Precision Dosing Summary Report

Saarland University

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# Precision Dosing Summary Report for Voriconazole

for Patient: 2

Date: 30.04.2025
Report version: 0.1

developed by
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# 1 General Information

This application is driven by physiologically-based pharmacokinetic (PBPK) models and predicts patient-specific pharmacokinetics of Voriconazole taking individual characteristics, such as age, weight, pharmacogenetics and drug-drug interactions into account.

# 2 Input

## 2.1 Patient related information

This section provides an overview of the patient demographics and relevant genetic information for pharmacogenes associated with the drug response provided to the system. Based on respective covariates, the PBPK model predicts the pharmacokinetics of Voriconazole.

### 2.1.1 Patient Demographics

Table 1: Demographic information of patient 2

| ID | Age | Weight | Height | Sex | Ethnicity |
|---|---|---|---|---|---|
| 2 | 60 | 40 | 150 | female | asian |

### 2.1.2 Genetics

Table 2: Genetic information of patient 2

| Gene | Genotype |
|---|---|
| CYP2D6 | 2x*1/2x*2 |

## 2.2 Dosing Data

The following table displays the administration schedules of Voriconazole and the perpetrator drugs provided to the system. This dosing schedule is used to calculate individual Voriconazole pharmacokinetics.

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Table 3: Dosing information for Voriconazole and perpetrator drugs

| Drug | Date | Clock time | Dose [mg] |
|---|---|---|---|
| Cimetidine | 2025-04-28 | 08:00:00 | 100 |
| Voriconazole | 2025-04-28 | 08:00:00 | 95 |
| Voriconazole | 2025-04-28 | 18:00:00 | 95 |
| Cimetidine | 2025-04-29 | 08:00:00 | 100 |
| Voriconazole | 2025-04-29 | 08:00:00 | 95 |
| Voriconazole | 2025-04-29 | 18:00:00 | 95 |
| Cimetidine | 2025-04-30 | 08:00:00 | 100 |
| Voriconazole | 2025-04-30 | 08:00:00 | 95 |
| Voriconazole | 2025-04-30 | 18:00:00 | 95 |
| Cimetidine | 2025-05-01 | 08:00:00 | 100 |
| Voriconazole | 2025-05-01 | 08:00:00 | 95 |
| Voriconazole | 2025-05-01 | 18:00:00 | 95 |
| Cimetidine | 2025-05-02 | 08:00:00 | 100 |
| Voriconazole | 2025-05-02 | 08:00:00 | 95 |
| Voriconazole | 2025-05-02 | 18:00:00 | 95 |

# 3 Results

## 3.1 Dose simulations

The pharmacokinetics of Voriconazole are calculated for different predefined doses. Results are displayed in the following figures and tables.

