

Although the risk factors for VCM nephrotoxicity have been evaluated, the time course of renal function during VCM treatment is unknown” Hirai et al (2019).

Abstract:

PURPOSE: Vancomycin (VCM) is used for the treatment of methicillin-resistant *Staphylococcus aureus*. Although the risk factors for VCM nephrotoxicity have been evaluated, the time course of renal function during VCM treatment is unknown. We assessed risk factors for VCM nephrotoxicity and how renal function varied over time.

METHODS: We conducted a retrospective analysis of patients receiving intravenous VCM treatment between June 2015 and August 2017 at Tokyo Women’s Medical University, Medical Center East. VCM nephrotoxicity was defined as an increase in serum creatinine levels > 50%. We performed multivariate logistic regression analysis to assess risk factors for VCM nephrotoxicity. The time course of renal function with VCM nephrotoxicity was compared and stratified by risk factors for VCM nephrotoxicity. Clinical course of VCM nephrotoxicity and VCM trough concentration were assessed.

RESULTS: In total, 42 (17.3%) of 243 patients developed VCM nephrotoxicity. Risk factors for VCM nephrotoxicity were VCM trough concentration > 20 µg/mL and concomitant use of renal hypoperfusion medications (angiotensin-converting enzyme inhibitor/angiotensin receptor blocker, loop/thiazide diuretics, and non-steroidal anti-inflammatory drugs). Although time course of renal function stratified by renal hypoperfusion medications was comparable, the time course of renal function significantly deteriorated in patients with loop/thiazide diuretics. Focusing on patients continuing VCM treatment, VCM nephrotoxicity recovered in 40% of the patients and VCM trough concentration improved to 10-20 µg/mL in 75% of the patients.

CONCLUSIONS: VCM trough concentration > 20 µg/mL and concomitant use of renal hypoperfusion medications are associated with VCM nephrotoxicity. Recovery of VCM nephrotoxicity was poor compared to the improvement of VCM trough concentration.

You may also be interested in...

Reference:

Hirai, T., Hanada, K., Kanno, A., Akashi, M. and Itoh, T. (2019) Risk factors for vancomycin nephrotoxicity and time course of renal function during vancomycin treatment. *European Journal of Clinical Pharmacology*. February 15th. .

doi: [10.1007/s00228-019-02648-7](https://doi.org/10.1007/s00228-019-02648-7).