



Despite observed compatibility between vancomycin and piperacillin-tazobactam via simulated Y-site testing, visual evidence of physical incompatibility was observed during actual Y-site infusion” Kufel et al (2017).

Abstract:

Background: Published literature has demonstrated commercially available premix vancomycin (5 mg/mL) and piperacillin-tazobactam (67.5 mg/mL) as physically compatible via simulated Y-site methodology. Compatibility via actual Y-site infusion has yet to be established.

ReTweet if useful... Y-site compatibility testing between vancomycin and piperacillin-tazobactam <https://ctt.ec/NK513+> @ivteam #ivteam

Click To Tweet

Objective: To assess and compare the compatibility of commercially available premix concentrations of vancomycin and piperacillin-tazobactam via simulated and actual Y-site evaluation.

Methods: Vancomycin and piperacillin-tazobactam were tested using simulated and actual Y-site infusion methodologies. Simulated Y-site compatibility was performed using previously published methods via visual inspection, turbidity evaluation, and pH evaluation. Evaluation

occurred immediately, 60 minutes, 120 minutes, and 240 minutes following mixing for each mixture and control. Mixtures were considered physically incompatible if there was visual evidence of precipitation or haze, an absorbance value was greater than 0.01 A, or an absolute change of 1.0 pH unit occurred. Actual Y-site infusion was simulated to mirror antibiotic infusion in the clinical setting by nursing personnel using smart pumps and intravenous tubing.

Results: No evidence of physical incompatibility was observed during simulated Y-site testing via visual inspection, turbidity assessment, and pH evaluation. Conversely, physical incompatibility was observed to the unaided eye within 2 minutes during actual Y-site infusion.

Conclusions: Despite observed compatibility between vancomycin and piperacillin-tazobactam via simulated Y-site testing, visual evidence of physical incompatibility was observed during actual Y-site infusion. This poses a potential compromise to patient safety if these antibiotics are administered simultaneously in the clinical setting. Actual Y-site testing should be performed prior to clinical adoption of compatibility studies that are based solely on simulated methodologies.

Reference:

Kufel, W.D., Miller, C.D., Johnson, P.R., Reid, K., Zahra, J.J. and Seabury, R.W. (2017) Y-site Incompatibility Between Premix Concentrations of Vancomycin and Piperacillin-Tazobactam: Do Current Compatibility Testing Methodologies Tell the Whole Story? *Hospital Pharmacy*. 52(2), p.132-137.

doi: 10.1310/hpj5202-132.

Thank you to our partners for supporting IVTEAM

