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COMMENT

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Reply to the 'Comment on "Acetylcysteine in paracetamol poisoning: a perspective of 45 years of use"' by M. E. Mullins, M. C. Yarema, M. L. A. Sivilotti, M. Thompson, D. A. Algren, M. C. Beuhler and C. P. Holstege, *Toxicol. Res.*, 2019, 8, DOI: 10.1039/C9TX00158A

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Mullins *et al.* made a comment on our article (DOI: 10.1039/C9TX00002J) stating they noticed the omission of the one-bag, standard concentration protocol which is shared by several centers in North America when we discussed IV acetylcysteine protocols. In this reply we clarify that we did not include this methodology as it is a technical adaption of the way in which a 2-bag NAC regimen in administered and there is insufficient comparative data with other regimens.

We welcome this comment on our manuscript, describing a one bag approach to administering acetylcysteine (NAC) using a programmable infusion pump. This has clear attractions, however, we did not include this methodology as it is a technical adaptation of the way in which a 2-bag NAC regimen is administered.

The authors suggest that their 1 h infusion of 150 mg kg^{-1} h^{-1} is 'safe' but, to our knowledge, there are no robust comparative data with other regimens. In a large audit we have shown this 1 h infusion rate causes no reduction in ADR's as compared to an initial 15 minutes infusion of the same dose.[1] In the face of modern clinical trial evidence,[2] we prefer regimens associated with far lower ADR rates than the traditional regimen, hence fewer treatment interruptions. Crucially our data demonstrate comparable efficacy to the licenced 21 h regimen.[3]

We agree the idea of a single programmable pump is logical, but we would stress it is important to audit its use correctly, and to use the optimum evidence-based NAC protocol, which we currently believe to be based on an initial 2 dose, 12 h regimen.

Conflicts of interest

There are no conflicts of interest to declare.

References

1 D. N. Bateman, R. Carroll, J. Pettie, T. Yamamoto, M. E. Elamin, L. Peart, *et al.*, Effect of the UK's revised paracetamol poisoning management guidelines on admissions, adverse reactions and costs of treatment, *Br. J. Clin. Pharmacol.*, 2014, **78**, 610–618.

2 D. N. Bateman, J. W. Dear, H. K. R. Thanacoody, S. H. L. Thomas, M. Eddleston, E. A. Sandilands, *et al.*, Reduction of adverse effects from intravenous acetylcysteine treatment for paracetamol poisoning: A randomised controlled trial, *Lancet*, 2014, **383**(9918), 697–704.

3 J. M. Pettie, T. M. Caparrotta, R. W. Hunter, E. E. Morrison, D. M. Wood, P. I. Dargan, *et al.*, Safety and Efficacy of the SNAP 12-hour Acetylcysteine Regimen for the Treatment of Paracetamol Overdose, *EClinicalMedicine*, 2019, **11**, 11–17.