Highlights from this issue

doi:10.1136/emermed-2015-205511

Ellen J Weber, *Editor in Chief*

Even if one does not work in a "major trauma centre," we all see trauma. Victims of stabbings and bike accidents do not follow "trauma criteria" when they head for the nearest ED. Elderly patients with seemingly minor injuries are brought to a local hospital, only to discover that there are 4 rib fractures, a pulmonary contusion and a subdural haematoma.

2015 marks the silver anniversary of UK's Trauma Audit Research Network (TARN). For those of you not living in the UK, TARN is a national registry that collects prospectively entered data on the epidemiology, treatment and outcomes from major trauma. TARN serves two major functions: it publicly reports its findings and it allows trauma researchers to use its large, prospectively collected data set to conduct research. Our first editorial, by Fiona Lecky, TARN's research director, describes the humble birth, development and accomplishments of TARN over the past 25 years. In an accompanying commentary, Dr Karim Brohi, clinical lead for London Major Trauma System, takes the opportunity to pause to consider the challenges created by the growth of TARN from a local audit tool to both a national quality assurance program and a research enterprise.

To celebrate 25 years of TARN, this issue's research and reviews are centred on the theme of trauma. There are articles from TARN, which illustrate the value of a large, prospectively collected data set. We also include several intriguing articles from France (on telemedicine in head injury), and South Africa, on the role of interpersonal violence in trauma care. Two articles—one on c-spine immobilisation and the other a review of traumatic cardiac arrest—will make you reconsider what you've always known.

The changing face of trauma

Using data from the TARN database, Kehoe and colleagues describe how the mechanisms and victims of major trauma have been changing over the past 25 years. Road traffic accidents are down; falls are up. Major trauma patients are increasingly elderly. This could be a matter of better data collection as a result of TARN, and improved detection with the rising use of CT. In either case, the data not only confirm what many of us are seeing, but prompt consideration of whether our systems are adapting as they should.

Editor's choice: Do anti-coagulated trauma patients have worse outcomes?

It is estimated that 1% of the UK population is anticoagulated, and the prevalence rises with age. A study in Japan showed that about 25% of patients over 80 were on anti-thrombotic therapy. Warfarin remains the most commonly prescribed anti-coagulant, and whether trauma patients on warfarin do worse is controversial. An RCT is impossible of course; but even with multivariate analysis, it is difficult to account for the substantial burden of comorbidity in the patients on warfarin. In this carefully conducted observational study using the TARN database, Battle *et al* used a matched case-control design to compare the outcomes of trauma patients who were receiving warfarin pre-injury and those who weren't. The result: warfarin is indeed an independent risk factor for mortality in trauma patients.

The trauma burden of interpersonal violence: a preventable disease

In this descriptive study of a small emergency department in KwaZulu-Natal, South Africa, Bola and colleagues found 41% of surgical admissions were due to trauma, and interpersonal violence accounted for more than a third of this trauma burden. Community assault, not uncommon in the rural areas of this region, was responsible for 14% of traumas and its victims spend longer times in the resuscitation areas. Victims of interpersonal violence stay an average of 9.8 days and require significant amounts of blood (a scarce resource), and the use of imaging and theatre time, a clear additional burden to a health care system that can least afford it.

Traumatic cardiac arrest—time for a paradigm shift?

Most of us were taught that traumatic cardiac arrest had a dismal outcome. However, that may be because we were applying the wrong therapy. In this review of new evidence on traumatic cardiac arrest, Captain Surgeon Jason Smith explains that TCA may really be a low-flow state, for which traditional CPR will not work. A new approach that focuses on stopping haemorrhage and aggressive resuscitation (preferably blood) appears to have substantial promise, as evidenced by the military experience.

So, is there more to be done to control haemorrhage?

Resuscitative endovascular balloon occlusion of the aorta (REBOA) has the potential to bridge patients to definitive haemostasis in patients with noncompressible torso haemorrhage. However its potential for trauma patients is unknown. Barnard and colleagues used the TARN database to determine the number of trauma patients in 2012–13 who might have benefited from the intervention. Out of 72000 patients, 397 were identified. They had a median ISS of 32 and, coincidentally, a mortality of 32%. The authors point out that although the numbers are small, the patients are, without REBOA, quite resource intensive and are largely seen at major trauma centers, making it potentially worthwhile to evaluate the use of REBOA at these hospitals.

Primum non nocere…the growing evidence for self-extrication

Dixon *et al* placed biomechanical sensors on paramedic volunteers and studied them with infrared motion analysis when being extricated from a test crash vehicle. Compared with equipment-assisted extrication, self-extrication showed the least movement. The authors suggest that it may be time for a "spinal rule-in" policy in for stable patients, where self-extrication is the first option if the paramedics have carefully assessed the victim.

Provenance and peer review Commissioned, internally peer reviewed.