Perioperative Blood Pressures: Continued Care and Caution

K Yusoff, FACC

Faculty of Medicine, Universiti Teknologi MARA, 20th Floor S & T Tower 1, Jalan Bijak, Shah Alam, 40450 Selangor

Getting through major surgeries safely and timely with success and minimal complications is one of the great achievements of modern medicine. As the surgical techniques and the organs and systems involved become more varied, there are a number of important issues which determine the success of surgery. But one overriding theme is cardiovascular stability during and immediately after surgery[1].

Over the years, there have been various initiatives to address this issue. A number of learned bodies had waded in and proposed various clinical practice guidelines[2,3] and expert opinions[4] had been published to help the practicing doctors to improve surgical outcomes. Stroke, myocardial ischaemia possibly leading to myocardial infarction, myocardial dysfunction and death, renal function and sepsis are important complications of surgical intervention. Identification of high risk patients helps refine surgical approach and practice. Apart from age, diabetes, renal impairment, myocardial ischaemia, myocardial dysfunction and cardiac arrhythmias, hypertension increases surgical risks. This group of hypertensive patients is important because the incidence and prevalence of hypertension in most communities around the world are not decreasing[5,6]; if at all, increasing in some communities especially in developing countries such as Malaysia[7]. Hypertension does not only render the patient high risk but managing the blood pressure during surgical intervention for cardiac or non-cardiac surgeries are in itself a challenge. Fluctuations in blood pressure during surgery, both hypotension and hypertension, especially when rapid, may be detrimental to the clinical outcome and thus need be immediately identified and corrected, or preferably predicted and avoided.

In this issue of the Journal, Poh *et al*.[8] report on their relatively modest study comparing the peri-operative blood pressure profiles of hypertensive and non-hypertensive adult patients undergoing surgery. The patients underwent urological, gynaecological and general surgeries. The choice of anaesthesia was not uniform or predetermined (it was 'left to the anaesthetist'). Be it their choice, the type of anaesthetic agents used for both anaesthetic technique, should have been disclosed as they may have different effects on the haemodynamics and specific organs during surgery[9-12]. Their protocol of measuring the blood pressures pre- and intraoperative in the general anaesthetic group was meticulous; but the timings were not matched with the spinal anaesthetic group. Unfortunately the blood pressures taken post-operatively in both groups were not standardized. More patients (89 to 39; the acceptance of the ratio was not justified) had general anaesthesia than spinal anaesthesia. The authors did not explain why this was the case but most probably the type of operation was determinative. For a study comparing anaesthetic techniques (rather than type of surgical operation), this is quite serious. These and other scenarios would confer formidable confounders to the study. Nonetheless, the investigators found that anaesthetic technique and the pre-operative blood pressure had an influence on the haemostatic stability during operation. Given the marked increase in blood pressures on arrival to the Operating Theatre among women, elderly and hypertensive patients, it could also be surmised that pre-medication in these groups of patients was suboptimal. The authors should have also indicated whether the study protocol had received approval from the institution's Ethics Committee as although it was proclaimed as an 'observational study', it was possible that the focus on measuring the blood pressures could have diverted the attention of the attending doctors from optimal care of the patient during the critical minutes of the surgeries.

Not withstanding the above comments on their study, Poh *et al* need be commended for undertaking this study thus highlighting that there are yet opportunities for improvement in the care of patients undergoing surgery. Although their study was not large and conducted at a single centre, it can be safely assumed that the practice may not be much better off in other hospitals as the Kuala Lumpur Hospital is the main referral centre for the country. Thus, this study may serve as a wake up call for a renewed and vigorous effort to encourage improvement in the care of surgical patients throughout the country. Measures should also be taken to audit more closely our practice of medicine, surgery is no exception. At the same time, studies addressing these pressing issues need further refinement such that definitive conclusions can be obtained.

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Corresponding Author: Khalid Yusoff, Faculty of Medicine, Universiti Teknologi MARA, 20th Floor S & T Tower 1, Jalan Bijak, Shah Alam, 40450 Selangor

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