

Experience with lipid rescue and local anaesthetic toxicity in Scotland: a survey

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Introduction

Local anaesthetics are frequently used drugs in anaesthetic practice, particularly for central neuraxial blockade and other regional techniques. Intravenous infusions are also increasingly used in the management of acute pain¹. Systemic toxicity (LAST) is a rare but potentially lethal complication². There is evidence for lipid emulsion preparations as an effective adjunct to standard management of LAST and national safety guidance has been published on their use³. This study aimed to investigate how many anaesthetists in Scotland have seen LAST and how much experience they had with the use of lipid rescue therapy.

Methods

An 11 question online survey created using the Jisc platform was distributed to 25 Scottish anaesthetic departments between the dates of 11.1.21 and 20.2.21. All survey questions are contained within Figure 1 to 5.

Acknowledgements

Many thanks to those who responded to this survey and special thanks go to the anaesthetic department secretaries and PAs who very kindly assisted with its distribution. I am particularly grateful to Dr A Waite (RIE) for invaluable help and advice.

Results

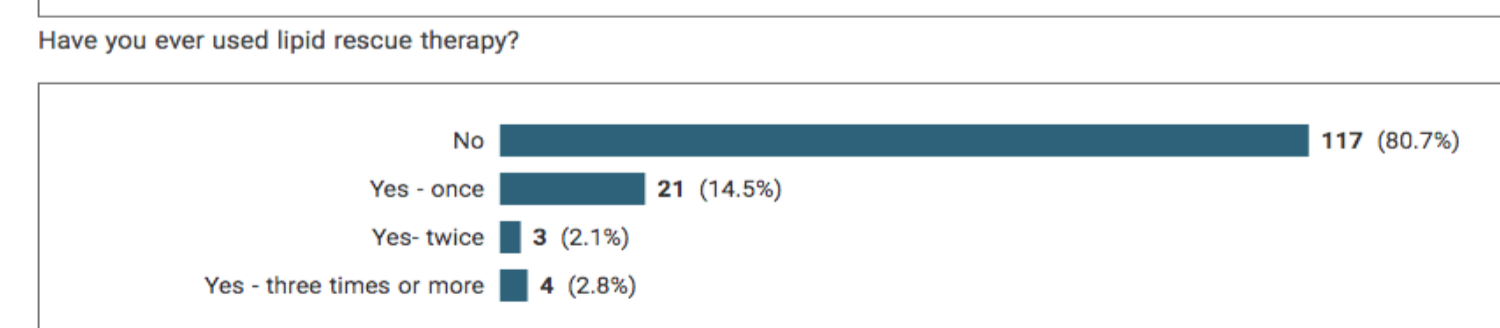
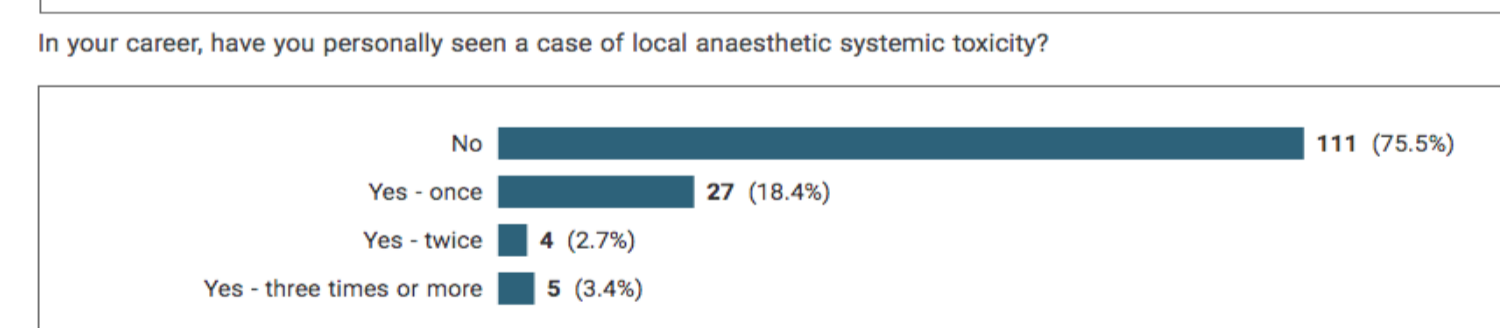
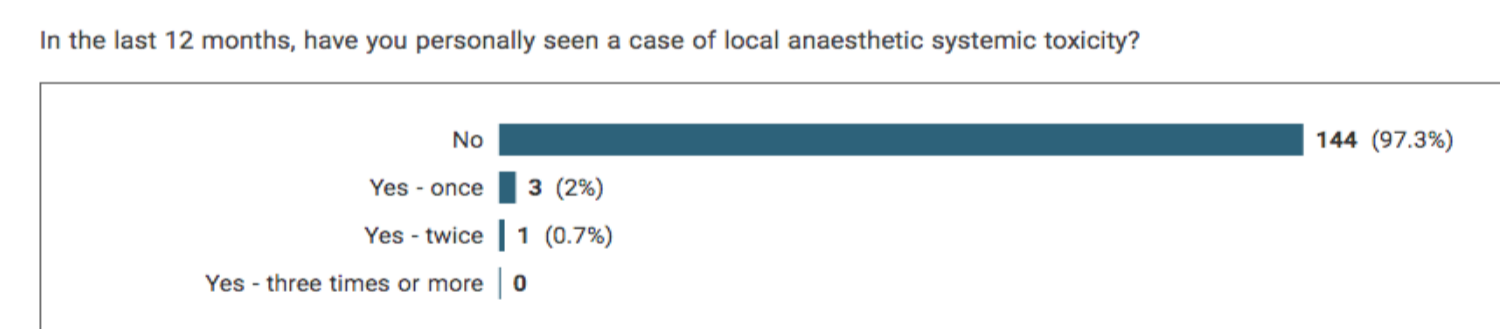
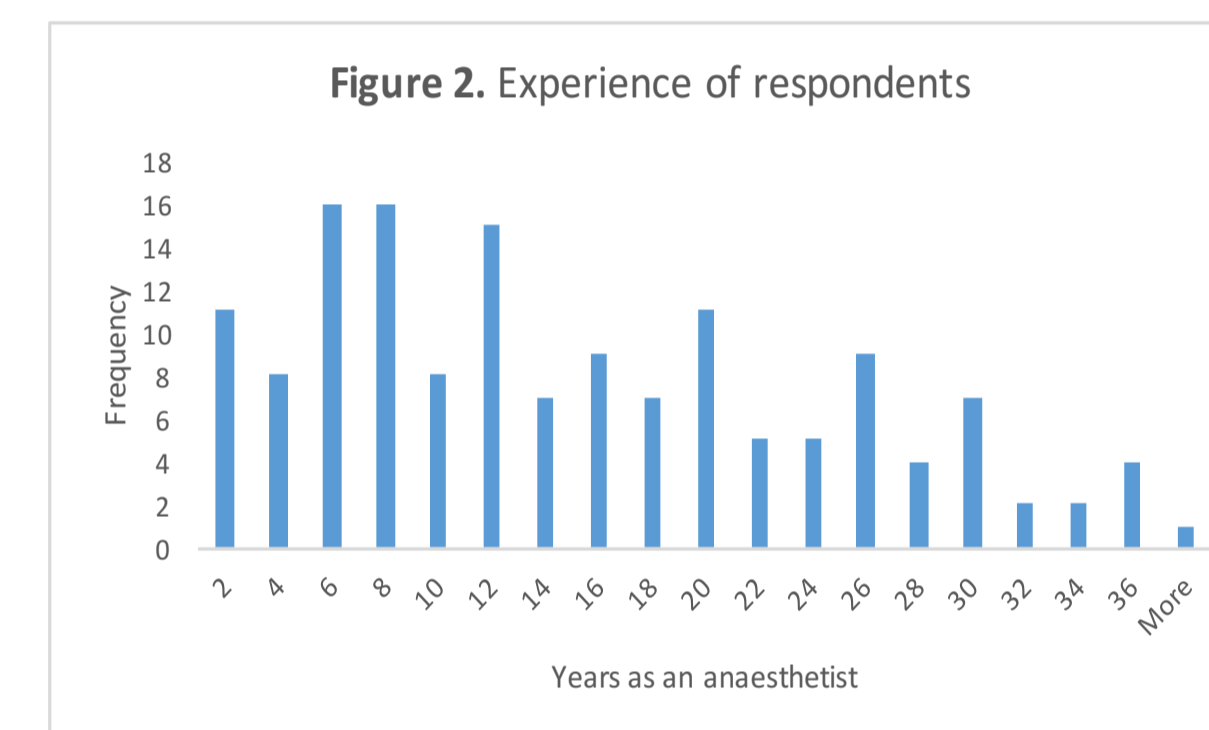
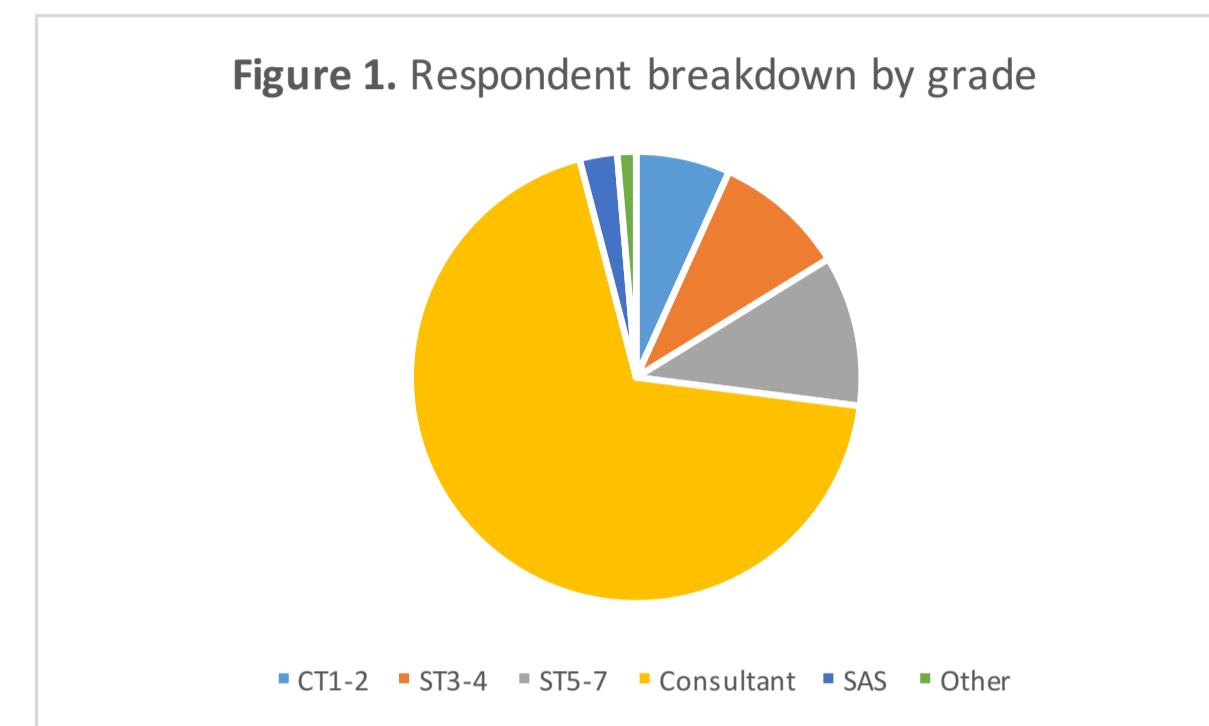


