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# Highlights from this issue

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Ellen J Weber, *Editor in Chief*

“*This will only hurt for a second.*” “*You’re going to feel a little mosquito bite.*” Doctors are famous for understating the pain of procedures. But there’s no way round the fact that procedures hurt, and methods to reduce the pain themselves inflict “discomfort”. In this month’s issue we report on two randomised controlled studies of techniques to reduce pain prior to a procedure. Saghi and co-investigators in Tehran compared lidocaine infiltration using a needleless jet injector vs. a 25 gauge needle in 53 patients requiring suturing of small lacerations. The jet injector technique was significantly less painful, and anaesthesia was equivalent, although it took a few minutes longer to achieve anaesthesia. This delay may explain why some prior studies found the jet injector less effective in producing anaesthesia.

In 2009, a Cochrane review concluded that haematoma blocks were inferior to IV anaesthesia for the reduction of wrist fractures. However, that was largely before ultrasound became a familiar bedside tool in the ED. Fathi *et al* take another look at the question. 143 patients with distal radius fracture were randomised to either IV anaesthesia with midazolam and fentanyl, or an ultrasound-guided haematoma block, prior to manipulation. Pain was similar during manipulation and at 5 and 15 minutes after the procedure. There were several medication reactions in the midazolam/fentanyl group, but none noted in the haematoma block group, and those receiving the block, were discharged on average 30 minutes faster. Perhaps we have not heard the last word on this.

Keeping with the theme of “everything old is new again”, intraosseous (IO) access was used in World War II but fell out of favour with the advent of better IV catheters. IO was “discovered” (again) in the 1980’s, primarily for pediatric resuscitation. IO gradually gained favour as the second line for access in adult resuscitations. But can IO be used to deliver drugs for rapid

sequence intubation, where timing of medications is critical? A few case reports have suggested they can, as do the pharmacokinetics indicating equivalent speed to the central circulation compared with IV. In this month’s **Reader’s Choice**, Barnard and colleagues report on 34 trauma patients in Afghanistan, 25 treated out of hospital who received RSI using IO. Most of the IO’s were placed in the humeral head. First pass success rate was 97.1%, a figure similar to most published studies of RSI with IV access, and 91% had a McCormack-Lehane Grade I view. There was one failure—a sternal IO where ketamine leaked around a traumatic wound. A second study on IO, also from the military, by Lewis and Wright reports experience with 1000 uses of IO lines in trauma patients Afghanistan, administering blood, fluids and 32 different medications, with a low complication rate, mostly due to device failure.

The **Editor’s Choice** also picks up from a study published in the ancient past—1998. Back then Brown and colleagues showed ED patients with CHF had slightly lower end-tidal (ET) CO<sub>2</sub>’s than those with asthma or COPD. Hunter and colleagues from the US reviewed a cohort of 106 patients with either CHF or COPD who had ETCO<sub>2</sub> measured in the prehospital setting. The ETCO<sub>2</sub> had an area under the curve of 0.70 for predicting CHF; a cutoff of ETCO<sub>2</sub><40 had a sensitivity of 93% for CHF. It’s a small sample and the discrimination is certainly not perfect, but I liked it because its a very simple, non invasive measurement which, perhaps combined with history and physical exam (and, the authors suggest, ultrasound) can help make the diagnosis. And, as an editor, not to mention someone practicing in 1998, its nice to know that old research still has an impact!

AEDs save lives and for this reason they are in shopping malls, airports, train stations and casinos. But can (and will) the untrained bystander use them? Maes and co-investigators in Belgium explored the

question. 85 untrained volunteers, many of whom thought they could not deliver a shock by AED, were given the instructions: *‘Imagine that you are alone in the room next door with someone who has just collapsed. This person is unresponsive and appears to have had a cardiac arrest. In the room, you will find some materials to make the situation more realistic. Do your best to quickly help the victim and remember that every second matters.’* The volunteer enters a room equipped with a phone, an AED and manikin and their actions videotaped. What happened? See page 481.

Emergency physicians practice in a chaotic environment, and yet somehow seem to be able to focus on the job at hand. But do they really? And at what cost? Folscher and colleagues asked 41 emergency doctors to take a 30-minute test with 6 medical questions in two environments: one with ambient noise (mimicking a quiet work environment and the other 80–85dB(A), the highest level recommended for the work place. The physicians performed equally well on the test in the two environments, and they completed the tests *faster* in the noisier environment. However, they experienced significantly higher cognitive demands in the noisy environment and many reported negative subjective symptoms, 48% of which were rated severe. So, on your next shift, perhaps ask everyone to take it down a notch.

And introducing... the Image Challenge! In the past, *EMJ* published instructive photos of clinical findings, xrays and CTs. But that was just too easy. So we now present the case and the image, and you have to determine the correct answer. (Don’t worry—the answer and explanation are available in the same issue). Want more? Try the online version (called the IChallenge) at [emj.bmj.com](http://emj.bmj.com), which changes every two weeks.

