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Awareness and knowledge about local anesthetic systemic toxicity among pre-residency physicians at Siriraj Hospital, Thailand

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Objective: Local anesthetic systemic toxicity (LAST) is a rare but extremely serious adverse effect associated with the use of local anesthetics. Treatment with fat emulsion has been recognised as an effective antidotal treatment for LAST for a decade. Physicians who use local anesthetics in their practice should have knowledge about diagnosis and treatment of LAST. This study aims to assess knowledge about local anesthetics, diagnosis and treatment of LAST among physicians at the start of their residency training in Thailand.

Methods: All physicians, who were at the start of their residency training at Siriraj Hospital in 2018, were enrolled. After giving informed consent, each physician completed an online 25-item questionnaire. The general data part of the questionnaire included questions regarding specialty, frequency of local anesthetic use, awareness and understanding of local anesthetic use and LAST, and confidence in managing LAST. The assessment part consisted of questions regarding general knowledge of local anesthetic agents, general knowledge about LAST, risk factors for LAST, diagnosis and treatment of LAST. The outcomes were knowledge of anesthetic agent and LAST among physicians at the start of the specialty training. Data were summarized as mean, 95% confidence interval (CI), frequency and percentage.

Results: 105 participants were enrolled. The majority were from the Departments of Surgery (33%), then Anesthesiology (17.1%), Pediatrics (17.1%) and Medicine (15.2%). Fifty participants (47.6%) reported using local anesthetics at least 10 times a month. On a Likert scale, the highest frequency for each category was 2 (38.1%) for general knowledge of local anesthetic agents, 2 (35.2%) for awareness of LAST and 2 (43.8%) for confidence in treatment of LAST. The mean score for the overall assessment was 48.8% (95% CI 46.3-51.4). Mean scores for the separate sections were 58.4% (95% CI 54.8-62.1) for general knowledge of local anesthetics, 56.9% (95% CI 49.4-64.4) for risk factors of LAST, 47.1% (95% CI 41.5-52.7) for knowledge of LAST, 41.4% (95% CI 37.3-45.5) for treatment of LAST and 40.7% (95% CI 34.8-46.5) for diagnosis of LAST.

Conclusion: Based on our results, general knowledge of local anesthetic use and LAST is relatively low amongst physicians who regularly use local anesthetics. This is especially true with respect to diagnosis and treatment of LAST.