

Abstract

Introduction

Magnesium sulphate (MgSO_4) has been used for neuroprotection in the management of pre-eclamptic toxemia (PET) and eclampsia in mothers of neonates at a lower gestational age and its use is recommended in preterm deliveries less than 30-32 weeks of gestation. There may be greater effects at an earlier gestational age, with no associated long term adverse foetal or maternal effects; resulting in increased survival of preterm babies. The aim of the study was to assess if the administration of MgSO_4 improved the neonatal outcomes in low birth weight (LBW) infants whose mothers received magnesium sulphate.

Methods

This was a retrospective descriptive study of neonates, whose mothers' received

MgSO_4 (as indicated by MgSO_4 + group) admitted to the neonatal unit within a two-year period (January 2016 – December 2017). The demographics and outcome at hospital discharge were collected and analysed.

Results

A total of 485 (7.5%) of 6510 LBW neonates' mothers received MgSO_4 . Pre-eclamptic toxemia (PET) [n=235 (48%)], eclampsia [n=90 (19%)] and Haemolysis, Elevated Liver enzymes, Low platelets (HELLP) syndrome [n=28 (6%)] were the main indicators for the administration of MgSO_4 . Mothers in the MgSO_4 + group were older and had a higher parity. Seventy percent received antenatal steroids in the MgSO_4 + group and 30% of these were HIV positive. Neonates in the MgSO_4 + group had a lower gestational age ($p < 0.001$) and birthweight ($p < 0.001$). A smaller number of neonates in the MgSO_4 + group required resuscitation and had higher oxygenation ($p = 0.005$) on admission. A higher proportion of neonates in the MgSO_4 + group had lethargy, hypotonia ($p < 0.001$), asphyxia ($p < 0.001$), early onset sepsis (EOS) ($p < 0.001$), intraventricular haemorrhage (IVH) ($p < 0.001$), respiratory distress syndrome (RDS) ($p < 0.001$), required respiratory support ($p < 0.001$) and died ($p < 0.001$).

In the multivariate logistic regression analysis; PET, asphyxia and hypotonia were associated with mortality.

Conclusion

There was an increase in neonatal morbidities and mortality in neonates whose mothers received MgSO_4 +. Monitoring of these neonates, in addition to monitoring MgSO_4 + levels to document a dose effect, is essential.

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