Figure 3. Personal experience with LAST and lipid rescue

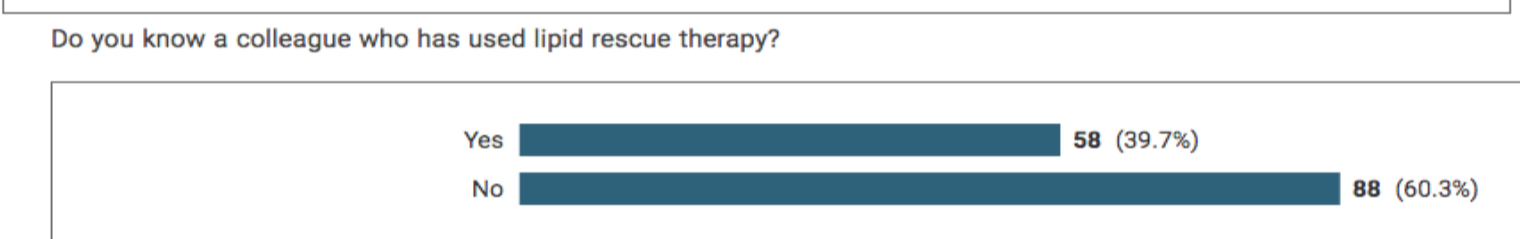
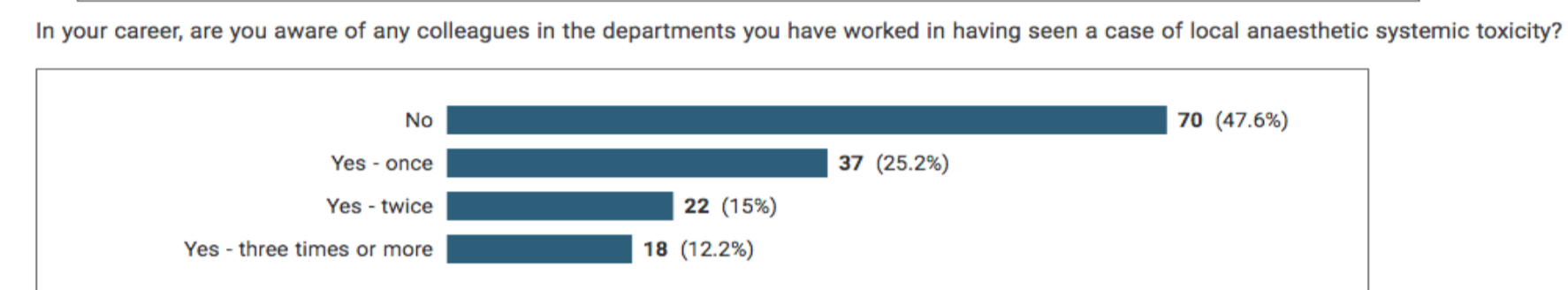
