



Contents lists available at ScienceDirect

## European Journal of Internal Medicine

journal homepage: [www.elsevier.com/locate/ejim](http://www.elsevier.com/locate/ejim)

## Letters to the Editor

**Carbon monoxide poisoning and risk for ischemic stroke**

## Keywords:

Carbon monoxide  
Poisoning  
Cohort study

## To the Editor

As specialists in carbon monoxide (CO) poisoning, we noted with interest the paper in *European Journal of Internal Medicine* this year by Kao and co-workers examining the diagnosis of other diseases following an episode of CO poisoning [1]. It described a retrospective, population-based, cohort study utilizing the Taiwanese National Health Insurance Database. In essence, patients experiencing CO poisoning during a 13-year period were identified, matched to controls, and the database searched for subsequent new diagnoses that occurred in the CO-poisoned population in excess to those seen in the cohort. The paper reported an increased risk for ischemic stroke following CO poisoning.

We subsequently identified four more CO publications from Kao's group in other journals published in 2015, using the same research model and database [2–5]. One reported increased risk of thromboembolic disease following CO poisoning, one cardiac arrhythmia, one Parkinson disease, and one peripheral artery disease. All of the papers had similar formatting.

It seemed unusual that one would query the same database in the same way, find five conditions associated with CO poisoning and report them in five individual manuscripts. We expected that the findings would be combined in one paper. The senior author, Dr. Chia-Hung Kao, is the same on all papers but the primary authors are different, coming from institutional departments as diverse as Health Services Administration, Emergency Medicine, Hematology/Oncology, and Internal Medicine.

A PubMed search performed December 31, 2015 revealed that Dr. Kao published at least 151 papers in 2015 from the same database analysis, each describing the association of two different conditions. Examples of the associations include gall bladder polyp/stroke, irritable bowel syndrome/erectile dysfunction, neonatal urinary tract infection/childhood allergic rhinitis, COPD/dementia, and allergic rhinitis/intracranial hemorrhage. Kao served as senior author to sixty different primary authors in 2015, each of whom published from one to twelve

papers. The primary author's departmental affiliation was often unrelated to the organ system discussed.

This research appears to be templated and not hypothesis-driven. It seems unhelpful to the clinician trying to read the literature to have an investigator publish 150 manuscripts from one study model, each describing two conditions that were associated in an insurance database, often with no apparent connection. Across all of these CO association papers noted, we are wary of the data supporting these specific conclusions.

**Conflicts of interest**

The authors have no conflicts of interest to disclose.

**References**

- [1] Lin CW, Chen WK, Hung DZ, Chen YW, Lin CL, Sung FC, et al. Association between ischemic stroke and carbon monoxide poisoning: a population-based retrospective cohort analysis. *Eur J Intern Med* 2015. <http://dx.doi.org/10.1016/j.ejim.2015.11.025>.
- [2] Chung WS, Lin CL, Kao CH. Carbon monoxide poisoning and risk of deep vein thrombosis and pulmonary embolism: a nationwide retrospective cohort study. *J Epidemiol Community Health* 2015;69:557–62.
- [3] Lee FY, Chen WK, Lin CL, Kao CH. Carbon monoxide poisoning and subsequent risk of cardiovascular disease: a nationwide population-based cohort study. *Medicine* 2015; 94(10):1–8.
- [4] Lai CY, Chou MC, Lin CL, Kao CH. Increased risk of Parkinson disease in patients with carbon monoxide intoxication: a population-based cohort study. *Medicine* 2015; 94(19):1–6.
- [5] Chen YG, Lin TY, Dai MS, Lin CL, Hung Y, Huang WS, et al. Risk of peripheral artery disease in patients with carbon monoxide poisoning: a population-based retrospective cohort study. *Medicine* 2015;94(40):1–6.

Neil B. Hampson

Virginia Mason Medical Center, Seattle, WA, USA

Corresponding author at: Virginia Mason Medical Center H4-CHM, 1100 Ninth Avenue, Seattle, WA 98101, USA.

E-mail address: [neil.hampson@vmmc.org](mailto:neil.hampson@vmmc.org).

Lindell K. Weaver

Intermountain Health Care, Salt Lake City, UT, USA

E-mail address: [lindell.weaver@icare.org](mailto:lindell.weaver@icare.org).

2 January 2016

Available online xxx