restrictions to the use of propofol for sedation in paediatric ICUs.[10] A more general myotoxic effect is also hypothesised after the occurrence of severe myalgia even after brief procedural sedation, and propofol infusion syndrome, often a lethal condition that involves rhabdomyolysis, can also occur in adults.[11] In a UK survey on paediatric ICU sedation practices, propofol was only used in 2.6% of patients, all more than the age of 4 yr, and not exceeding 2 mg kg^{-1} h^{-1}.[12] Thus it is possible to perform long-term sedation without the use of propofol, a fact that may explain the relatively rare occurrence of CIM in children.[13]

In conclusion, as with so many other issues relating to COVID-19 we need to discuss and perhaps re-evaluate our practice. Prolonged propofol infusions may not be in the best interest of COVID-19 ICU patients. We are currently planning a study of the occurrence of CIM in survivors of COVID-19 intensive care. We hope that others will follow suit and perform relevant neurophysiologic investigations (e.g. electroneurography, electromyography, and muscle biopsies) in cases of suspected CIM.

Declarations of interest

The authors declare that they have no conflicts of interest.

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Cardiac arrest precipitated by succinylcholine in a patient with COVID-19. Comment on *Br J Anaesth* 2020; 125: e255–7

Douglas C. Crockett[1,2], Matthew C. Frise[1,3] and Jamie M. Strachan[2,*]

[1]Oxford, UK, [2]Milton Keynes, UK and [3]Reading, UK

*Corresponding author. E-mail: Jamie.Strachan@mkuh.nhs.uk

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Editor—We read with interest the report by Sigurdsson and colleagues[1] describing cardiac arrest secondary to ventricular tachycardia after succinylcholine use for rapid-sequence induction (RSI) and tracheal intubation in the ICU. This occurred after a failed extubation in a patient requiring mechanical ventilation for 17 days owing to respiratory failure as a consequence of severe acute respiratory syndrome (SARS)-coronavirus 2 (SARS-CoV-2) infection. The cause of the arrhythmia appeared to be hyperkalaemia, and

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the authors highlight several risk factors present in their patient for this recognised complication of succinylcholine administration.

Sigurdsson and colleagues[1] state that 'Although succinylcholine is commonly used, there are surprisingly few studies and well documented case reports published on this subject'. In fact, reports of life-threatening complications from succinylcholine administration date back more than 50 years, and the case described serves as an important reminder of how easily this adverse effect can be forgotten. The authors further comment that 'Despite a long ICU stay, our patient had not been diagnosed with critical illness myopathy'.

Of note, a similar case was reported in 2019 in a patient with SARS secondary to influenza who required emergent re-intubation after a protracted period of mechanical ventilation.[2] This prompted correspondence regarding the hazards of succinylcholine administration in critically ill patients undergoing mechanical ventilation for a significant period, even if frank signs of ICU-acquired weakness are not immediately apparent.[3] This life-threatening adverse effect of succinylcholine is one of the reasons why joint guidance from the Royal College of Anaesthetists, Difficult Airway Society, Faculty of Intensive Care Medicine, and Intensive Care Society recommends rocuronium for emergent intubation of critically ill patients.[4]

Despite this clear guidance, hugely increased demand for neuromuscular blocking agents (NMBAs) as a result of the coronavirus disease 2019 (COVID-19) pandemic prompted an alert in the UK by the Medicines and Healthcare products Regulatory Agency (MHRA) on April 16 this year that 'Where patients are being intubated, Trusts should use suxamethonium (not rocuronium) as a first choice, unless there are contraindications'.[5] The rationale was that as supplies of atracurium and cis-atracurium became depleted, it seemed likely that it would become necessary to use rocuronium by infusion to maintain paralysis in the most difficult to ventilate critically ill patients, including those requiring proning. In addition to suggestions for minimising NMBA use during this period, subsequent guidance[6] from the Royal College of Anaesthetists was an important reminder to clinicians, particularly those re-deployed to work outside of their usual areas of practice, of the risk of increased plasma K^+ with succinylcholine use in critical illness.

Duration of mechanical ventilation is the main risk factor for ICU-acquired weakness, a complex multifactorial complication of critical illness characterised by polyneuropathy and myopathy.[7] Although it is possible that SARS-CoV-2 infection itself predisposes to an excessive increase in K^+ when succinylcholine is administered, it is difficult to draw any firm conclusion from a single case. Patients critically unwell with COVID-19 frequently require an extended period of mechanical ventilation and paralysis,[8] which may be the main factor predisposing to severe hyperkalaemia after succinylcholine administration in this setting.

The report from Sigurdsson and colleagues[1] highlighting the dangers of succinylcholine use in critically ill patients serves as a reminder that the choice of agent for neuromuscular block to facilitate tracheal intubation remains a clinical one. Succinylcholine may be appropriate as part of anaesthesia for elective or emergent surgical procedures during the COVID-19 pandemic, particularly as its use conserves supplies of other NMBAs. It may also be reasonable to use succinylcholine for emergent intubation of patients with COVID-19 early in the course of the illness, where risk factors for life-threatening complications are absent. However, we believe that rocuronium should remain the first choice agent for all critically ill patients, whether SARS-CoV-2 infection is the underlying pathology or otherwise. Succinylcholine use is an independent predictor of peri-intubation cardiac arrest after emergent in-hospital tracheal intubation.[9] As the authors of a 1996 case report comment, succinylcholine would probably not be granted a licence for use if it underwent clinical trials today.[10]

Declarations of interest

The authors declare that they have no conflicts of interest.

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