

of Cardiology and European Society of Cardiology criteria² their diagnosis would be reclassified as myocardial infarction. We therefore agree that it makes no sense to use CK or CK MB levels to "clarify" the results of troponin assays. It is likely that troponin will eventually replace CK MB as the gold standard for the diagnosis of myocardial infarction. However, because of persistence of circulating troponin for up to 14 days after an acute myocardial infarction, CK MB may remain the preferred marker for the diagnosis of reinfarction.

The limitations of the currently available troponin assays, such as limited diagnostic accuracy at low levels and not-infrequent analytical errors,³⁻⁵ reduce confidence in troponin as a perfect biomarker for myocardial injury. Furthermore, circulating cardiac troponin may be detectable in patients with conditions other than acute coronary syndromes.⁶⁻¹² Repeating the troponin measurement and electrocardiogram is often helpful in assessing the patient with a possible acute coronary syndrome and borderline troponin elevation.

Circulating cardiac troponin should be undetectable in healthy people. As Brian Gilfix correctly indicates, it is important that the clinician be aware of the locally measured reference value of the assay as well as the variability of the measurement at these low levels and not depend on the manufacturer's "normal" value.

Risk stratification of patients with acute coronary syndromes is facilitated by measuring the cardiac troponin level. Outcomes relate directly to both the level at presentation and the maximal level in the first 24 hours.¹³ High and low risk stratification by clinical criteria is unchanged by a finding of either borderline or clearly elevated troponin levels. However, patients stratified to an intermediate risk by clinical criteria are at high risk of adverse outcomes if they have high levels of troponin.

Cardiac troponin measurements have been an important advance in the diagnosis and risk stratification of acute coronary syndromes. However, limita-

tions of the currently available assays require clinicians to also carefully evaluate all of the clinical information.

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References

- Olatidoye AG, Wu AH, Feng YJ, Waters D. Prognostic role of troponin T versus troponin I in unstable angina pectoris for cardiac events with meta-analysis comparing published studies. *Am J Cardiol* 1998;81(12):1405-10.
- Myocardial infarction redefined: a consensus document of The Joint European Society of Cardiology/American College of Cardiology Committee for the redefinition of myocardial infarction. *J Am Coll Cardiol* 2000;36(3):959-69.
- Fitzmaurice TF, Brown C, Rifai N, Wu AH, Yeo KT. False increase of cardiac troponin I with heterophilic antibodies. *Clin Chem* 1998;44:2212-4.
- Onuska KD, Hill SA. Effect of rheumatoid factor on cardiac troponin I measurement using two commercial measurement systems. *Clin Chem* 2000;46(2):307-8.
- Krahn J, Parry DM, Leroux M, Dalton J. High percentage of false positive cardiac troponin I results in patients with rheumatoid factor. *Clin Biochem* 1999;32(6):477-80.
- Setsuta K, Seino Y, Takahashi N, Ogawa T, Sasaki K, Harada A, et al. Clinical significance of elevated levels of cardiac troponin T in patients with chronic heart failure. *Am J Cardiol* 1999;84(5):608-9.
- Lauer B, Niederau C, Kuhl U, Schannwell M, Pauschinger M, Strauer BE, et al. Cardiac troponin T in patients with clinically suspected myocarditis. *J Am Coll Cardiol* 1997;30(5):1354-9.
- Horowitz MB, Willet D, Keffer J. The use of cardiac troponin-I (cTnI) to determine the incidence of myocardial ischemia and injury in patients with aneurysmal and presumed aneurysmal subarachnoid hemorrhage. *Acta Neurochir (Wien)* 1998;140(1):87-93.
- Parekh N, Venkatesh B, Cross D, Leditschke A, Atherton J, Miles W, et al. Cardiac troponin I predicts myocardial dysfunction in aneurysmal subarachnoid hemorrhage. *J Am Coll Cardiol* 2000;36(4):1328-35.
- Luna C, Adie MA, Tessler I, Acherman R. Troponin I elevation after supraventricular tachycardia in a child with hypertrophic cardiomyopathy. *Pediatr Cardiol* 2001;22(2):147-9.
- Meyer T, Binder L, Hruska N, Luthe H, Buchwald AB. Cardiac troponin I elevation in acute pulmonary embolism is associated with right ventricular dysfunction. *J Am Coll Cardiol* 2000;36(5):1632-36.
- Giannitsis E, Muller-Bardorff M, Kurowski V, Weidtmann B, Wiegand U, Kampmann M, et al. Independent prognostic value of cardiac troponin T in patients with confirmed pulmonary embolism. *Circulation* 2000;102(2):211-7.

- Ohman EM, Armstrong PW, Christenson RH, Granger CB, Katus HA, Hamm CW, et al. Cardiac troponin T levels for risk stratification in acute myocardial ischemia. GUSTO IIA Investigators. *N Engl J Med* 1996;335(18):1333-41.

Cell phone regulation

It is difficult to understand why Emile Therien, President of the Canada Safety Council, is so vigorously opposed to cell phone regulation.¹ His objections appear to be based on 2 reports not published in peer-reviewed journals, to which he attaches the same weight as the report in the *New England Journal of Medicine*² that prompted *CMAJ's* editorial on the subject.³

Therien implies that the report by Claire Laberge-Nadeau⁴ reached conclusions that "contrast" with those in the *CMAJ* editorial and that it is more credible than the *New England Journal of Medicine* report because it had a larger sample. Apart from the fact that more subjects do not necessarily mean better science, Therien provides no data from the Laberge-Nadeau study to help readers draw their own conclusions. Instead, taking a page out of the National Rifle Association's book, Therien concludes that it is not the phone that is the problem, but the user.

