



9-1997

Enteral cisapride, erythromycin, and metoclopramide in critically ill patients intolerant to enteral nutrition: a randomized, placebocontrolled, cross-over study

Robert MacLaren

Jane M. Gervasio

Butler University, jgervasi@butler.edu

David A. Kuhl

Teresa N. Livingston

Kyle Swift

See next page for additional authors

Follow this and additional works at: https://digitalcommons.butler.edu/cophs_papers



Part of the [Pharmacy and Pharmaceutical Sciences Commons](#)

Recommended Citation

MacLaren, Robert; Gervasio, Jane M.; Kuhl, David A.; Livingston, Teresa N.; Swift, Kyle; Dickerson, Roland N.; Brown, Rex O.; Headley, Stacey; Kudsk, Kenneth A.; and Lima, John J., "Enteral cisapride, erythromycin, and metoclopramide in critically ill patients intolerant to enteral nutrition: a randomized, placebocontrolled, cross-over study" (1997). *Scholarship and Professional Work – COPHS*. 27. https://digitalcommons.butler.edu/cophs_papers/27

This Article is brought to you for free and open access by the College of Pharmacy & Health Sciences at Digital Commons @ Butler University. It has been accepted for inclusion in Scholarship and Professional Work – COPHS by an authorized administrator of Digital Commons @ Butler University. For more information, please contact digitalscholarship@butler.edu.

Authors

Robert MacLaren, Jane M. Gervasio, David A. Kuhl, Teresa N. Livingston, Kyle Swift, Roland N. Dickerson, Rex O. Brown, Stacey Headley, Kenneth A. Kudsk, and John J. Lima

Enteral cisapride, erythromycin, and metoclopramide in critically ill patients intolerant to enteral nutrition: a randomized, placebocontrolled, cross-over study

Rob MacLaren, Jane M. Gervasio, David A. Kuhl, Teresa N. Livingston, D. Kyle Swift, Roland N. Dickerson, Rex O. Brown, A. Stacey Headley, Kenneth A. Kudsk, John J. Lima

Purpose: To evaluate the comparative efficacies of enteral cisapride (CIS), erythromycin (ERY), metoclopramide (MET), and placebo (PLA) for promotion of gastric emptying in critically ill patients intolerant to gastric enteral nutrition (EN).

Methods: Ten critically ill patients with an aspirated gastric residual volume (GRV) greater than 150 ml receiving EN were administered a single enteral dose of CIS 10 mg, ERY 200 mg, MET 10 mg, and PLA (water) every 12 hours in a randomized, cross-over manner. Acetaminophen solution (1 g) was administered concurrently with each dose to evaluate gastric emptying. GRVs were assessed and plasma acetaminophen concentrations were serially determined by TDx between 0 and 12 hours. Compartmental pharmacokinetic methods were used to calculate absorption lag time (thg), mean residence time of absorption (MRTabs), time to peak concentration (tP), elimination rate constant (k), and area under the plasma concentration- time curve (AUC). Statistical analysis included ANOVA and post hoc comparison using Fisher's LSD.

Results: GRVs during the study were not significantly different between agents. Pharmacokinetic parameters (mean \pm SD) varied as follows:

Agent (n)	tLag (min)	MRTabs (min)	tP (min)	k (1/min \times 10 ⁻²)	AUC (mg/L/min)
CIS (6)	20.8 \pm 16.5	4.6 \pm 3.6*	23.1 \pm 0.6*+	0.766 \pm 0.493	1774 \pm 1190
ERY (8)	13.1 \pm 18.3	28.1 \pm 26.6	65.2 \pm 26.8	0.839 \pm 0.539	2306 \pm 1253
MET (8)	7.9 \pm 14.6	8.6 \pm 12.7*	39.8 \pm 9.8*+	0.847 \pm .0451	2255 \pm 1472
PLA (8)	12.5 \pm 18.1	20.5 \pm 17.8	69.2 \pm 13.4	0.650 \pm 0.230	2582 \pm 1586

* $p < 0.05$ versus ERY; + $p < 0.05$ versus PLA

Conclusions: In critically ill patients intolerant to enteral nutrition, a single enteral dose of cisapride or metoclopramide significantly accelerated gastric emptying compared to erythromycin and placebo. Erythromycin provided no advantage over placebo.