Lidocaine for dinutuximab associated pain? A multicenter retrospective observational cohort study

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Abstract

Dinutuximab, an immune-mediated therapy used in the treatment of high-risk neuroblastoma targets the protein disialoganglioside (GD2) present on neuroblastoma cells, neurons, and peripheral nerve fibers. Off target effects could lead to severe nerve pain. Pain regimens including continuous infusion opioids are required during the first treatment course. Our institution utilizes a combination of intravenous (IV) lidocaine infusions and morphine for the treatment of dinutuximab-associated neuropathic pain. The primary outcome of this study was to compare morphine equivalents for cycle one of dinutuximab at an institution that uses IV lidocaine (primary) versus those that do not (comparison). Secondary outcomes included both dinutuximab infusion time and safety of IV lidocaine. A retrospective, multi-centered, electronic chart review was performed at three tertiary academic medical centers. Patients between 0-18 years of age during their first course of dinutuximab were included to evaluate the primary outcome of adjuvant morphine equivalents needed. Total morphine equivalents at the primary institution were 1.87 mg/kg vs 1.79 mg/kg at the comparison institutions (p=0.413). Dinutuximab infusion time was significantly lower at the primary institution: 610.5 minutes vs 676.23 minutes (p=0.046). Only one patient at the primary institution experienced nausea, vomiting and paresthesias. This study did not find a statistically significant difference in morphine equivalents between patients who received IV lidocaine and those who did not. However, we did find that use of IV lidocaine resulted in a statistically significant lower dinutuximab infusion time and that it is a safe adjuvant medication in the treatment of dinutuximab-associated neuropathic pain.

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