

Intravenous magnesium sulfate for acute bronchiolitis: evaluation of the effect on clinical course and outcomes

Nihan Şık¹, Hale Çitlenbik², Ali Öztürk², Durgül Yılmaz², and MURAT DUMAN²

¹Affiliation not available

²Dokuz Eylül University Faculty of Medicine

March 07, 2024

Abstract

Background: The aim of this study was to assess the efficacy of intravenous (IV) magnesium sulfate (MgSO₄) on clinical severity scores, need for respiratory support and outcomes for previously healthy children with bronchiolitis. **Methods:** We retrospectively assessed children with moderate-severe bronchiolitis. Patients who received 40 mg/kg/dose of IV MgSO₄ (group 1) or not (group 2) were compared for vital signs, clinical findings and outcomes. **Results:** There were 74 patients in group 1 and 33 in group 2. The median age, the mean respiratory rates, oxygen saturation/fraction of inspired oxygen (S/F) ratios and, The Modified Respiratory Distress Assessment Instrument (mRDAI) scores at the time of starting MgSO₄ treatment were similar for two groups. Respiratory rate and mRDAI score significantly decreased at the 2th hour of MgSO₄ treatment and the decrease was observed for 4th, 8th and 12th hours, compared with group 2. Patients in group 1 had a higher S/F ratio at 4th hour compared with group 2 and in group 1, the elevation was observed at the 4th hour. Patients in group 2 had a higher rate of requirement and an earlier start high flow nasal cannula oxygen therapy but the total duration time was similar for two groups. Patients in group 2 had a longer hospital stay than group 1. **Conclusion:** Intravenous MgSO₄ provided significant improvement on clinical severity, early phase of oxygenation, need for respiratory support, length of stay in the hospital and outcomes. It seems to be an effective treatment option for management of bronchiolitis.

Hosted file

IJCP manuscript.docx available at <https://authorea.com/users/357979/articles/711015-intravenous-magnesium-sulfate-for-acute-bronchiolitis-evaluation-of-the-effect-on-clinical-course-and-outcomes>

Hosted file

Table 1.docx available at <https://authorea.com/users/357979/articles/711015-intravenous-magnesium-sulfate-for-acute-bronchiolitis-evaluation-of-the-effect-on-clinical-course-and-outcomes>

Hosted file

Figure 1.docx available at <https://authorea.com/users/357979/articles/711015-intravenous-magnesium-sulfate-for-acute-bronchiolitis-evaluation-of-the-effect-on-clinical-course-and-outcomes>

Hosted file

Figure 2.docx available at <https://authorea.com/users/357979/articles/711015-intravenous-magnesium-sulfate-for-acute-bronchiolitis-evaluation-of-the-effect-on-clinical-course-and-outcomes>

Hosted file

Figure 3.docx available at <https://authorea.com/users/357979/articles/711015-intravenous-magnesium-sulfate-for-acute-bronchiolitis-evaluation-of-the-effect-on-clinical-course-and-outcomes>