Clinical shorts

Effects of intensive glucose lowering on cardiovascular outcomes

Intensive therapy to lower glucose is associated with higher mortality for patients with type 2 diabetes at high risk of cardiovascular disease. Over 10 000 patients with suboptimal glucose control and previous cardiovascular disease or other cardiovascular risk factors were randomized to receive intensive therapy with a target level of glycated hemoglobin below 6% or standard therapy.

The trial was terminated at just over three and a half years because of higher mortality in the group receiving intensive therapy; these participants were switched to standard care. At five years, the group who had received intensive therapy still had a higher rate of death than the control group (hazard ratio [HR] 1.19, 95% confidence interval [CI] 1.03–1.38, $p < 0.02$).

Although intensive therapy was associated with a lower rate of nonfatal myocardial infarction (HR 0.82, 95% CI 0.70–0.96) at five years, there was no difference in overall cardiovascular events between the two groups. By the end of the study, the median level of glycated hemoglobin was 7.2% in the treatment group and and 7.6% in the control groups. Rates of adverse events, including severe hypoglycemia, were similar. The reasons for increased mortality in the group originally receiving intensive therapy are unclear. See *N Engl J Med* 2011;364:818-28.

Does emotional distress affect success of fertility treatment?

No. Anxiety or depression does not appear to affect the likelihood of pregnancy in women undergoing a cycle of fertility treatment, such as in vitro fertilization or intracytoplasmic sperm injection. Although many infertile women may believe that emotional distress caused by infertility, its treatment or other life events may compromise their chances of becoming pregnant, a meta-analysis of 14 studies with 3583 infertile women undergoing a cycle of fertility treatment showed otherwise. The overall effect size of emotional distress on the likelihood of pregnancy after one cycle of treatment was nonsignificant (–0.04, 95% CI –0.11–0.03). There was nonsignificant heterogeneity between studies. Although only six studies were rated as high quality, analysis of the studies by quality did not show any difference in size of the effect. There was some evidence of publication bias, but adjusting for this only shifted the size of the effect closer to zero. The studies were from 10 countries, strengthening the generalizability of the results. See *BMJ* 2011; 342:d223 doi:10.1136/bmj.d223.

Strategies for using furosemide in acute heart failure

Furosemide administered by bolus or infusion and at high or low doses appears to work equally well in patients with acute decompensated heart failure. In a prospective, randomized, double-blind controlled trial involving 26 sites in Canada and the United States, 308 patients with a history of chronic heart failure and oral loop diuretic use were assigned to receive furosemide intravenously by bolus every 12 hours or by continuous infusion, and at a low dose (equivalent to the patient's previous oral dose) or a high dose (two and a half times the oral dose) for treatment of acute decompensated heart failure. Doses could be adjusted at 48 hours on the basis of the clinical response. At 72 hours, there was no significant difference in global assessment by the patients or creatinine level (the primary outcomes) when the diuretic strategies were compared. The groups receiving bolus or continuous infusion had similar findings for a broad range of secondary end points evaluating safety and efficacy over 60 days. Although patients assigned to the high-dose strategy had greater relief of dyspnea and more fluid loss compared with those assigned to the low-dose group, there was transient worsening of renal function during treatment. See *N Engl J Med* 2011;364:797-805.

Predicting ability to walk after traumatic spinal cord injury

A simple prediction rule, based on age and four clinical neurologic tests, can assess a patient's chance of walking independently following a traumatic spinal cord injury. After such an injury, a reliable prognosis is important for counselling patients and their families as well as for developing a personalized rehabilitation program. In a longitudinal cohort study in 19 countries, 1442 adults with acute traumatic spinal cord injury were followed over a one-year period. Nearly 500 patients were included in the derivation of a prediction rule based on a combination of age (< 65 years v. ≥ 65 years), motor scores of the quadriceps femoris (L3) and gastrocsoleus (S1) muscles, and sensation of light touch in dermatomes L3 and S1. When determined within 15 days after injury, the rule (with a score range from –10 to 40) was able to discriminate between those who were able to walk independently, walk with assistance or were unable to walk at six months to one year (area under receiver-operating-characteristics curve 0.956, 95% CI 0.936–0.976, $p < 0.0001$) (see Appendix 1, available at www.cmaj.ca/cgi/content/full/cmaj.110406/DC1). The rule was validated with similar results in a group of 99 patients. See *Lancet* 2011 DOI:10.1016/S0140-6736(10)62276-3.

Diane Kelsall MD MEd
Deputy Editor, Clinical Practice
CMAJ

Correspondence to: Dr. Diane Kelsall, diane.kelsall@cmaj.ca

***CMAJ* 2011. DOI:10.1503/cmaj.110406**