Comment on: Outpatient parenteral antibiotic therapy (OPAT): is it safe for selected patients to self-administer at home? A retrospective analysis of a large cohort over 13 years

P. R. Ingram1,2, Z. Sulaiman3, A. Chua1 and D. A. Fisher1,2*

1Department of Medicine, National University Hospital, 5 Lower Kent Ridge Road, 119074 Singapore, Singapore; 2Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore, 5 Lower Kent Ridge Road, 119074 Singapore, Singapore; 3National University Hospital, 5 Lower Kent Ridge Road, 119074 Singapore, Singapore

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*Corresponding author. Tel: +65-6772-5555; Fax: +65-6779-4112; E-mail: mdcfda@nus.edu.sg

Sir,

It is with interest that we read the recent report by Matthews et al., describing the success in terms of safety and practicality of the self-administration model of outpatient parenteral antibiotic therapy (S-OPAT). We have had similar experiences in our very different Asian setting.

Our service at the 1000 bed National University Hospital (NUH) in Singapore was established in late 2004 using an infusion centre model (H-OPAT). The patient demographics and disease spectra have been recently described and are consistent with the experience of Matthews et al., that is, a predominance of middle-aged (median 55 years) male (60%) patients with musculoskeletal infections (40%). Our antibiotic usage differed in several ways. Rather than a predominance of once-daily delivery antibiotics (ceftriaxone and teicoplanin comprised 80% of the antibiotics used), we require a greater diversity of antibiotics, particularly those with pharmacokinetics benefiting from 24 h infusion devices. From 369 antibiotic courses in OPAT in Singapore, 5 drugs are seen to make up 80% of total utilization; vancomycin (100), ceftriaxone (66), cefazolin (45), ertapenem (45) and ceftazidime (39) were the most frequently used, reflecting the diversity of bacteria treated and their sensitivity patterns, including methicillin-resistant Staphylococcus aureus and multidrug-resistant Gram-negative infections.

Transport complexities in this large Asian city, evidence of cost–benefit, and individual patient and carer requests for autonomy led us to incorporate S-OPAT into our service during 2006. To date, 53 patients have availed themselves of S-OPAT at NUH. As with the report by Matthews et al., it is now responsible for ~25% of the total bed days saved and has contributed significantly to the expansion of service (Figure 1). Our S-OPAT service is however unique in several regards. Contrary to other services described in the literatures, we heavily use elastomeric infusion devices for self-administration of antibiotics. We believe that this may be more convenient and potentially safer as it involves less handling by the patient or carer. Training of home caregivers occurs in the outpatient setting during the routine infusion centre attendance. This prevents a possible prolongation of inpatient length of stay. When performed by skilled nurses and accompanied by an assessment process, caregiver training was achieved with a median of 2 attendances (range 1–10). Individuals providing the infusor exchanges included spouse (25%), children (25%), self (23%) and parent (15%).

We note that Matthews et al. showed no difference in complication rates between the S-OPAT and H-OPAT cohorts. Our outcomes are similar. The rates of drug complications (3.8% versus 2.2% per episodze), line-related complications (0% versus 2.2%), re-admission rates (13.2% versus 13.9%) and complications unrelated to OPAT (11.3% versus 9.8%) were not different between the respective S-OPAT and H-OPAT groups (Fisher’s exact test).

In conclusion, our experience supports the findings of Matthews et al. and shows that the S-OPAT model applies equally to the Asian setting. When accompanied by judicious patient selection, comprehensive education, and continuous support of caregivers in the community, self-administration of antibiotics is safe and allows for greater uptake of the service. The increasing proportion of bed days saved attributable to S-OPAT and our successful use of infusion devices highlight the potential expanding role for this form of antibiotic delivery.

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Transparency declarations

None to declare.

References

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Letters to the Editor

Comment on: The use of erythromycin as a gastrointestinal prokinetic agent in adult critical care: benefits versus risks

Adam Deane* and Robert Young

Department of Intensive Care, Royal Adelaide Hospital, Adelaide, Australia

Keywords: delayed gastric emptying, critical illness, intensive care

*Corresponding author. Tel: +61-431-967-560; Fax: +61-882-222-367; E-mail: adam.deane@adelaide.edu.au

Sir,

Hawkyard and Koerner1 have valid concerns regarding the development of macrolide resistance exacerbated by the use of erythromycin as therapy for delayed gastric emptying in critical care. The enteral route remains the preferred mode of nutritional support in critical illness. However, up to 50% of critically ill patients suffer from delayed gastric emptying. Therefore, until a cheap, quick and minimally invasive method of post-pyloric tube placement becomes available, intensivists will require prokinetics to treat delayed emptying.

The pattern of motility seen in critically ill patients during enteral nutrition is virtual absence of antral motility with increased isolated pyloric pressure waves and retrograde duodenal activity.2 This motility pattern retards gastric emptying, and motilin agonists, which stimulate antral wave frequency and amplitude while suppressing pyloric activity, are an ideal prokinetic in critical illness. This was confirmed recently when erythromycin was demonstrated to be more effective than metoclopramide at treating delayed gastric emptying.3 There is also a benefit to using metoclopramide in combination with erythromycin,4 and our current regimen is to treat feed intolerance with a short course of combination therapy (erythromycin 200 mg twice a day and metoclopramide 10 mg four times a day). This approach improves feed tolerance while limiting tachyphylaxis and attempts to minimize pressure on macrolide resistance within the intensive care unit.

Other prokinetic options remain limited. Tegaserod, a selective serotonin type 4 receptor agonist, has been used successfully in critically ill patients to improve feed tolerance.5 However, we remain cautious of tegaserod because it has been associated with increased ischaemic cardiovascular events. Current FDA recommendations are that the use of tegaserod should be limited to patients who meet strict criteria and have no known or pre-existing heart problems and be in critical need of this drug.6 Opiate and cholecystokinin (CCK) antagonists, ghrelin agonists and motilin agonists without antibiotic activity are all appealing but require further trials before acceptance into critical care practice.

Nutritional support is standard care in critical illness. However, delivery of adequate enteral nutrition remains a problem because of delayed gastric emptying. In the absence of an alternative modality to enable more successful and safe delivery of nutrition, we believe that the benefits of short-course erythromycin outweigh the risks.

Transparency declarations

None to declare.

References


The use of erythromycin as a gastrointestinal prokinetic agent in adult critical care: benefits versus risks—authors’ response

Catherine V. Hawkyard and Roland J. Koerner*

Department of Medical Microbiology, Sunderland Royal Hospital, Sunderland SR4 7TP, UK

Keywords: modular evolution, non-antimicrobial activities

*Corresponding author. Tel: +44-191-5656256; Fax: +44-191-5410531; E-mail: roland.koerner@chs.northy.nhs.uk

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