

14 November 2017

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Dear Ms Rosella

### **RE: Revision of Toxicology and Toxinology topics in Therapeutic Guidelines**

The Society of Hospital Pharmacists of Australia (SHPA) thanks Therapeutic Guidelines Limited for giving us the opportunity to provide comments regarding Therapeutic Guidelines: Toxicology and Wilderness (Version 2, 2012) ahead of its revision for the next edition. This guideline is an essential reference for our members every day in a variety of clinical settings, especially for emergency medicine pharmacists whose roles are increasingly embedded into emergency departments around Australia.

SHPA is the national professional organisation with more than 4,400 pharmacists, pharmacist interns, students, technicians and associates working across Australia's health system. SHPA members lead the Pharmacy Departments at 29 of the principal referral hospitals in Australia, as well as the vast majority of both Public Acute A and Public Acute B hospitals. SHPA convenes an Emergency Medicine Speciality Practice Group, networking our experts in emergency medicine pharmacy practice to advance and influence policy and practice. SHPA members raised several areas in the current version of Therapeutic Guidelines: Toxicology and Wilderness for the Editorial Board to review ahead of the next version.

### **Paracetamol overdose in adult patients**

To treat paracetamol overdose in adult patients, the current guidelines describe a series of three infusions of N-acetylcysteine with varying doses and infusion times. However, this regimen of three infusions has been associated with up to a 33% incidence of administration errors.<sup>1</sup>

Given this known medication safety issue, toxicologists have successfully trialled simplified two infusion regimens that have demonstrated similar efficacy<sup>2</sup>, to minimise incidence of administration errors and adverse effects. Our members advise us that some hospitals and toxicologists around Australia are already using the simplified regimen of two infusions, and would appreciate a discussion and deliberation by Therapeutic Guidelines on the treatment of paracetamol overdose in adult patients in the next edition of Therapeutic Guidelines: Toxicology and Wilderness.

## Digoxin toxicity

Current guidelines for acute digoxin overdoses of known quantities require treatment with a calculated dose of digoxin immune Fab depending on the ingested quantity, and digoxin immune Fab 380mg (= 10 vials) for unknown overdose quantities. However, our members advise that current practice in hospitals use substantially less vials.

Literature from Australian clinicians suggests that current guidelines over-estimate the number of vials needed to treat digoxin toxicity, and that using one to two vials of digoxin immune Fab 38mg can sufficiently treat digoxin toxicities in many cases.<sup>3</sup> More broadly, clinicians have pursued regimens of similar efficacy that utilise less vials due to concerns surrounding cost (digoxin immune Fab 38mg costs ~\$1400AUD per vial) and storage space concerns for minimum stock holdings – these concerns are felt most in under-resourced hospitals.

## New section on non-Vitamin K oral anticoagulants / direct oral anticoagulants

The use of non-Vitamin K oral anticoagulants (NOACs) / direct oral anticoagulants (DOACs) has been significantly rising as an alternative to warfarin since the last edition of Therapeutic Guidelines: Toxicology and Wilderness. Given the irreversibility of these medicines in settings of overdose, our members believe that guidance on the treatment and management of overdoses of NOACs / DOACs would be greatly appreciated in the next edition of Therapeutic Guidelines: Toxicology and Wilderness.

As noted, SHPA convenes an Emergency Medicine Specialty Practice Group, if you would like to discuss practice-specific matters or require any further advice in your revision of Therapeutic Guidelines: Toxicology and Wilderness with this group, please let us know so we can facilitate appropriately. If you had other general matters to raise, please do not hesitate to contact Johanna de Wever, General Manager, Advocacy and Leadership. ([jdewever@shpa.org.au](mailto:jdewever@shpa.org.au)).

Regards



Kristin Michaels  
Chief Executive Officer

## References

1. Hayes BD, Klien-Schwarz W, Doyon S. Frequency of medication errors with intravenous acetylcysteine for acetaminophen overdose. *Ann Pharmacother.* 2008;42(6):766–70
2. Wong A, Graudins A. Simplification of the standard three-bag intravenous acetylcysteine regimen for paracetamol poisoning results in a lower incidence of adverse drug reactions. *Clin Toxicol.* 2016;54(2):115-9
3. Roberts D, Gallapatthy G, Dunuwille A, Chan B. Pharmacological treatment of cardiac glycoside poisoning. *Br J Clin Pharmacol.* 2016;81(3): 488-95