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The practice and knowledge of low flow anaesthesia in a department of anaesthesiology

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Abstract

Background

Low flow anaesthesia has been described and used since the early days of anaesthesia practise. The aim of this study was to describe the practice and knowledge of low flow anaesthesia in an academic department of anaesthesiology.

Methods

A cross-sectional research design was followed using convenience sampling and a self-administered questionnaire. The study population consisted of anaesthetists working in the Department of Anaesthesiology at the University of the Witwatersrand

Results

Of the 142 questionnaires distributed, 140 (98.6%) were returned. The overall mean (SD) knowledge score achieved was 56.3% (13.9%), with juniors achieving 54.3% (14.1%) and seniors 59.9% (12.8%) (p=0.022). Of the anaesthetists, 132 (94.3%) routinely practised low flow anaesthesia and 117 (83.6%) used it in paediatric patients. For induction, 125 (89.3%) anaesthetists used a fresh gas flow rate of 6 – 8 l/minute, 130 (92.9%) reduced the flow rate within ≤ 5 minutes after induction and 87 (62.1%) did this in a stepwise fashion. During maintenance, a flow rate of ≤2 l/minute was used by 139 (99.3%) and the same number used

air as the carrier gas and 92 (65.7%) reported sevoflurane as the ideal anaesthetic inhalation agent. For emergence, a fresh gas flow rate of 6 – 8 l/minute was used by 115 (82.2%) anaesthetists. The automated system was reported as difficult to use by 107 (76.4%) anaesthetists. The comparisons between the fresh gas flow rate and oxygen concentration used ($p=0.510$), professional designation and use of low flow anaesthesia ($p=0.259$) and professional designation and time to decrease flow rate ($p=0.745$) were not significantly different.

Conclusion

Low flow anaesthesia is routinely practised in the department; however, knowledge was only fair. The practice of low flow anaesthesia was generally in keeping with that suggested in the literature. The majority of the anaesthetists experienced using automated low flow anaesthesia as challenging.