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Choice of hypnotic drug for obstetric and non-obstetric general anaesthesia. Comment on *Br J Anaesth* 2020; 125: e81–7

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Editor—Difficult airway management is one of the leading causes of severe maternal complications and death related to obstetric general anaesthesia.¹ Airway management conditions depend on maternal airway anatomy that should be assessed before any obstetric anaesthesia; they also depend on the skill of the operator, the anaesthetic drugs administered, and the sequence of induction of anaesthesia. Induction of anaesthesia should take into account the pharmacokinetic and pharmacodynamic parameters of the drugs used. In particular, administration of neuromuscular blocking agents provides the best intubating conditions, regardless of the co-administered hypnotic drug.²

In a prospective multicentre study assessing the risk factors for maternal hypoxaemia, which included as secondary outcomes risk factors for difficult intubation during induction of general anaesthesia for non-elective Caesarean section, Bonnet and colleagues³ reported that use of propofol at induction of anaesthesia was protective for difficult or failed tracheal intubation in comparison with other hypnotic drugs. In other words, their results suggest that intubating conditions are better when co-administering propofol with succinylcholine than when co-administering thiopental with succinylcholine.

This result may have significant implications for clinical practice and provides support for arguments for replacing thiopental with propofol in obstetric general anaesthesia.⁴ In particular, a crucial point to consider is the definition of what a 'difficult intubation' is. Number of intubation attempts was used to define difficult intubation in the study by Bonnet and colleagues,³ a criterion that is dependent in part on the skill of the operator and the anatomy of the patient. The use of a standardised qualitative scoring system, such as that proposed by the consensus conference of good clinical research practice

in pharmacodynamic studies of neuromuscular blocking agents, would have been more appropriate to assess intubating conditions as the criteria used in this scale are independent of the morphological characteristics of patients and allow reliable comparison of intubating conditions provided by various general anaesthesia induction regimens.^{2,5,6} Other points to consider are co-administration of opioids and doses and timing of administration of the hypnotic and neuromuscular blocking drugs, which can also affect intubating conditions. Beyond these methodological issues that prevent any definitive conclusion regarding intubating conditions when using propofol vs thiopental co-administered with succinylcholine, the underlying question of the place of thiopental in both obstetric and non-obstetric anaesthesia remains.

Although thiopental was used in almost three quarters of the cases in the study by Bonnet and colleagues,³ its use in obstetric anaesthesia has been decreasing for 20 yr in the UK,⁷ creating a vicious cycle whereby decreased use leads to decreased experience of trainees and junior anaesthetists with thiopental, which in turn results in decreased use. Previous reports of thiopental over- or under-dosage and of more frequent accidental awareness when using thiopental compared with other drugs illustrate the unfamiliarity of anaesthetists with this drug, begging the question of whether we should teach our trainees better or give up the use of thiopental in anaesthesia.⁴

The current coronavirus disease 2019 pandemic has led to worldwide drug shortages, particularly of propofol and neuromuscular blocking agents. This has required defining strategies to spare propofol,⁸ including prioritising regional anaesthesia whenever possible or use of other hypnotic drugs. We decided to use thiopental as a first-line hypnotic in our unit for induction of obstetric general anaesthesia and emergency non-obstetric general anaesthesia, and for elective non-obstetric surgery of more than 60 min requiring general

anaesthesia with muscle paralysis and inhaled maintenance of anaesthesia. This strategy led to reduced propofol consumption and greater thiopental use, leading to greater familiarity with its use. This change in practice was possible because more experienced anaesthetists were able to teach junior anaesthetists about the use of thiopental. Thus, the current crisis allowed anaesthetists to (re)discover thiopental and its interesting properties: reliable hypnotic effect, short induction time, cardiostability, and slow recovery minimising awareness during induction of anaesthesia.

Ultimately, the question about the choice of hypnotic drug in modern anaesthetic practice should be: 'What is, for a given patient and intervention, the benefit/risk ratio of using a particular hypnotic drug for induction or maintenance of anaesthesia?', which takes into account both patient and surgery characteristics and cost of the drugs, whilst considering maintenance of sufficient skill for the use of various hypnotic drugs in anaesthesia. Propofol has some advantages over thiopental: it provides good intubating conditions without muscular relaxation and can be used for maintenance of anaesthesia without slowing recovery. But, in clinical practice, these characteristics of propofol are not essential or utilised for all patients. Another issue is the increased risk of medication error when using thiopental rather than propofol.⁴ Medication errors are not infrequent in anaesthesia and involve several categories of drugs.⁹ Reintroducing thiopental in the operating theatre could provide an opportunity to strengthen education and teaching focusing on drug preparation, labelling, and administration, contributing to improve practice and increase safety.¹⁰

The time to remove thiopental from anaesthetic practice, especially for Caesarean section, has not yet arrived. One must wonder whether it is desirable or beneficial that new generations of anaesthetists have become dependent on a single i.v. hypnotic drug for induction of anaesthesia.

Declarations of interest

The authors declare that they have no conflicts of interest.

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The superficial femoral artery: a novel site for arterial access

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