

## LETTERS

### Response to: “Snowfall and myocardial infarction. What is the effect of barometric pressure?”

In a recent letter to *CMAJ*, Hernández-Garduño raised the possibility that barometric pressure contributes to the association between snowfall and myocardial infarction (MI).<sup>1</sup> We confirm that in sensitivity analyses, adjustment for barometric pressure (kPa) had no impact on the association between snowfall and MI.

Compared with 0 cm, 20 cm of snow was associated with an odds ratio (OR) of 1.15 for admission to hospital (95% confidence interval [CI] 1.09–1.21) and an OR of 1.30 for death (95% CI 1.20–1.40) the following day in men, with adjustment for splines for both barometric pressure and change in pressure. In addition, we found no association between barometric pressure and MI in models adjusted for snowfall and temperature.

We cannot be certain why previous studies found associations between barometric pressure and cardiovascular outcomes, but suboptimal study designs may have been used.<sup>2–4</sup> The studies were all

based on aggregate data, including means of daily morbidity rates<sup>2</sup> or daily incidence.<sup>3,4</sup> Ecologic analyses of aggregate data may be subject to bias and inadequate control for individual-level patient characteristics.<sup>5</sup> We encourage future research of the potential impact of barometric pressure and cardiovascular outcomes with more optimal study designs.

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