Abstract:

Purpose: The objective of this communication was to determine the intravenous compatibility of ceftazidime/avibactam and aztreonam using simulated and actual Y-site administration.

Methods: Ceftazidime-avibactam was reconstituted and diluted to concentrations of 8, 25, and 50 mg/mL in 0.9% sodium chloride. Aztreonam was reconstituted and diluted to concentrations of 10 and 20 mg/mL. Each combination of concentrations was tested for compatibility using visual, Tyndall beam, microscopy, turbidity, and pH assessments. Microscopy results were compared to those from sodium chloride 0.9% in water, pH was compared to that at time 0, and turbidity of combinations was compared to that of individual agents. Actual Y-site mixing was conducted over 2-h infusions with samples collected at 0, 1, and 2 h. Test results were evaluated at 0, 1, 2, 4, 8, and 12 h after mixing. All experiments were completed in triplicate.

Findings: Across simulated and actual Y-site experiments, no evidence of incompatibility between combinations of ceftazidime-avibactam + aztreonam was observed. Visual and microscopic tests revealed no particulate matter, color changes, or turbidity. Tyndall beam tests were negative with all combinations. No evidence of incompatibility was observed in turbidity testing. The pH values were consistent across each of the 6 combinations, from immediately after mixing until 12 h after mixing. When the addition of agents was reversed in simulated Y-site experiments, no differences in compatibility were observed. No differences in compatibility between actual and simulated Y-site administration were observed, and there was minimal variability across all replicate experiments.

Implications: Ceftazidime-avibactam, at concentrations of 8, 25, and 50 mg/mL, appeared compatible with aztreonam at concentrations of 10 and 20 mg/mL. ClinicalTrials.gov identifier: XXXXXXXXXXXX.

Reference: