



PP24

Clinical Characteristics, Treatment, and Outcomes of Local Anesthetic Systemic Toxicity: A 10-Year Retrospective Study Reported to Ramathibodi Poison Center

Dr Thanapat Kaenphukhiew^{1,2}, Theerapon Tangsuwanaruk^{1,2}, Satariya Trakulsrichai^{1,3}, Phantakan Tansuwannarat^{1,4}

¹Ramathibodi Poison Center, Faculty of Medicine Ramathibodi Hospital, Mahidol University.

²Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University.

³Department of Emergency Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University.

⁴Chakri Naruebodindra Medical Institute, Faculty of Medicine Ramathibodi Hospital, Mahidol University.

Aim and objectives:

Local anesthetic agents are frequently employed in clinical settings to offer pain relief through neural blockade. Their function provides analgesia throughout antiarrhythmic agent to mitigate ventricular arrhythmias. The incidence of Local Anesthetics Systemic Toxicity (LAST) is not excessively high, it can lead to potentially fatal outcomes. This study aimed to clarify the clinical characteristics, treatments, and outcomes of patients with LAST.

Methodology:

We performed a 2-year retrospective analysis (January 2021–December 2022) using data from the RPC Toxic Exposure Surveillance System. The primary outcomes were the clinical characteristics, treatment and outcomes with LAST.

Results:

A total of 58 cases were consulted at our poison center, of which 34 were females. The mean age of all cases was 40.7 years old. The most prevalent type of local anesthesia associated with Local Anesthetic Systemic Toxicity is lidocaine (81.0%). The dental procedure stands out as the most frequent context in which local anesthesia is employed (27.6%). The subcutaneous route emerges as the primary contributor to LAST.



Overdose has been identified as the leading cause of LAST. However, our study uncovered a therapeutic error rate of approximately 6.9%. The average onset time for initial symptoms of LAST is 42 minutes. Seizures were the most commonly observed neurological symptoms in our study, followed by coma and numbness in descending order. An intralipid emulsion was administered to 9 patients (15.5%). No adverse effects were reported following the administration of the intralipid emulsion. Cardiac arrest occurred in seven patients, resulting in a mortality rate of 8.6% (5 /58 cases).

Conclusions:

Local anesthetic systemic toxicity continues to manifest itself within routine medical practice. The therapeutic error occurred might potentially be attributed to the similarity between vials containing lidocaine and those housing 50% glucose solutions. Notably, our study substantiated the dominance of neurological symptoms as the foremost manifestation, encompassing symptoms such as seizures. The mortality rate documented in our study was not low.