Bolus followed by continuous infusion of magnesium sulfate ($MgSO_4$) is independently associated with grade III or IV intraventricular hemorrhage (Gr III/IV IVH) in neonates born less than 32 weeks gestational age compared to bolus dosing alone

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Background: $MgSO_4$ is utilized for fetal neuroprotection. There is a reported association between IVH and elevated maternal serum magnesium.

Objective: To evaluate the effect of continuous $MgSO_4$ infusion on Gr III/IV IVH versus bolus dosing alone.

Methods: A retrospective cohort study of deliveries <32 weeks having received $MgSO_4$ within 12h of delivery was conducted. Institutional policy shifted from Mg bolus and infusion (2014) to a single bolus dose (2015). Grade III / IV IVH cases in each cohort were analyzed by Fisher's exact test and logistic regression.

Results: 18 deliveries in 2014 and 36 in 2015 were included. There were 5 cases of IVH, 4 in 2014 and 1 in 2015 (p 0.04). This association remains (p 0.04) after controlling for race, preterm labor, gestational age, and indomethacin exposure.

Conclusion: Bolus dosing followed by continuous infusion of Mg for fetal neuroprotection is associated with higher rates of Gr III/IV IVH when compared to bolus dosing alone.