was halted in the remainder. Median baseline SUVmax was 14.7, median SUVmax post treatment was 6.2. Seventy – eight percent of patients demonstrated intra - lesional bone formation following treatment. This study demonstrates that neo-adjuvant denosumab facilitates en bloc resection of GCT of the spine, reduces the likelihood of intra - operative morbidity and improves pre – operative pain. We recommend routine use when W-B-B – based criteria are fulfilled for en – bloc excision. Assuming that margins are disease – free following surgery, we advocate cessation of treatment post – operatively. Key words: Giant cell tumour, denosumab, neo – adjuvant, en bloc excision, pain
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08. Infection (whole spine)
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EVALUATION OF SINGLE-DOSE CEFUROXIME CONCENTRATIONS IN THE SPINAL CORD, CEREBROSPINAL FLUID, AND EPIDURAL SPACE IN RELATION TO LUMBAR SPINE SURGERY: AN EXPERIMENTAL PORCINE STUDY

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Background: Spine surgery poses a risk of incidental durotomy, exposing the subdural compartments to bacterial inoculation. In such cases, optimal perioperative antibiotic prophylaxis is crucial to prevent postoperative subdural infection, which require sufficient target tissue time above the clinical breakpoint minimal inhibitory concentration (T>MIC) of relevant bacteria. Cefuroxime is commonly employed as perioperative prophylaxis in lumbar spine surgery, but no studies have investigated cefuroxime concentrations in the spinal subdural compartments using microdialysis. Objective: To assess cefuroxime concentrations and T>MIC of 4 µg/ml for Staphylococcus aureus in subdural (spinal cord and cerebrospinal fluid) and extradural (epidural space) compartments of the lumbar spine using microdialysis.
Materials and Methods: Eight female pigs were anaesthetised and laminectomised at L3-4. Microdialysis catheters were placed for sampling in the spinal cord, cerebrospinal fluid, and epidural space. A single-dose of 1500 mg cefuroxime was administered intravenously over 10 minutes. Microdialysates and plasma were obtained continuously during 8 hours, and cefuroxime concentrations were determined by ultra-high performance liquid chromatography.
Results: Mean T>MIC (4 µg/ml) with 95% confidence interval (CI) was 58 (15-102) minutes in the spinal cord, 0 (0-0) minutes in cerebrospinal fluid, 115 (85-145) minutes in the epidural space, and 123 (106-141) minutes in plasma. Tissue penetration with 95% CI was 32% (13-51%) in the spinal cord, 7% (3-15%) in cerebrospinal fluid, and 63% (43-83%) in the epidural space.
Conclusion: T>MIC (4 µg/ml) and tissue penetration for cefuroxime was lower in subdural compartments (spinal cord and cerebrospinal fluid) compared to the epidural space and plasma, suggesting a significant effect of the blood-brain barrier. In terms of T>MIC, a single-dose of 1500 mg cefuroxime seems inadequate to prevent subdural infections related to spine surgery for bacteria presenting with a MIC-target of 4 µg/ml or above.



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