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SAFETY PROFILE OF CHLORAL SEDATION FOR MRI IN TERM AND PRETERM NEONATES

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Background: Chloral hydrate is a widely used sedative for MRI scanning in the newborn. However some studies suggest that infants may have a relatively high risk of complications[1]. The aim of this study was to assess the adverse effects of sedation in a large cohort of neonates.

Method: Infants >32 weeks gestation undergoing brain MRI at our institution are sedated and monitored according to strict protocols. Casenotes of infants who underwent MRI scanning from 2008-2010 were retrospectively reviewed. Infant demographics were recorded, along with sedation dose, comorbidities, time to discharge and side effects of sedation including oxygen requirement and significant desaturation/apnoea.

Results: 411 infants (median gestation/weight at scan 42weeks/3500grams) were sedated with chloral hydrate(median dose 50mg/kg). 408(99.3%) infants completed the scan. The overall complication rate was 5.1%(95% confidence limits 2.9-7.3%). Desaturation or additional O2 requirement occurred during MRI scan in 20 babies(4.9%), but episodes were all short-lived and did not delay discharge home. 1 patient required overnight observation following an apnoeic episode post-MRI, but was discharged without complication the following day. There were no significant differences in gestational age($p=0.16$), corrected gestation at scan($p=0.62$), weight at scan($p=0.19$) or sedation dose($p=0.29$) between the affected and non-affected groups. Lower birthweight was associated with fewer adverse events($p=0.03$), presumably because higher birthweight babies were scanned following neurological insult.

Conclusion: When adhering to strict protocols and with adequate monitoring, chloral hydrate sedation for MRI scanning can be safely performed for both preterm and term infants.

1. Litman et al, Anaesthesia & Analgesia 2010.