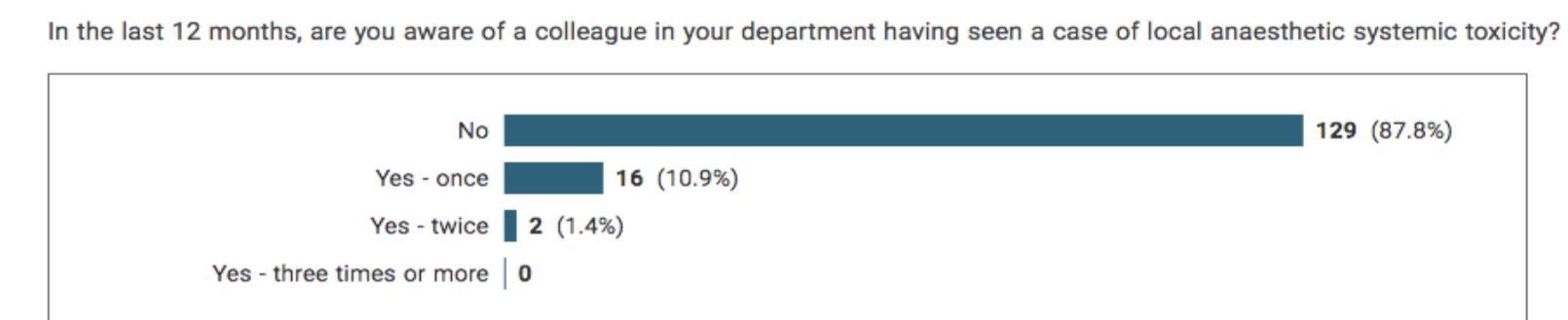
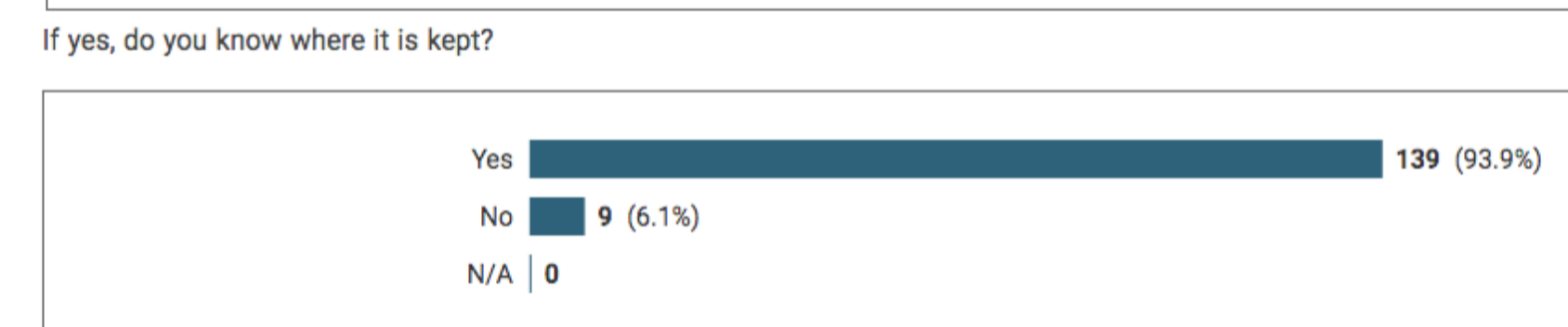
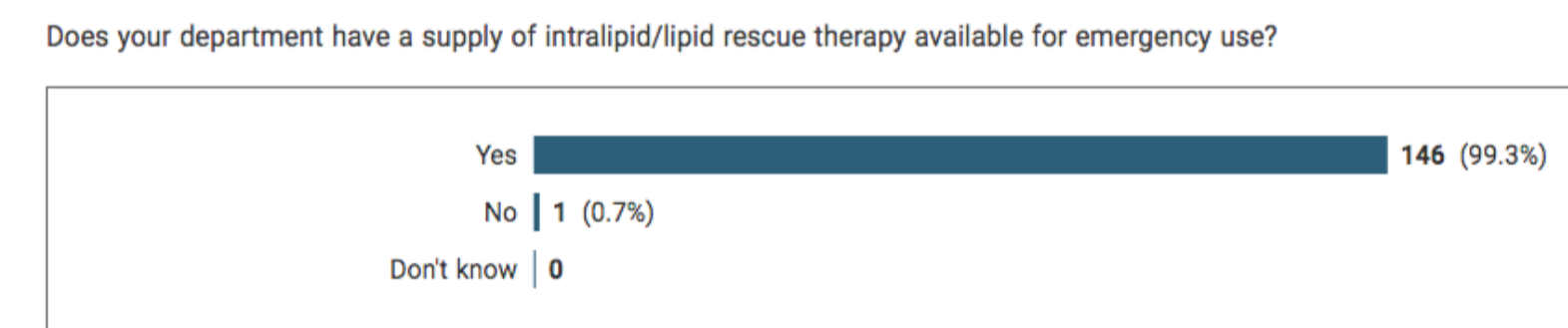


