


A fresh look at Tasers

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 The Canadian Medical Association Journal waded into the debate over the police use of Tasers and other electrical weapons last Thursday, releasing a new study on their cardiac effects along with an unusual accompanying editorial.

The study, conducted by Toronto cardiologist Kumaraswamy Nanthakumar and others, is basically concerned with the question we have all been asking ourselves since we saw the footage of Robert Dziekanski dying in the Vancouver airport last year: If stun guns are safe for the human heart, as their manufacturers say they are, why are so many people dying immediately after getting tased?

In theory, Dr. Nanthakumar's paper observes, electro-weapons do not deliver enough energy to affect cardiac tissue; the devices are designed to act on skeletal muscle, which reacts to, and goes rigid from, a relatively small signal. In prior laboratory trials of humans and animals being tased, however, there have been hints that the heart may be influenced by the electrical pulse, despite the use of "conservative device settings and experimental designs that often do not reflect a clinically relevant or 'worst case' scenario."

In order to make observations under conditions as close to real ones as possible, Dr. Nanthakumar and his team had police officers come into the lab to stun some anaesthetized pigs with two different models of field-ready Tasers. What they found was that the pigs' hearts did not react when they were tased in the abdomen, but when the barbs were placed on either side of the heart, an electrical pulse provoked a response in the myocardium nearly every time.

When the researchers induced an artificial state of excitement in the pigs by injecting them with adrenaline, their hearts displayed even more apparent sensitivity. "Of 16 discharges [into the adrenalized pigs], there were 13 episodes of myocardial stimulation, of which one induced ventricular fibrillation and one caused ventricular tachycardia."

Needless to say, this leaves little room for confidence that Tasers cannot, in principle, affect and impede heart function -- assuming anyone had any such confidence left after watching the Dziekanski video.

It also suggests that the police may, at the bare minimum, need to rethink their doctrine concerning delirious -- and potentially adrenaline-soaked -- suspects such as Mr. Dziekanski. As Dr. Matthew Stanbrook documents in his editorial accompanying the Nanthakumar study, the RCMP operating manual tells officers how to spot the signs of "excited delirium," which is defined as "a medical emergency which may be brought on by stimulant use, psychiatric illness or a combination of both." Far from suggesting that electroshock weapons should never be used on such agitated people, however, the manual actually advises that the Taser "may be the most effective response to establish control" of a delirious person. As Dr. Stanbrook writes, it almost seems "that Tasers are being recommended as a treatment for a medical condition."

"We have some bad news for the manufacturer," he adds. "To be approved for use, medical devices must satisfy rigorous scientific standards and be subjected to clinical trials. This is to protect the public from unsafe medical devices. Fortunately for [manufacturer] TASER International, there are no similarly rigorous scientific standards mandated to protect the public from potentially unsafe law enforcement devices."

Dr. Stanbrook has a powerful point here. About 20 Canadians have died in conjunction with documented Taser-related incidents over the past six years; any medication that potentially caused that much sudden death would have long since set off warning bells at Health Canada.

Of course, even if it is one day proven that Tasers do occasionally kill people, it may well be the case that the device still saves more lives than it takes: In many instances, police use Tasers to subdue dangerous individuals who, in an age before electroshock weapons, would have been taken down with bullets. (The crazed individual who allegedly stabbed a married couple to death in Brampton, Ont., last week offers a textbook example.)

But at the very least, the new CMAJ report shows that the medical premise upon which such cost-benefit analysis has been based to date no longer seems entirely tenable. The burden of proving the safety of Tasers -- and doing so rigorously, rather than putting on meaningless displays wherein police volunteers take a short-duration burst in the back -- should therefore now shift onto the police forces that want to continue using them.