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PREVALENCE OF VANCOMYCIN-RELATED NEUTROPAENIA, THROMBOCYTOPAENIA AND ACUTE KIDNEY INJURY

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Background

Vancomycin is a glucopeptide antibiotic widely used to treat Gram positive related infections. It is well-known its nefrotoxic and ototoxic profile but neutropenia and thrombocytopenia are not so well described.

Purpose

The aim of this study is to describe the prevalence of some relevant vancomycin-related adverse events (AE): neutropaenia, thrombocytopaenia and acute kidney injury (AKI).

Material and methods

This retrospective observational study was conducted in all patients admitted to Donostia University Hospital that received vancomycin during 2016-2017 and were monitored by the pharmacy department (PD).

Exclusion criteria: patients with neutropaenia, thrombocytopaenia or AKI prior to vancomycin therapy.

Collected data: diagnosis, absolute neutrophil count (ANC), absolute platelet count (APT) and creatinine clearance (CrCl, calculated with Cockcroft-Gault formula) prior and during vancomycin therapy. Neutropaenia was defined as ANC <1000cel/microL, thrombocytopaenia as APT <100.000cel/microL and AKI as CrCl <60ml/min or decrease in CrCl of 25%.

Results

A total of 177 patients were reviewed, with a mean age of 63.4±16.4 and 32.8% were women. Almost half of the patients 48.6% (n=86) had an ostearticular infection; bacteriemia accounted for 36.2% (n=64). The rest of the infections were related to the central nervous system 3.4% (n=6), endovascular system 3.4% (n=6) and others 8.4% (n=15).

Patients excluded: 8 due to neutropaenia (n=169), 15 due to thrombocytopaenia (n=162) and 14 due to AKI (n=163) prior to vancomycin therapy.
Neutropaenia was developed in 7 patients (=1:24), thrombocytopaenia in 12 patients (=1:14) and AKI in 26 patients (=1:6). The prevalence of nephrotoxicity is described as common (1:100-1:10) in the summary product characteristics (SPC). However, neutropaenia and thrombocytopaenia are classified as rare undesirable effects (1:10.000-1:1.000)

Conclusions

The prevalence of AE related to vancomycin therapy is higher than reported in SPC. In our study neutropaenia was reported in 7:169 patients, thrombocytopaenia in 12:162 and AKI in 26:163.
The difference between SPC and our clinical practice is considerable. However, it should be noticed that only patients monitored by PD were reviewed, and therefore the number of patients included is low. It is of high importance to continue reporting any AE related to vancomycin therapy to the appropriate pharmacovigilance institution in order to better understand the toxic profile of the drug.

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