

The use of Denosumab in Giant Cell Tumour (GCT) of bone: A review of 44 patients

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Abstract

Background: Denosumab is a fully human monoclonal antibody to RANK ligand (RANKL) which has shown good response in patients with inoperable Giant cell tumour of bone (GCT) in a phase 2 clinical trial. Denosumab may also be used to downstage tumours to allow for less morbid surgery. However, important questions remain such as the optimal dosing schedule for Denosumab especially for inoperable tumours as well as the safety of the drug for long term use.

Questions: How is Denosumab used in a tertiary referral centre for bone and soft tissue tumours? What is the complication rate with long term use? What is the local recurrence rate in patients treated with Denosumab and surgery?

Methods: We present a case series of patients with histologically diagnosed GCT treated with Denosumab in a single institution. Complications and recurrence rate were analysed from the onset of treatment.

Results: 44 patients were treated since 2010 with a mean follow-up of 107 weeks. Denosumab was given as long term treatment in 20 patients for unresectable diseases or disease requiring morbid surgery and in 24 as neo-adjuvant treatment prior to definitive surgery. All patients had clinical and radiologic improvement on treatment. Serious complications occurred in 30% of patients on long term treatment necessitating discontinuation of Denosumab. Local recurrence rate was 33% in patients who subsequently underwent surgery with curative intent.

Conclusions: Although Denosumab has shown good response in treating GCT, there are concerns with serious complications (ONJ, stress fractures) especially with longer term use. Further studies are required to determine the role of Denosumab for conventional extremity GCT.