Influence of switching from intravenous to oral administration on serum voriconazole concentration

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May 26, 2020

Abstract

Background: While bioavailability of oral voriconazole is known to be >90%, several reports have observed much lower oral bioavailability. The aim of the present study was to assess the oral bioavailability of voriconazole in clinical use by evaluating the change in serum voriconazole concentration in patients who received intravenous-to-oral switch therapy with the same dose of voriconazole. Methods: A single-center, retrospective cohort study was conducted at the 614-bed Gifu University Hospital in Japan. Patients who received intravenous-to-oral switch therapy with the same dose of voriconazole between January 1, 2011 and December 31, 2018 were enrolled in the present study. We evaluated changes in serum voriconazole concentration before and after switch therapy. Results: Voriconazole trough concentrations significantly decreased following oral compared to intravenous treatment (2.5 ± 1.5 μg/mL vs 3.3 ± 2.0 μg/mL, P = 0.021). The median change rate of serum concentration by switching the route of administration was 82.7%, with wide inter-individual variability (range 27.2–333.3%). Further, young age (OR 1.04, 95% CI 0.99–1.08, P = 0.090) and low blood urea nitrogen (OR 1.11, 95% CI 0.99–1.24, P = 0.070) were found to be close to significant factors associated with decreased serum concentration. Conclusions: Switching from intravenous to oral treatment resulted in a significant decline in voriconazole trough concentrations with wide inter-individual variability. Therefore, measurement of serum concentration for dose adjustment should be performed after switching to the oral form.

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Running title

I.v. to p.o. switch of voriconazole.

Disclosures

Conflicts of interest: All authors report no conflicts of interest regarding this study.

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