Continuous-infusion vancomycin (CIV) may be associated with a lower risk of vancomycin-associated nephrotoxicity compared with IIV, but studies comparing safety of both dosing strategies are lacking” Ma et al (2020).

Abstract:

BACKGROUND: Patients with good renal function receiving intermittent-infusion vancomycin (IIV) may require total daily doses ≥4 g to achieve trough concentrations of 15-20 mg/L, increasing the risk of vancomycin-associated nephrotoxicity. Continuous-infusion vancomycin (CIV) may be associated with a lower risk of vancomycin-associated nephrotoxicity compared with IIV, but studies comparing safety of both dosing strategies are lacking.

OBJECTIVES: To compare the risk of nephrotoxicity with CIV versus IIV when target concentration ranges were the same with both dosing modalities.

METHODS: A retrospective multicentre matched cohort study of admitted patients between 1 January 2010 and 31 December 2016 was completed. Adult patients who received ≥48 h of vancomycin with at least one steady-state vancomycin concentration were eligible. The primary outcome was to compare the rates of nephrotoxic risk and renal injury, defined by the RIFLE criteria, between CIV and IIV.

RESULTS: Of 2136 patients who received vancomycin during the study period, 146 CIV patients were eligible and matched to 146 IIV patients. After adjustment of potential confounders, CIV was found to have a lower odds of developing nephrotoxic risk (OR 0.42, 95% CI 0.21-0.98, P = 0.025) and renal injury (OR 0.19, 95% CI 0.05-0.59, P = 0.004).

CONCLUSIONS: CIV is associated with a lower odds of nephrotoxicity compared with IIV when targeting the same concentration range and should be an alternative dosing strategy for patients who will receive prolonged therapy or require >4 g/day to achieve therapeutic levels.
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