Stability of Voriconazole by Constant-Rate Infusion for Ocular Delivery in Horses

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Voriconazole 1% solution is not compatible with constant-rate infusion delivery and the use of other aqueous-based medications may have similar results. Voriconazole 1% solution is stable when stored in the commercial glass vial at controlled temperatures between 23 and 40°C up to 30 days. Authors’ addresses: Department of Veterinary Clinical Sciences, Center for Veterinary Health Sciences (Smith, Gilmour); Department of Physiological Sciences, Center for Veterinary Health Sciences (Maxwell); Department of Veterinary Pathobiology, Center for Veterinary Health Sciences (Gull); and Department of Statistics (Payton), Oklahoma State University, Stillwater, OK 74078; e-mail: kathryn.m.smith@okstate.edu. *Corresponding and presenting author. © 2014 AAEP.

1. Introduction
The study objective was to establish the effect of storage in a constant-rate infusion (CRI) pump on the sterility and stability of voriconazole 1% solution.

2. Materials and Methods
Nine vials of voriconazole 1% solution were prepared. Each vial was used to prime a commercially-available CRI pump and attached subpalpebral lavage system (CRI/SPL unit), with the remaining solution stored in the commercial glass vial. Three CRI/SPL units and their 3 corresponding vials were stored at 23°C, 33°C, and 40°C. Fungal and aerobic bacterial cultures were performed on all solutions on the first and last storage day. Samples obtained at regular intervals were analyzed for voriconazole concentration using high-performance liquid chromatography.

3. Results
No bacterial or fungal contamination was identified in any solution. All solutions stored in the glass vial remained stable throughout the study. Voriconazole concentration significantly increased (by 35–134%) after passage through the SPL and several units became blocked with precipitate ($p < 0.05$).

4. Discussion
Voriconazole 1% solution was not compatible with CRI/SPL delivery but remained stable when stored in the commercial glass vial.

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Conflict of Interest
The Authors declare no conflicts of interest.

Footnote
a Vfend I.V., Pfizer Pharmaceuticals, New York, NY 10017.