Figure 4. Colleague experience with LAST and lipid rescue



In a case of local anaesthetic systemic toxicity, would the presence of any of the clinical features below prompt you to administer intralipid / lipid rescue in addition to other supportive management? (Please tick all that apply)

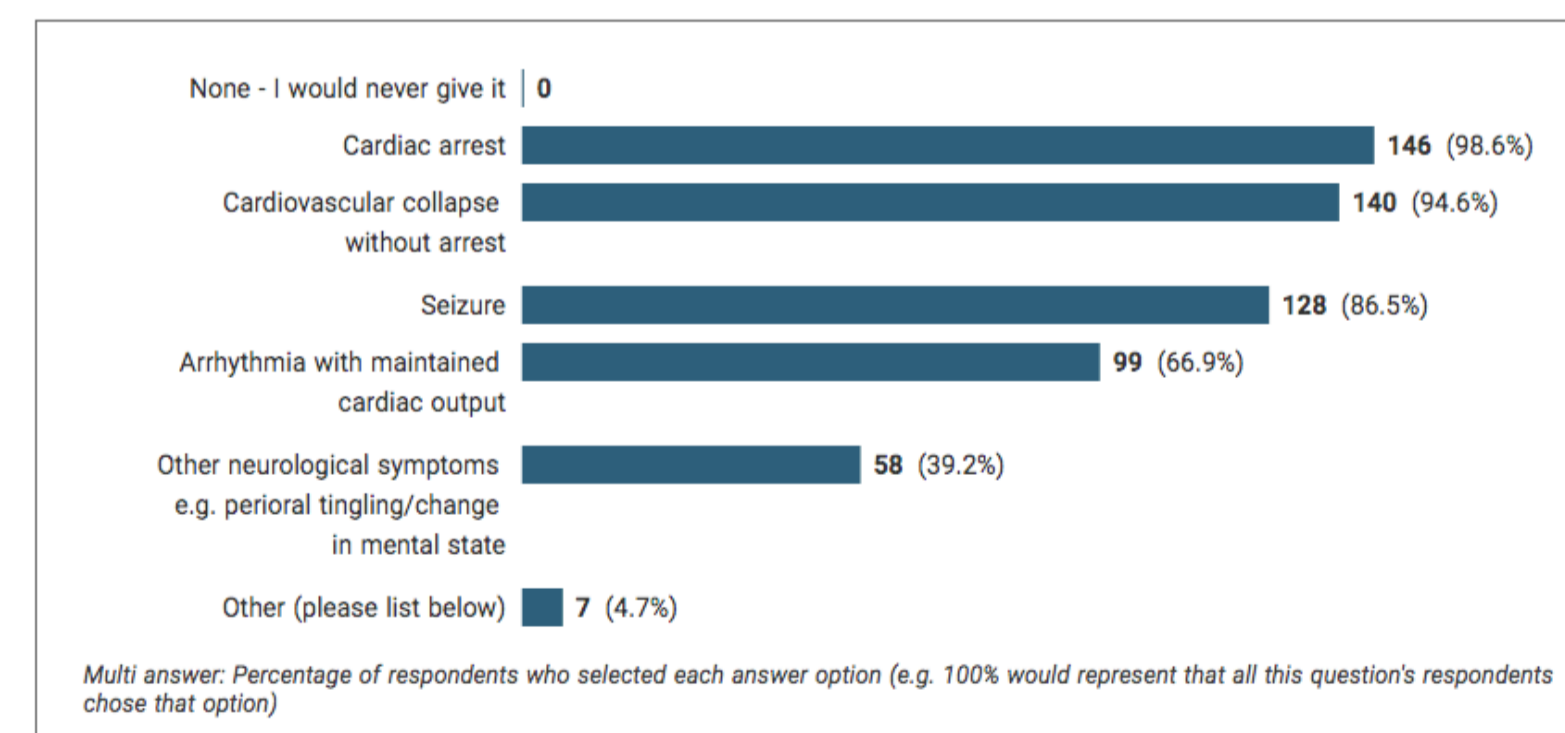


Figure 5. Availability and awareness of lipid rescue

148 completed responses were received. The majority were from consultants (102) but with representation across all grades (Fig. 1). There was a broad range of experience in anaesthesia (Fig. 2) from 1 to 42 years of clinical practice with a mean of 14.7 years. Almost 1 in 4 respondents (24.5%) had personally seen a case of local anaesthetic toxicity. Of these almost 1 in 5 (19.3%) had administered lipid rescue with 2.8% having administered lipid rescue 3 or more times. The majority of anaesthetists had never seen a case of LAST or administered lipid rescue therapy (Fig. 3) though more than half (52.4%) were aware of colleagues having administered lipid rescue (Fig 4) . There was almost universal availability and awareness of the use of lipid rescue solutions in accordance with national guidelines (Fig. 5).

Conclusions

Although the majority of anaesthetists had never seen LAST, there was excellent knowledge of the role of lipid rescue and near universal availability, suggesting the success of new safety protocols and awareness campaigns in recent years. A significant minority had administered lipid rescue; this may also reflect increasing recognition of efficacy in non-local anaesthetic drug toxicity, such as tricyclic antidepressant overdose.

These data suggest a reasonable chance of encountering LAST during a career in anaesthesia. Given the potential for poor outcomes when it does occur (and the knowledge there is a reasonable chance we will personally be called on to manage such a situation) it may be a good candidate for use in simulation training scenarios.

References

- [1] Meaney, E. D., Reid, L., & Srivastava, D. A survey on the use of intravenous lidocaine infusion for acute pain in Scottish Hospitals. *British Journal of Pain* 2020;14(2): 98–103.
- [2] Macfarlane, A. J. R., Gitman M., Bornstein, K. J. et al. Updates in our understanding of local anaesthetic systemic toxicity: a narrative review. *Anaesthesia* 2021;76: 27-39
- [3] Guidelines for the Management of Severe Local Anaesthetic Toxicity. AAGBI, London 2010