

**GAMMA-HYDROXYBUTYRATE VS.  
CHLORPROTHIXENE/PHENOBARBITAL SEDATION IN CHILDREN  
UNDERGOING MRI STUDIES**

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Background: Few clinical studies have assessed gamma-hydroxybutyrate and chlorprothixene/phenobarbital sedation in children. This prospective trial compared the two regimes in children, in particular concerning differences in recovery time. Methods: 28 pediatric oncology patients undergoing elective MRI studies at a university hospital were randomly assigned to either receive gamma-hydroxybutyrate or chlorprothixene/phenobarbital sedation. Time to induce deep sedation (Ramsay score of 5) and recovery time, the incidence of failure of sedation, the frequency of side effects, the need for therapeutic interventions and the number of patients receiving additional midazolam were recorded. Analysis of hemodynamic parameters was performed at five defined time points. Results: All 28 MRI studies were successfully completed. Recovery time was significantly shorter with gamma-hydroxybutyrate ( $p < 0.01$ ). There were more side effects with chlorprothixene/phenobarbital, in particular tachycardia and hyperexcitation. Vomiting was the side effect most often seen in gamma-hydroxybutyrate sedation. Therapeutic interventions were not required in any patient. Additional midazolam was necessary to maintain satisfactory sedation in six children receiving gamma-hydroxybutyrate and four receiving chlorprothixene/phenobarbital. Conclusions: Due to its significantly shorter recovery time, gamma-hydroxybutyrate is a reasonable sedative drug for children undergoing non-invasive diagnostic procedures, and is superior to chlorprothixene/phenobarbital. In pediatric oncology patients gamma-hydroxybutyrate appears to be associated more often with vomiting. The long recovery time and its great variability make chlorprothixene/phenobarbital a less valuable alternative.