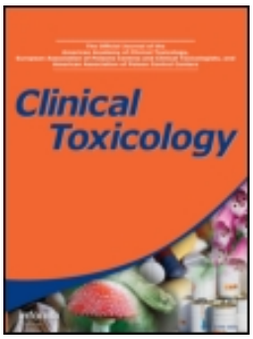

Clinical Toxicology

ISSN: 1556-3650 (Print) 1556-9519 (Online) Journal homepage: informahealthcare.com/journals/ictx20

Authors' responses to Letter to the Editor regarding 'Early digoxin-specific antibody fragments to treat patients at risk of life-threatening toxicity'

Betty S.H. Chan & Nicholas A. Buckley

To cite this article: Betty S.H. Chan & Nicholas A. Buckley (2014) Authors' responses to Letter to the Editor regarding 'Early digoxin-specific antibody fragments to treat patients at risk of life-threatening toxicity', Clinical Toxicology, 52:9, 987-987, DOI: 10.3109/15563650.2014.968253

To link to this article: https://doi.org/10.3109/15563650.2014.968253

Published online: 27 Oct 2014.

Submit your article to this journal

Article views: 651

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://informahealthcare.com/action/journalInformation?journalCode=ictx20

Clinical Toxicology (2014), **52**, 987
Copyright © 2014 Informa Healthcare USA, Inc.
ISSN: 1556-3650 print / 1556-9519 online
DOI: 10.3109/15563650.2014.968253

informa
healthcare

LETTER TO THE EDITOR

Authors' responses to Letter to the Editor regarding 'Early digoxin-specific antibody fragments to treat patients at risk of life-threatening toxicity'

To the Editor:

We thank Drs. Megarbane and Baud for the letter discussing the role of prophylactic use of digoxin-Fab in patients with elevated digoxin levels. This is in response to our recent review article on digoxin-specific antibodies in the treatment of digoxin toxicity.[1] The prophylactic use of half equimolar dose of digoxin-Fab in patients with 'a poor prognosis', elevated digoxin levels, but without any indication of severe digoxin toxicity, is a very expensive strategy. Further, there are no convincing data to suggest that this will improve outcomes compared with observation and treatment of any deterioration with digoxin-Fab.

The suggestion that the group of patients have a poor prognosis is based on analysis of patients with acute digoxin/digitoxin poisoning.[2] These 6 prognostic factors have not been validated in chronic digoxin poisoning and some are extremely common. A majority of asymptomatic patients with an elevated digoxin level would meet three or more criteria, which they suggest should indicate prophylactic digoxin-Fab. In their own series, over 95% of patients met two of the three criteria (age >55 and underlying heart disease). So simply being male, OR having a heart rate of less than 60 bpm after atropine OR having a K value of greater than 4.5mmol/L would on their own be an indication for digoxin-Fab, if the authors' prognostic criteria were used. The result would be a tenfold increase in the use of digoxin-Fab.[3,4]

We agree that patients with high digoxin concentrations from 'chronic toxicity' have a higher mortality rate. These patients are frequently old, with deterioration in underlying heart, kidney and/or liver disease. The deterioration in organ function might have caused the high digoxin concentration. Many of these patients will still die if digoxin-Fab is given. In a prospective multi-centre study of 150 patients treated with equimolar dose of digoxin-Fab, the mortality rate was 29% (43/150).[5] The death in majority of patients was thought to be caused by other medical illnesses. Even if Digoxin-Fab is not given, it is likely that patients, who die, will die 'with' rather than 'from' chronic digoxin toxicity.

We are currently conducting a prospective non-randomised study on acute and chronic digoxin poisoning and have frequently found that digoxin-Fab does not improve symptoms of patients with chronic digoxin toxicity even when half molar neutralising doses are used. It is even harder to measure an effect of prophylactic digoxin-Fab in asymptomatic patients. Thus, we would endorse the merit of conducting a randomised clinical trial to test the benefits of prophylactic digoxin-Fab, as it is plausible (but not likely) that there is a small benefit, and it will be impossible to determine this with less stringent research designs.

Betty S.H. Chan
Prince of Wales Hospital, Clinical Toxicology Unit & Emergency Medicine, Sydney, Australia

Nicholas A. Buckley
Department of Pharmacology, Sydney University, Sydney, Australia

Declaration of interest

The authors report no declarations of interest. The authors alone are responsible for the content and writing of the paper.

References

1. Chan BSH, Buckley NA. Digoxin-specific antibody fragments in the treatment of digoxin toxicity. Clin Toxicol (Phila) 2014; 52:824–836.
2. Dally S, Alperovitch A, Lagier G, Bismuth C, Fournier E. [Prognostic factors in acute digitalis poisoning (author's transl)]. Nouv Presse Med 1981; 10:2257–2260.
3. Lapostolle F, Borron SW, Verdier C, Taboulet P, Guerrier G, Adnet F, et al. Digoxin-specific Fab fragments as single first-line therapy in digitalis poisoning. Crit Care Med 2008; 36:3014–3018.
4. Lapostolle F, Borron SW, Verdier C, Arnaud F, Couvreur J, Mégarbane B, et al. Assessment of digoxin antibody use in patients with elevated serum digoxin following chronic or acute exposure. Intensive Care Med 2008; 34:1448–1453.
5. Antman EM, Wenger TL, Butler VP Jr, Haber E, Smith TW. Treatment of 150 cases of life-threatening digitalis intoxication with digoxin-specific Fab antibody fragments. Final report of a multicenter study. Circulation 1990; 81:1744–1752.

Received 17 September 2014; accepted 17 September 2014.
Address correspondence to Dr. Betty S.H. Chan, Prince of Wales Hospital, Clinical Toxicology and Emergency Medicine, Barker Street, Randwick, 2031 Australia. E-mail: betty.chan@sesiahs.health.nsw.gov.au