Is less ketamine better? Comparison of 0.25 mg/kg vs 0.5 mg/kg in addition to propofol efficacy and safety in sedating pediatric oncologic patients requiring painful procedures

Introduction: Invasive procedures such as bone marrow aspiration in pediatric patients with hematological malignancies are often repeated at regular intervals. The combination of propofol and small dose ketamine 0.5 mg/kg had been widely used for this purpose. At our institution, our intensivist-based sedation team use 0.5 mg/kg for patients weigh less than 20 kg and a smaller dose ketamine 0.25 mg/kg for patients weigh more than 20 kg.

Methods: Retrospective chart review from January 2015 to December 2015 was performed. A total of 232 patients were sedated using propofol with addition of ketamine (P+K). Patients < 20 kg received 0.5 mg/kg of ketamine (group1), while patients > 20 kg received 0.25 mg/kg of ketamine (group2). Propofol dose and adverse events (hypotension and hypoxemia) were recorded in both regimens along with recovery time.

Results: All procedures were successfully completed. Sedation was induced with propofol dose 5.9 ± 2.3 mg/kg in group1 and 4.1 ± 1.9 mg/kg in group2. Both groups have only one event of hypotension. Recovery time was not different between two groups. Significantly more children in group1 developed hypoxemia 14% compared to 3.3 % in group2.

Conclusion: Smaller dose of ketamine 0.25 mg/kg with propofol is effective for procedural sedation in pediatric patients with hematologic malignancies requiring painful procedures and results in lower incidence of hypoxemia.