

Asian physician pursuing graduate studies in a Canadian institution, and the online availability of the latest medical literature through my university's subscription has opened up a new world for me, helping me to improve the quality of my research and my understanding of the issues. I am already dreading the loss of this privilege when I return home.

Medical schools and research centres in developing countries often cannot pay for the high cost of online journal access, and subscriptions to print versions are limited. In many cases, researchers have access only to abstracts (through PubMed [www.ncbi.nlm.nih.gov/entrez/query.fcgi] and, more recently, Google Scholar [www.scholar.google.com]). It is difficult for residents on limited stipends to buy even single articles, which cost anywhere from US\$10 upward. Furthermore, Internet access is limited, and safe online banking and credit card use are not available. As a result, residents and scientists use outdated sources for their research, which is reflected in the final quality and scientific rigour of their work.

The initiatives promoting open access that have been undertaken by *CMAJ*, BioMed Central (www.biomedcentral.com/), SciDev.Net (www.scidev.net/) and the Public Library of Science journals, among others, are laudable. However, the practice of making authors pay for online publication of their articles, as described in the *CMAJ* editorial,¹ might dissuade researchers in developing countries from sharing their research results in international journals. Special discounts will need to be worked out, and journals will need to continue exploring innovative ways to support progress in open access and offset their costs.

CMAJ's experience has shown the advantages of an open-access policy.¹ I hope that the journal continues its leadership in promoting equal opportunities and access in the global medical community.

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Reference

1. Open access in medical publishing: trends and countertrends [editorial]. *CMAJ* 2005;172(2):149.

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DKA and thrombosis

Josephine Ho and associates¹ report an unfortunate case of a 6-year-old girl with diabetic ketoacidosis (DKA) and thromboembolic stroke. Although the authors do a credible job of describing the diverse causes of pediatric stroke and the controversies surrounding treatment of children, there was little emphasis on the danger of extreme hyperosmolar states and risks of thrombosis. More information about the initial presentation of the patient, with specific reference to the concentration of serum sodium and serum osmolarity, would have been helpful in determining her risks of thrombosis.

Diabetes is associated with a prothrombotic state through a number of mechanisms.² The mostly adult entity of hyperosmolar nonketotic coma has had various degrees of association with thrombosis,^{2,3} as has extreme hypernatremia in breast-feeding neonates.⁴ Recent evidence has also demonstrated that among children with DKA, there is a higher incidence of deep venous thrombosis with femoral central venous lines.^{5,6} Serum glucose and sodium concentrations and hence effective plasma osmolarity were significantly higher in those patients with blood clots.⁵

Although there is no direct evidence for its efficacy, our practice has been to use prophylactic anticoagulation in patients with DKA who are in a significant hyperosmolar state, as well as to eliminate the use of femoral catheters in patients with these risk factors. There is significant controversy surrounding the dose of anticoagulant therapy, specifically whether the efficacy of dosages for prophylaxis of deep venous thrombosis outweighs the risks associated with full systemic anticoagulation.⁷ As with most clinical issues, particularly in pediatric critical illness, this controversy lends itself well to a clinical trial in patients with extreme

hyperosmolar states, including those with DKA.

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4. van Amerongen RH, Moretta AC, Gaeta TJ. Severe hypernatremic dehydration and death in a breast-fed infant. *Pediatr Emerg Care* 2001;17(3):175-80.
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6. Gutierrez JA, Bagatell R, Samson MP, Theodorou AA, Berg RA. Femoral central venous catheter-associated deep venous thrombosis in children with diabetic ketoacidosis. *Crit Care Med* 2003;31(1):80-3.
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[Three of the authors respond:]

Jeff Burzynski raises an interesting point about the danger of the hyperosmolar state and risk of thrombosis. In the patient that we described (a 6-year-old girl with DKA and stroke),¹ the initial serum sodium level was 132 mmol/L and initial blood glucose, 43.4 mmol/L. The corrected sodium level was 144 mmol/L with a calculated serum osmolarity of 331 mOsm/L. We agree that patients with DKA have hyperosmolarity because of hyperglycemia and hypernatremic dehydration, and we¹ and others^{2,3} have suggested that the hyperosmolarity contributes to the prothrombotic tendency of children with DKA.

Worly and associates² described 3 patients aged 14–18 months with DKA and calculated serum osmolarity of 291–356 mOsm/L who experienced deep venous thrombosis associated

with central venous femoral catheters. Similarly, Gutierrez and colleagues³ described 4 patients 1 month to 3 years of age with serum osmolarity of 280–330 mOsm/L who experienced the same problem in association with central venous femoral catheters. Although the patient in our case did not have a central venous line and was older than the patients previously described, her calculated serum osmolarity was similar. The extreme hyponatremia (sodium 213 mmol/L) and hyperosmolarity (calculated serum osmolarity 556 mOsm/L) described in a 2-week-old breast-feeding baby who experienced transverse sinus thrombosis⁴ was much more severe than what was seen in our patient.

Despite the reported association between DKA and prothrombotic state, at our centre we do not routinely use prophylactic anticoagulation in patients with DKA and a hyperosmolar state. Current international consensus statements⁵ and Canadian clinical practice guidelines⁶ on the management of DKA in children also do not address this issue, and prophylactic anticoagulation is not recommended. We concur that further clinical trials are required to determine the safety and efficacy of prophylactic anticoagulation in children with DKA.

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Home invasion

Remind me not to invite Dr. Ursus to my next “at home.”¹ While he was awed by his colleagues’ fancy cars, I was awed by his lack of etiquette. Since when is it acceptable to accept someone’s hospitality, and then underhandedly criticize your host?

Dr. Ursus, you can’t have it both ways. Don’t complain about the show-home decor and then grouse that you were served pizza. It seems that you expected a Martha Stewart meal, but what do you know about the homemaker in the family and the amount of time that she or he could devote to entertaining?

I am certainly no fan of conspicuous consumption, but I do recognize that people have a right to live as they please. While my extra cash goes to fuel hobbies and a reading habit, someone else might prefer the lifestyle you so conspicuously deride. And it’s not just doctors who overconsume. Our entire culture is based on purchasing things we often can’t afford. I suggest that Dr. Ursus take on that particular demon next time; in the meantime, he could brush up on his manners.

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Reference

1. Query. *CMAJ* 2005;172(2):296.

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Poor Dr. Ursus!

Poor Dr. Ursus!¹ Don’t you feel sorry for him, pining away because he doesn’t have any really sick patients? Too bad he didn’t live and practise 50 years ago when he wouldn’t have had to get his kicks by sending patients for lab tests and imaging or referring them to internists or surgeons, but could have detected really sick people with his own ears and eyes and hands, and then have made them better.

In those days he could have done his own surgery and his own deliveries and given his patients their anesthetics himself. And he probably would have been very good at it all and would have been happy.

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Reference

1. Query. *CMAJ* 2005;172(6):840.

DOI:10.1503/cmaj.1050084

Correction

The following sentence in a recent article,¹ “By our estimates, among the 149 000 Canadians who fall within the highest-risk quartile in this group, the number needed to treat with 5 years of statin therapy to prevent 1 CAD-related death would be 19 600,” should have read “... the lowest-risk quartile”

Reference

1. Manuel DG, Tanuseputro P, Mustard CA, Schultz SE, Anderson GM, Ardal S, et al. The 2003 Canadian recommendations for dyslipidemia management: Revisions are needed. *CMAJ* 2005;172(8):1027-31.

DOI:10.1503/cmaj.050770