

Vancomycin infusion has been implicated in cases of phlebitis, with endothelial toxicity depending on concentration and infusion duration” Drouet et al (2015).

Reference:

Drouet, M., Chai, F., Barthélémy, C., Lebuffe, G., Debaene, B., Décaudin, B. and Odou, P. (2015) Endothelial cell toxicity of vancomycin infusion associated with other antibiotics. Antimicrobial Agents and Chemotherapy. June 8th. .

Endothelial cell toxicity of vancomycin infusion [@ivteam #ivteam](http://ctt.ec/8TfP5+)

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Abstract:

French guidelines recommend central intravenous infusion for high concentrations of vancomycin, but peripheral intravenous (PIV) infusion is often preferred in intensive care units. Vancomycin infusion has been implicated in cases of phlebitis, with endothelial toxicity depending on concentration and infusion duration. Vancomycin is frequently infused in association with other IV antibiotics through the same administrative Y-site but the local toxicity of such associations has been poorly evaluated. Such an assessment could improve vancomycin infusion procedures in hospitals. Human Umbilical Vein Endothelial Cells (HUVEC) were challenged with clinical doses of vancomycin over 24h with or without other IV antibiotics. Cell death was measured with the AlamarBlue® test. We observed an excess cellular death rate without any synergistic effect but dependent on the numbers of associated infusions when vancomycin was infused with erythromycin and gentamicin through the same Y-site. Incompatibility between vancomycin and piperacillin-tazobactam was not observed in our study, and rinsing the cells between the two antibiotic infusions did not reduce endothelial toxicity. No endothelial toxicity of imipenem-cilastatin was observed when associated with vancomycin. PIV vancomycin infusion in association with other medications requires new recommendations to prevent phlebitis, including limiting co-infusion on the same line, reducing infusion rate and choosing an intermittent infusion method. Further studies have to be carried out to explore other drug associations in long-term vancomycin PIV therapy so as to gain insight into the mechanisms of drug incompatibility in multi-drug infusion conditions.

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