Statins and sepsis

Editor—We congratulate Gao and colleagues on the timely review of the place of statin therapy in sepsis. We agree that further prospective clinical research is required to evaluate the potential benefits and limitations of statin use in patients with sepsis and that must specifically address both current statin users and patients not taking statin therapy.

Stopping established statin therapy in patients with acute coronary disease, recent major vascular surgery, or recent stroke has been suggested to be associated with worse outcomes. This has not been specifically assessed in patients with sepsis, although a retrospective study in patients with bacteraemia showed continuing statin use after bacteraemia was associated with significantly reduced mortality. These findings suggest that stopping concurrent statin therapy in sepsis (as recommended by current prescribing guidelines) may be associated with increased mortality. These findings require further evaluation in an appropriate prospective randomized trial.

Although the available evidence suggests that the potential for statins as adjuvant therapy in sepsis should be tested, we believe that an international multicentre trial with mortality as an endpoint would be premature. Preliminary data on absorption, pharmacokinetics, physiological effects, and possible adverse effects in critically ill patients with sepsis are required.

With the support of the Australian and New Zealand Intensive Care (ANZIC) Clinical Trials Group and the ANZIC Research Centre, we have commenced an Australian National Health and Medical Research Council (NHMRC)-funded multicentre phase II trial in 2007. The STATInS trial (ACTRN 1260700028404) (www.anzctr.org.au/trial_view.aspx?ID=81692) is a phase II, randomized, placebo-controlled study of the safety, pharmacokinetics, and effect on inflammatory marker levels of atorvastatin in intensive care patients with severe sepsis. This trial is currently underway in more than 14 intensive care units in Australia and New Zealand and we hope the results will provide a platform to plan future trials examining mortality as an endpoint.

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A wireless remote controlled infusion pump for anaesthesia during magnetic resonance imaging

Editor—The use of ferromagnetic devices in magnetic resonance imaging (MRI) suites represents a life-threatening hazard for patients and healthcare providers. In the past, the lack of compatible infusion pumps has led to the use of conventional pumps, placed outside the MRI scanner with long tubing for drug delivery. These long infusion lines can be trapped in the closed door and cause false flow rates. The MRidium™ (Iradimed Corp, USA) is a new MRI-compatible infusion pump with a wireless

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remote control system. We report its use for propofol infusion in a 1.5 Tesla MRI environment.

Twenty critically ill and intubated patients undergoing MRI were sedated with propofol 1% using the MRidium™, placed 20 cm from the MRI scanner bore. After a bolus injection of 5 ml, the infusion rate was maintained at 15 ml h⁻¹. An additional bolus of 5 ml was used if the patient appeared agitated. The occlusion pressures of the pump were tested at 5 and 10 psi. The modifications were made via the remote system placed in the control room. The Maglife CTM (Schiller, USA) was used for patient monitoring (Fig. 1). All the patients were ventilated using the Parapac™ ventilator (Smiths Medical, UK). Additionally 20 anaesthetists and nurse anaesthetists rated their satisfaction of the device using a 10-point numeric scale (0, not satisfied, to 10, highly satisfied). The results yielded seven occlusion alarms at 5 psi and none at 10 psi. It was rated highly (satisfaction score >7) by 17/20 (85%) of users mainly because of its remote control whereas 12/20 (60%) considered the syringe adaptor as unstable.

We conclude that the MRidium™ remote controlled system is feasible for propofol infusion in patients undergoing MRI. However, the syringe adaptor needs further improvements.

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Fig 1 The MRidium™ infusion pump (A) with its wireless remote control (B) in the MRI suite. Upper panel: MRI scanning room; lower panel: control room. After connecting the patient to the cardiorespiratory monitor and the pump, the vital signs and drug infusion status are monitored outside the MRI scanning room through interactive screens. Each pump can accommodate two infusion lines both of which can be controlled by the same remote device. The main characteristics of this pump, as indicated by the manufacturers, are its operation by peristaltic mechanism, its rechargeable internal lithium battery (12 h duration at ≤125 ml h⁻¹) with separate AC charger and power supply (100–240 V), its flow rate capacity between 1 and 999 ml h⁻¹ and its ultrasonic bubble detector >100 ml. The wireless link between the pump and the remote has a maximum range of 30 m at 2.4 GHz.

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