Inadvertent dispensing of Coumadin instead of Coversyl

THE EDITOR: In August 2012, a 43-year-old woman presented to her general practitioner with extensive spontaneous bruising. Her only medications were Coversyl (perindopril) 5 mg daily for hypertension and Rhodiola rosea extract. Laboratory testing revealed prolonged coagulation times (Box 1). Mixing studies (50 : 50 patient and normal plasma) showed complete correction of the activated partial thromboplastin time and international normalised ratio (INR) and no evidence of a factor inhibitor on prolonged incubation. Results of liver function and lupus anticoagulant tests were normal. Plasma levels of vitamin K-dependent factors were reduced, consistent with vitamin K deficiency or inhibition (Box 1). The patient was administered 2 mg vitamin K orally; 48 hours later, her INR had fallen to 1.4. She denied taking warfarin or the structurally related brodifacoum (eg, Fast Action Ratsak), surreptitious administration of such compounds was not suspected, and she did not have a history of psychiatric illness.

The patient was referred to a haematologist for further evaluation. Visual assessment of the “Coversyl” bottle revealed that in fact Coumadin (5 mg warfarin tablets) had been dispensed 3 weeks before she initially presented to her GP (Box 2). She was advised to cease taking the medication immediately and the pharmacy was advised of the error.

In 2010, Melbourne Pathology had reported to the Therapeutic Goods Administration a series of incidents where Coversyl was inadvertently dispensed instead of Coumadin, leading to subtherapeutic INR results. Subsequently, the Coversyl bottle was produced with a white, rather than green, cap. The issue and the potential for adverse patient outcomes were communicated to pharmacies by the Therapeutic Goods Administration and Pharmacy Guild of Australia.1,2 Despite the modification and education, a further five patients across Melbourne, including this patient, were identified by Melbourne Pathology as having had Coumadin dispensed instead of Coversyl; these incidents were reported to the Australian Health Practitioner Regulation Agency by one of us (E L M) in August 2012.

Potential for confusion still exists, due to the alphabetical storage of medications on community pharmacy shelves.

Prevention of peripheral intravenous catheter-related bloodstream infections: the need for routine replacement

TO THE EDITOR: Peripheral intravenous catheters (PIVCs) frequently cause Staphylococcus aureus bacteraemia, and a disproportionate number of episodes involve catheters that have been left in place for ≥ 4 days or have been inserted in emergencies.1 Other studies have shown similar results with catheters left in place for > 48 hours or not routinely replaced after emergency placements.2-4

At Canberra Hospital, we have followed all bloodstream infections (BSIs).5 Since 2002, there have been 52 episodes of BSI associated with PIVCs; of these, 22 have been S. aureus bacteraemia. Where the duration of insertion was known, all but seven episodes involved catheters known to have been in place for > 48 hours (34 episodes) or were inserted in emergency situations or hospital transfers and left in place for > 24 hours (5 episodes) (Box).

In Spain, despite specific recommendations to remove PIVCs within 72 hours, 26% remained in place for longer.6 In participating hospitals where more PIVCs were in place for > 72 hours, PIVC-related BSI rates were threefold higher compared with hospitals that adhered to the recommendations (0.06 v 0.02 per 1000 patient-days).
Peripheral intravenous catheter (PIVC) dwell times for PIVC-associated bloodstream infections at Canberra Hospital since 2002

<table>
<thead>
<tr>
<th>No. of days</th>
<th>No. of episodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIVC in place</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
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<td>4</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>≥ 6</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
</tr>
</tbody>
</table>

* There were 5 episodes where PIVC was inserted in hospital transfer or emergency but was in place for >1 day.

It is very disconcerting that inappropriate recommendations against the routine replacement of PIVCs have been made, based on the occurrence of phlebitis rather than bacteraemia. Phlebitis usually results from non-infective causes (eg, irritation from drugs) and is an inappropriate surrogate marker for infection.

Prevention of severe sepsis is the most important clinical end point. However, its incidence is very low — about one BSI per 3000 catheters. Thus, any prospective randomised study would need to be extremely large, with tens of thousands of patients in each arm. Studies of this size have never been done and are unlikely.

We believe that we need recommendations based on the best available evidence — which supports an end point of bacteraemia rather than phlebitis. We agree that we need good catheter-insertion techniques. However, the current evidence strongly suggests that routine replacement of PIVCs at 48–72 hours will result in substantially lower sepsis rates than replacement at later times.

Peter J Collignon
Director

Fiona J Kimber
Nurse

Wendy D Beckingham
Clinical Nurse Consultant

Jan L Roberts
Clinical Nurse Consultant — Community Services

Infectious Diseases Unit and Microbiology Department, Canberra Hospital, Canberra, ACT.

