

Control Number: 78

Abstract Category: Clinical Science in Cardio-Oncology

Title: Corticosteroid Refractory Immune Checkpoint Inhibitor Myocarditis Treated with Infliximab

ABSTRACT BODY

Background

The use of immune checkpoint inhibitors (ICI) in cancer treatment has significantly increased in recent years. Cardiovascular immune-related adverse events, particularly myocarditis, has been increasingly recognized. Guidelines recommend treatment with high dose steroids; however in refractory cases there is no consensus regarding appropriate escalation of immunosuppressive treatment. We present a case series of steroid refractory ICI myocarditis treated with infliximab.

Methods

This is a retrospective analysis of patients with ICI myocarditis at a single large academic center. Steroid-refractory cases treated with infliximab were identified and patient characteristics and outcomes were analyzed.

Results

There were 11 patients who developed ICI myocarditis; 4 patients were refractory to high dose corticosteroids and required infliximab. Patient mean age was 61.75 +/- 4.6 years; 50% were female; and 2 patients had metastatic melanoma, 1 patient had metastatic renal cell carcinoma, and 1 had metastatic ovarian adenocarcinoma. Three patients were treated with nivolumab and 1 with pembrolizumab with an average of 3.75 +/- 3.59 doses received prior to diagnosis of myocarditis. All 4 patients presented in decompensated heart failure with ventricular tachycardia, 2 patients in cardiogenic shock requiring inotropic support, and 2 in complete heart block. Each patient received a single dose of 5 mg/kg of infliximab. All patients survived initial hospitalization; however, 2 of the 4 patients died during a mean follow-up period of 198 +/- 147 days. Both deaths were caused by septic shock 2 and 3 months after initial diagnosis and patients were on a steroid taper at the time.

Conclusion

Infliximab has been successful in treating other ICI related adverse events such as colitis and pneumonitis but has been used sparingly in myocarditis due to its contraindication in heart failure. Our case series demonstrates cardiac safety in administration of infliximab in this patient population; benefits of using infliximab as rescue therapy in steroid refractory ICI myocarditis may outweigh the risks. Additional studies are needed to evaluate efficacy and safety of infliximab in this population.

Clinical Implications

Steroid refractory ICI myocarditis has a high mortality and in these patients we have demonstrated that infliximab can be a safe escalation immunosuppressive agent.