Simulators for paramedic tracheal intubation

Practice in the operating theatre has traditionally been regarded as the ideal environment for tracheal intubation training. However, experience gained from short visits there can be unpredictable and frustrating. After initial lectures and training, paramedic students who were given 10 hours intubation practice in a patient simulator were compared with those who had accumulated 15 intubations in the operating theatre. There were no differences in their ability to intubate a further 15 operating room patients (*Acad Emerg Med* 2005; 12: 850–5).

Too much hands-off during standard resuscitation

Concern about traditional compression: ventilation ratios has focussed upon large amounts of hands-off time. Two classes of soon-to-graduate technician and paramedic students were observed performing cardiopulmonary resuscitation with compression: ventilation ratios ranging from 15:2 to 60:2. A ratio of 15:2 delivered only 60 compressions per minute and resulted in 26 seconds per minute without compressions. A ratio of 30:2 achieved almost 80 compressions per minute and only 16 seconds without compressions, whilst maintaining a minute volume around 2 litres (*Resuscitation* 2005; 65: 325–8).

Biphasic defibrillation for out-of-hospital shockable rhythms

There has been a trend away from monophasic defibrillators to biphasic ones. This Canadian prospective randomised controlled trial (*Resuscitation* 2005; 66:149–57) compared rectilinear biphasic shocks at increasing energy levels (120J, 150J, 200J) to monophasic damped sinusoidal shocks (200J, 300J, 360J) in out-of-hospital cardiac arrests. Conversion from ventricular fibrillation or pulseless ventricular tachycardia to an organised rhythm within five seconds of the first series of shocks occurred in 52% with biphasic compared to 34% with monophasic shocks. There was no increase in the return to spontaneous circulation or survival to discharge.

Prehospital chest drains

Are chest drains inserted at the scene by prehospital doctors more likely to get infected than those inserted in the cleaner environment of the emergency department? This study (*J Trauma* 2005; 59: 96–101) reports that in fact, the infection rate was slightly higher with drains inserted in hospital. The investigators did not look at other complications.

Communication within trauma teams

The make-up of a trauma team varies widely from a small squad who are used to working together to a jumble of on-call juniors who rarely meet outside the doctors mess. However the team is comprised, good communication is vital to its success. Studying verbal communication during 74 major trauma resuscitations by digital video and audio recording, Dutch researchers found that communication was audible in only 56% of cases during the primary survey, and understandable in a mere 44% (*Injury* 2005; 36: 905–11). Developing formalised communication feedback systems such as those used in aviation may help to optimise trauma care.

Hyperglycaemia

Hyperglycaemia has previously been shown to be an independent predictor of mortality in acute coronary syndromes and acute strokes. The same finding has been shown to be true for trauma patients being admitted to the intensive care unit (*J Trauma* 2005; 59: 80–3). In a separate study, researchers have discovered an association between hyperglycaemia and the risk of symptomatic vasospasm after subarachnoid haemorrhage (*Crit Care Med* 2005; 33: 1603–8). Further study will demonstrate whether early commencement of intensive insulin therapy changes outcomes.

Early stroke risk after TIA

Early access clinics to assess risk factors and institute secondary prevention in patients presenting with transient ischaemic attacks are now widespread. In fact, demand for the clinics often exceeds capacity. An Oxfordshire team have derived a scoring system to identify and prioritise those patients most at risk of stroke within seven days (*Lancet* 2005; 366: 29–35).

Edited by Mark Jadav and Jonathan Wyatt

Communication with parents

Sophia is only too aware that the spoken word is sometimes simply not enough. Patients and their relatives can find it difficult to retain information given to them verbally. Researchers in Israel report that understanding of treatment instructions can be significantly improved by giving parents disease-specific information sheets when discharging children from the paediatric emergency department (*European Journal of Emergency Medicine* 2005; 12:159–62).

Admission hypothermia associated with increased mortality in trauma patients

Following recent evidence suggesting protective effects of hypothermia following ventricular fibrillation, its potential role in the management of other severely ill patients is being investigated. A retrospective analysis of 1921 hypothermic patients from a US trauma registry adjusted mortality for age, severity and mechanism of injury and route of temperature measurement (*Crit Care Med* 2005; 33:1296–1301). The researchers found that admission hypothermia was independently associated with increased mortality. It seems unlikely that therapeutic hypothermia would be beneficial.

Tubigrip for metatarsal fractures

The lack of robust evidence for benefit of tubigrip in the management of certain lower limb injuries has been previously highlighted. Recently, some evidence has emerged in favour of tubigrip. In a randomised controlled trial (*Injury* 2005; 36: 832–5), results of treatment of minimally displaced traumatic fractures of the second to fifth metatarsals (excluding Jones fractures) using tubigrip compared favourably with those from the use of a below knee weight-bearing cast.

Buccal midazolam for childhood seizures

A prospective randomised controlled trial (*Lancet* 2005; 366: 205–10) suggests that buccal administration of midazolam is better and faster than rectal diazepam at controlling seizures. It stopped seizures within ten minutes in 65% compared to 41% with rectal diazepam. Fewer patients suffered further seizures.