



Rapid sedation induced by fentanyl combined with propofol via an intrathecal chemotherapy injection for leukemia in children

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ABSTRACT. This study explored the sedative and analgesic effects of fentanyl combined with propofol via an intrathecal chemotherapy injection for acute leukemia (acute lymphocytic leukemia or acute myelocytic leukemia) among children, to relieve pain and difficulty during intrathecal injection, improve treatment compliance, increase the success rate of single puncture, and reduce procedure failure, with the aim of developing a painless procedure for children with acute leukemia. Fifty person-times received fentanyl combined with propofol via an intrathecal chemotherapy injection among the hospitalized children with leukemia. The patients' cooperation with the procedure, response to the medication, dosages of fentanyl and propofol, reaction to the procedures, wake-up time, and changes in oxygen saturation (SpO₂), heart rate (HR), respiration, and blood pressure (BP) before, during,

and after the procedures were observed. The doctors who performed the procedures assessed the quality of sedation and analgesia. In the treatment group, the patients were quiet during the lumbar puncture and intrathecal injection, showing good sedation and analgesia. HR and respiration decreased slightly. There were no changes in SpO₂ and BP. No obvious respiratory depression occurred with proper dosages. Only a few patients showed stertorous respiration, which stopped soon after the procedures. In the control group, the patients were agitated, crying, and not cooperative before and during the procedures, which made the procedures very difficult. During intrathecal injection, pain obviously reduced and the success rate of single lumbar puncture increased. It is safe and effective to apply fentanyl combined with propofol for sedation and analgesia.

Key words: Children; Propofol; Fentanyl; Intrathecal injection