The other report he uses to support his position showed that over 10% of crashes caused by distracted drivers involved the use of cell phones.⁵ Therien glosses over this startling finding by focusing on the 11.4% of crashes in which the driver was distracted by adjusting a radio or cassette and the 30% that involved distraction by "an outside person, object or event." Unfortunately, we cannot regulate all possible sources of distraction, but we can do something about a device whose lethal effects may reach epidemic proportions when it becomes as ubiquitous as radios or cassette players.

This is not the first time the Canada Safety Council has taken a position that runs contrary to the evidence; it also did so when it opposed changing the permissible blood alcohol limit for drivers from 0.08 to 0.05. One cannot help, therefore, but wonder what would moti-

vate the Canada Safety Council to take such irresponsible positions. Canadians need to know more about this organization, but its Web site gives no clues as to how Therien decides on the positions he takes, whether he is counselled by colleagues and, if so, what their competence is to judge scientific issues. A request for such information yielded a large packet of press releases and — the coup de grâce — comic books featuring Elmer the Safety Elephant (another unproven safety measure).

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References

1. Therien EJ. The accidental cell phone user [letter]. *CMAJ* 2001;165(4):397.
2. Redelmeier DA, Tibshirani RJ. Association between cellular-telephone calls and motor vehicle collisions. *N Engl J Med* 1997;336(7):453-8.
3. Driven to distraction: cellular phones and traffic accidents [editorial]. *CMAJ* 2001;164(11):1557.
4. Laberge-Nadeau C. *Le risque d'accidents de la route en relation avec l'utilisation d'un téléphone mobile*. Montreal: Laboratoire sur la sécurité des transports, Université de Montréal; 2001.
5. University of North Carolina Highway Safety Research Center. *The role of driver distraction in traffic crashes*. Washington (DC): AAA Foundation for Traffic Safety; 2001.

[The author responds:]

Barry Pless has criticized the Canada Safety Council on several fronts, apparently unaware of the strong body of evidence supporting our stance in each case. I encourage readers to visit our Web site (www.safety-council.org) to see the breadth of safety issues that we address.

It is true that cell phones can be a dangerous distraction. However, the 1997 study¹ had serious shortcomings. New research is available from organizations with recognized expertise in traffic safety; the methodology used in this research includes large, representative samples and control groups studied over significant periods of time.² Current findings should not be dismissed if we truly wish to improve safety on our roads.

The Canada Safety Council fully recognizes that laws and regulations

and their enforcement are critical to the prevention of deaths and injuries. The Hazardous Products Act, labour legislation, laws against impaired driving, laws making seat-belt use mandatory and many other regulations have played a major role in improving safety. Perhaps because of the success of these laws, more and stricter rules are demanded in the name of safety. However, it is counterproductive to have too many laws on the books if they cannot be enforced.

Before calling for new laws, it is important to consider the following questions. First, can the problem be addressed through existing laws? In the case of driver distractions and impaired driving, laws are already in place. Second, can the proposed legislation realistically be enforced? Resources for the enforcement of traffic laws, including those concerning impaired driving, are generally inadequate. Third, can non-regulatory approaches such as public education be used to address the issue?

I wrote my original letter to *CMAJ* not as an attack, but because I feel that it is vital that the members of the medical community and the safety movement work together to make Canada a safer place.³

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References

1. Redelmeier DA, Tibshirani RJ. Association between cellular-telephone calls and motor vehicle collisions. *N Engl J Med* 1997;336(7):453-8.
2. University of North Carolina Highway Safety Research Center. *The role of driver distraction in traffic crashes*. Washington (DC): AAA Foundation for Traffic Safety; 2001.
3. Therien EJ. The accidental cell phone user [letter]. *CMAJ* 2001;165(4):397.

Neck pain

I enjoyed Ian Tsang's concise and useful lesson on neck pain.¹ I was especially interested in Tsang's comment that consultation with a specialist may be necessary for patients with disabling or progressive neurologic problems.

With or without neurologic deficits, patients often consider their neck condition to be disabling and progressive, so they and their family physicians are understandably anxious for a specialist's opinion. As a result, neurosurgeons are inundated with referrals for patients with neck (and back) problems, most of which do not involve the cervical nerve roots or the spinal cord and would not be appropriately treated by surgery.

Compounding this situation in Alberta is that many patients with chronic spinal pain turn to private MRI clinics, not uncommonly with their family physician's encouragement. A positive scan might fast-track a patient to a surgeon. However, few cervical spine MRI scans in middle-aged or older people are actually normal, and the reports often contain disturbing descriptions of degenerative changes, including bulging disks, osteophytes and "foraminal stenosis." It is difficult to convince patients without neurological involvement that these changes are of quite uncertain significance.

If I can take the liberty of speaking for my specialty, our plea to family physicians would be to investigate and refer patients to surgeons judiciously. For example, cervical radiculopathies may be associated with a knot of pain in the parascapular region but are always associated with more pain in the limb than in the neck; upon careful investigation they are usually found to be associated with a neurologic deficit in the form of weakness, a depressed stretch reflex, dermatomal numbness or some combination of these. When these symptoms and signs persist for over a month without significant improvement, further investigations are appropriate. An almost identical strategy can be recommended for sciatica.² If imaging demonstrates pathology that correlates with the clinical picture, referral to a surgeon should follow. One should also be on the lookout for red flags that should prompt more urgent investigation: fever, severe pain at rest, a history of cancer or risk factors for bacteremia, and signs of spinal cord compression. Overinvestigation and overreferral of patients with neck (and back) pain im-