



The Neuro-Protective Efficacy of Post-Natal Magnesium Sulphate in Term/Near term Infants with Moderate to Severe Birth Asphyxia.



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Introduction

Birth asphyxia is one of the leading causes of neonatal morbidity and mortality in the world. In Pakistan, neonatal mortality rate is 41 per 1,000 live births and birth asphyxia contributes to 20.9% of neonatal deaths. In neonates with moderate HIE, 10-20% die and 30-40% develop neurological deficit, whereas 50-90% neonates with severe HIE die and all survivors develop neurological deficit.

Aims & objectives

The goal of this study was to determine whether postnatal magnesium sulphate therapy could improve short and long term neurological outcome in term/near term neonates with moderate to severe birth asphyxia.

Methods

This prospective double blind RCT was conducted in the Neonatology Department of the Children's Hospital & the Institute of Child Health, Lahore. A total of 62 neonates (31 in each group) were randomized to receive either 3 doses of magnesium sulphate infusion at 250 mg/kg per dose, 24 hours apart (treatment group) or 3 doses of injection 10% D/W infusion at 3 ml/kg, 24 hours apart (placebo group). Both groups received similar supportive care for perinatal asphyxia. Neurodevelopmental assessment was done at 6 months of age using ShaMaq Developmental Inventory.

Conclusion

Postnatal magnesium sulphate treatment improves short term neurologic outcome at discharge in term/near term neonates with moderate to severe perinatal asphyxia. However, there was no effect on long term neurodevelopmental outcome.

Outcome variables of the study participants

	Magnesium group	Placebo group	P value
Seizure control (days)	1.708±0.464	2.652±1.112	0.001 (<0.05)
Initiation of feed (days)	1.580±0.564	2.516±0.961	0.002 (<0.05)
Duration of stay (days)	3.258±1.063	4.387±1.994	0.003 (<0.05)
Mortality	2	4	0.390
Abnormal cranial USG	12	17	0.783
Developmentally delayed	6	8	0.535

References

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