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## Continuous infusion vs. intermittent Vancomycin in neurosurgical intensive care unit patients

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Target plasma level achievement has remained a challenge in neurosurgical intensive care unit patients receiving intravenous vancomycin. We evaluated continuous infusion (CI) and intermittent vancomycin dosing strategies in these patients. We conducted a retrospective cohort comparing CI vancomycin (target random levels, 20-30 mg/L) with intermittent vancomycin (target troughs, 15-20mg/L) in regards to achievement of target plasma levels, nephrotoxicity, pharmacodynamic target attainment, and cost savings in 130 patients. We found that continuous infusion resulted in greater achievement of goal plasma concentrations at the first steady state level (40 vs. 21.5%,  $P=0.02$ ), more rapid achievement of goal plasma concentrations (2.04 vs. 3.76 days,  $P=0.0001$ ), and increased time within therapeutic range (55% vs. 34%,  $P=0.0001$ ) but no significant difference in nephrotoxicity (15.4% vs. 21.5%,  $P=0.5$ ). Continuous infusion improved pharmacodynamic target attainment (92.3% vs. 30.8%,  $P=0.0001$ ) and also reduced levels drawn (3.8 vs. 5.7,  $P=0.0007$ ), dose adjustments (1.4 vs. 2.4,  $P=0.0006$ ), days of therapy (10.4 vs. 14.1,  $P=0.01$ ), and mean total daily dose requirements (33 vs. 35.7 mg/kg,  $P=0.0001$ ) per patient. In summary, continuous infusion appears beneficial for improving attainment of target plasma concentrations, pharmacodynamic goals, and financial burden, without increasing risk of acute kidney injury.

### Biography

Lisa Hong, PharmD, BCPS is an Assistant Professor at Loma Linda University (LLU) School of Pharmacy and practices in the Internal Medicine Unit at LLU Medical Center. She received her Doctor of Pharmacy degree from the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences in 2013 and completed her 1st year of residency training at the University of Colorado Hospital. She then completed a PGY2 in Internal Medicine at the University of Utah. She has a strong interest in interdisciplinary education and has conducted research in the area of antimicrobial pharmacokinetics.

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