The Treatment of Motion Sickness in the Prehospital Setting: A Comparison of Metoclopramide and Diphenhydramine to Placebo

Lori Weichenthal, MD, James Andrews, MD and Stephanie Rubio, MD
UCSF Fresno Department of Emergency Medicine

OBJECTIVES

To compare the efficacy of metoclopramide, diphenhydramine and placebo for the treatment of motion sickness in patients transported via ambulance in a mountainous setting.

METHODS

A prospective, randomized, double-blinded placebo controlled study of patients transported by ambulance in the mountainous regions of Fresno County. Patients who met inclusion criteria and who agreed to participate in the study were asked to rate their motion sickness every 5 minutes on a visual analog scale (VAS). If they developed motion sickness, they were randomized to receive metoclopramide (20 mg), diphenhydramine (50 mg) or placebo (saline). Symptoms then continued to be recorded every 5 minutes on a VAS. If signs and symptoms of motion sickness continued after 15 minutes of onset, patients were offered a rescue dose of metoclopramide. All data was entered into an Excel spreadsheet (Microsoft 2007) and then imported into NCSS/PASS 2000 (2000 Jerry Hintze) with which appropriate statistical analysis were performed.

RESULTS

Twenty six patients were enrolled in the study, 22 of which developed motion sickness and were randomized to the three different arms of the study. Eight received metoclopramide, 7 diphenhydramine and 7 placebo. The metoclopramide group showed a significant decrease in mean VAS score at 15 minutes when compared to the diphenhydramine and placebo groups. There was no difference in the VAS score between placebo and diphenhydramine at that time. Twelve out of the 22 patients requested a rescue dose of metoclopramide after 15 minutes. A majority of the patients in the diphenhydramine and the placebo groups chose to receive the rescue dose. At 25 minutes, there was no significant difference in the VAS score between the three groups.

CONCLUSIONS

During ambulance transport in mountainous settings, metoclopramide is superior to diphenhydramine and placebo in the treatment of motion sickness.