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IN REPLY: We thank Collignon and colleagues for their letter regarding our study on peripheral intravenous catheter (PIVC)-associated Staphylococcus aureus bacteraemia.1 We agree with their comments. Both their data and ours support the potential importance of establishing a national standard for the insertion and management of PIVCs in Australia. Such a standard needs to address the basics of PIVC management: not inserting PIVCs unless required;3 using an aseptic technique when inserting PIVCs (including the use of sterile gloves); immediate removal of PIVCs placed in emergency situations; and subsequent removal of all PIVCs after no longer than 72 hours. Adherence to such a national standard could then be regularly audited, in much the same way that hand hygiene is now audited across the country,3 allowing comparisons and feedback between hospitals. Such an initiative is necessary if we are to see rates of PIVC-associated S. aureus bacteraemia decrease.

Rhonda L Stuart
Infectious Diseases Physician, and Associate Professor

M Lindsay Grayson
Director, and Professor

Paul D R Johnson
Infectious Diseases Physician, and Professor

1 Monash Infectious Diseases, Monash Health, Melbourne, VIC.
2 Department of Medicine, Southern Clinical School, Monash University, Melbourne, VIC.
3 Department of Infectious Diseases, Austin Health, Melbourne, VIC.
4 Department of Medicine, University of Melbourne, Melbourne, VIC.

rhonda.stuart@monashhealth.org

Competing interests: No relevant disclosures.

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Based on the high-level evidence, practitioners should ensure that patients avoid a repeated, painful and ineffective procedure. Medical and surgical residents and trainees are busy enough without perpetuating unnecessary routine PIVC replacements.

Claire M Rickard Professor of Nursing, 1 and Honorary Fellow, 2, 3
Joan Webster Nursing Director — Research, 4 and Professor of Nursing 5
E Geoffrey Playford Director, Infection Management Services, 6 and Associate Professor 7
1 NHMRC Centre for Research Excellence in Nursing, Griffith Health Institute, Griffith University, Brisbane, QLD.
2 Research and Development Unit, Centre for Clinical Nursing, Royal Brisbane and Women’s Hospital, Brisbane, QLD.
3 Princess Alexandra Hospital, Metro South Health, Brisbane, QLD.
4 School of Medicine, University of Queensland, Brisbane, QLD.
5 c.rickard@griffith.edu.au

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Time to reconsider steroid injections in the spine?

TO THE EDITOR: In their review, Harris and Buchbinder call for a ban on all spinal injections of steroids.1 These injections are not a singular procedure; they differ by indications, technique, and the evidence that serves each.

For the treatment of low back pain, no evidence supports the use of epidural steroids, and intra-articular injections of steroids are clearly no more effective than sham therapy.2 Disavowing this treatment is, therefore, justified. Ironically, the treatment with the greatest success rate and longest duration of success for chronic low back pain is injection of normal saline.3

For the treatment of radicular pain, multiple studies have shown that epidural injections of steroids are no more effective than sham treatment.4,5 One study showed marginal superiority over placebo at 3 weeks,6 but by 30 days, the number needed to treat is 100.7 Yet, the Faculty of Pain Medicine still endorses this intervention.8

The evidence is different for transforaminal (TF) injection of steroids. The success rate of TF injection of steroids is significantly greater than that of TF injection of bupivacaine or saline, or intramuscular injection of steroids or saline.9 Furthermore, TF steroid therapy has a surgery-sparing effect and is cost-effective.10 A blanket ban on steroid injections would deny patients with radicular pain the only proven alternative to surgery.

The baby’s bathwater is distinctly polluted, but within it is a gem. Before throwing it out, the water needs to be carefully filtered.

Nikolai Bogduk Director of Clinical Research
Newcastle Bone and Joint Institute, Newcastle, NSW.
nbogduk@bigpond.net.au

Competing interests: I am a Board member of the International Spine Intervention Society; while I am an exponent of the procedures in question, I derive no income from them.

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“To the Editor: We thank Harris and Buchbinder for their focus on interventional pain procedures.1 However, their description of the procedure they discuss has not been standard practice in pain medicine in Australia for many years. They misrepresent the Medicare Benefits Schedule (MBS) number 39013 to solely include facet joint injections, whereas it includes local anaesthetic medial branch blocks, which are an evidence-based diagnostic test for posterior elements as a source of spinal pain, and can be therapeutic in their own right.2 The number needed to treat (NNT) is the number of patients that need to be treated for one to benefit compared with a placebo or sham in a clinical trial. The ideal NNT is one. After a positive medial branch block response, radiofrequency medial branch neurotomies — a procedure with an NNT ranging from two patients3 to 4.4 patients4 treated for one patient to receive effective relief of spinal pain — creates a “therapeutic window” in which ongoing spinal rehabilitation can occur. From the 35 000 MBS number 39013 procedures performed in 2012, we can infer that fewer than 0.5% of Australians with spinal pain have facet joint injections and medial branch blocks in a 12-month period. Contrary to the comments of Harris and Buchbinder, lumbar transforaminal epidural steroid injections are effective for the treatment of radicular pain associated with disc protrusion, with an NNT of 2.7,5 and in conjunction with active pain strategies may forestall spinal surgery.”