

PAIN MITIGATION AND MANAGEMENT STRATEGIES FOR ANTI-GD2 INFUSIONS

Daniel Morgenstern¹, Karsten Nysom², Andrea Gomez Morad³, Margarida Simão Rafael¹, Judith Zier⁴, Araz Marachelian⁵, and Tanya Watt⁶

¹The Hospital for Sick Children

²Rigshospitalet

³Boston Children's Hospital

⁴Children's Respiratory and Critical Care Specialists PA

⁵Children's Hospital Los Angeles Department of Hematology and Oncology

⁶The University of Texas Southwestern Medical Center

October 20, 2022

Abstract

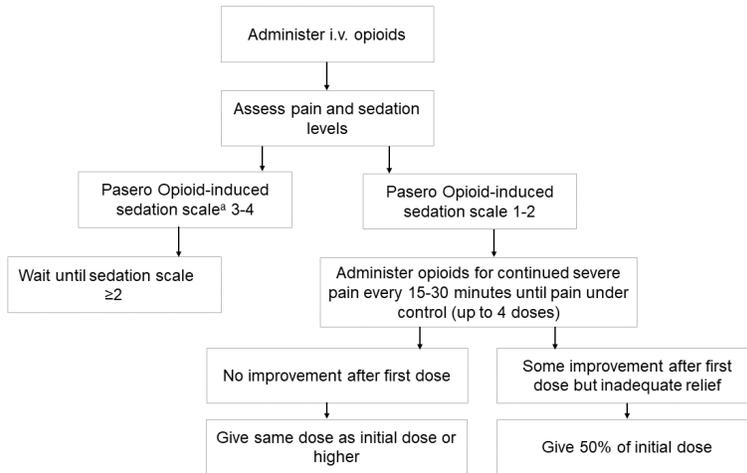
Monoclonal antibodies (mAbs) targeting disialoganglioside 2 (GD2) are an important treatment advance for high-risk neuroblastoma, including in patients with refractory or relapsed disease. Dinutuximab and dinutuximab beta are administered for [?]8 hours (and up to 10 days for dinutuximab beta), whereas naxitamab is administered over 0.5 to 2 hours as tolerated. As acute pain is a class effect of anti-GD2 mAbs, effective pain management is crucial to successful treatment. Here, we provide an overview of current pain-management strategies for anti-GD2 mAb infusions, including discussion of opioid analgesics, ketamine, gabapentin, and other similar agents, and non-pharmacologic approaches. Potential future pain management options are also discussed, in addition to the use of sedatives to reduce the anxiety that may be associated with infusion-related pain. Specific guidance for pain management during naxitamab infusions is provided, as these infusions are administered over 0.5 to 2 hours and may not need overnight hospitalization based on the physician's assessment, and require rapid-onset analgesia options suitable for potential outpatient administration.

Hosted file

Pain Management_main text_Oct 18_Final.docx available at <https://authorea.com/users/516210/articles/591210-pain-mitigation-and-management-strategies-for-anti-gd2-infusions>

Infusion conditions	Anti-GD2	Pre-infusion							Infusion*					
		Day*	-4	-3	-2	-1	0	2 hours pre-infusion	1 hour pre-infusion	30 minutes pre-infusion	1			
		Timing	-	-	-	-	-				Infusion	1 hour post-infusion	2 hours post-infusion	4 hours post-infusion
Inpatient > 8 hours infusion duration	Dinutuximab	Gabapentin			10 mg/kg q.d. p.o.	10 mg b.i.d.					10 mg T.i.d. p.o.			
		Morphine sulfate								0.05 mg/kg i.v.	20-50 mcg/kg/hr PRN i.v.	0.02-0.05 mg/kg PRN i.v.		
	Dinutuximab beta	Gabapentin			10 mg/kg q.d. p.o.	10 mg b.i.d.					10 mg T.i.d. p.o.			
		Morphine sulfate							0.02-0.05 mg/kg bolus infusion		0.03 mg/kg/hr i.v.	Continuous infusion in response to the patient's pain/perception, wean over 5 days by decreasing its dosing rate (e.g. to 0.02-0.05 mg/kg/hr, 0.02 mg/kg/hr, 0.01 mg/kg/hr, 0.005 mg/kg/hr)		
Outpatient < 2 hours infusion duration	Naxitamab	Gabapentin	5-10 mg/kg q.d. p.o.	5-10 mg/kg b.i.d. p.o.						5-10 mg T.i.d. p.o.				
		Opioids (morphine sulfate, hydromorphone, or oxycodone)						45-60 minutes pre-infusion: 0.1-0.2 mg/kg p.o., oxycodone (maximum dose 5 mg)	15 minutes before infusion: 0.025-0.1 mg/kg i.v., morphine sulfate OR 0.00375-0.015 mg/kg i.v., hydromorphone		PRN every 15-30 minutes from onset of pain to a maximum of 4 doses. 0.025-0.1 mg/kg i.v., morphine sulfate OR 0.00375-0.015 mg/kg i.v., hydromorphone		Consider discharge if vital signs are stable	

Route of administration: Oral Intravenous



Hosted file

Table 1_pain management_final.docx available at <https://authorea.com/users/516210/articles/591210-pain-mitigation-and-management-strategies-for-anti-gd2-infusions>