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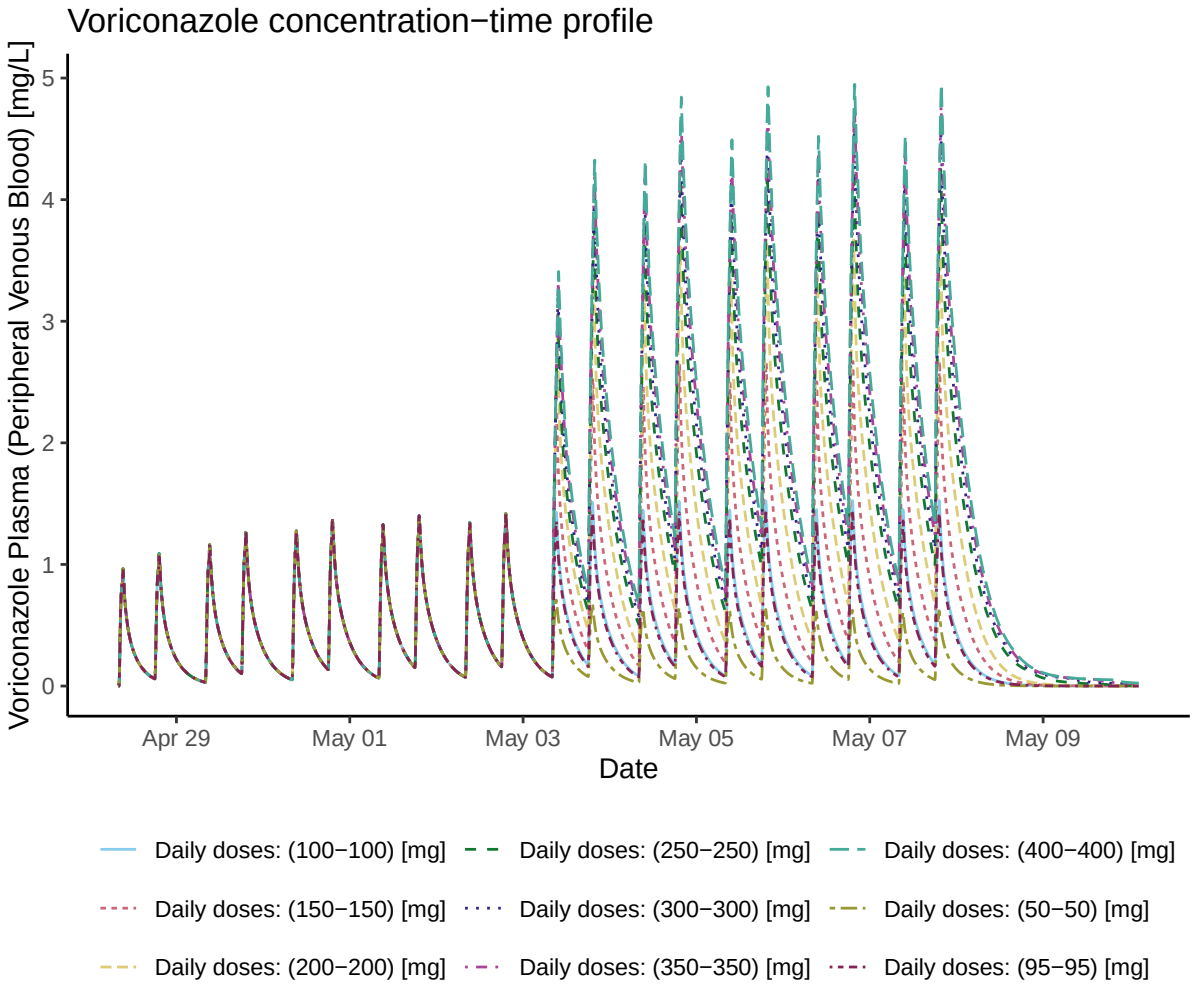


Table 4: Pharmacokinetic parameters of Voriconazole estimated for different dosing schedules

| Dose [mg] | AUC [days * mg/L] | $C_{max}$ [mg/L] | $C_{trough}$ [mg/L] | $C_{ss,\ average}$ [mg/L] | Steady state |
|---|---|---|---|---|---|
| (100-100) | 0.51 | 1.53 | 0.08 | 0.51 | yes |
| (150-150) | 0.96 | 2.67 | 0.20 | 0.96 | yes |
| (200-200) | 1.50 | 3.67 | 0.38 | 1.50 | yes |
| (250-250) | 1.95 | 4.26 | 0.63 | 1.95 | yes |
| (300-300) | 2.17 | 4.54 | 0.73 | 2.17 | yes |
| (350-350) | 2.34 | 4.77 | 0.80 | 2.34 | yes |
| (400-400) | 2.48 | 4.95 | 0.87 | 2.48 | yes |
| (50-50) | 0.19 | 0.62 | 0.02 | 0.19 | yes |
| (95-95) | 0.48 | 1.42 | 0.08 | 0.48 | yes |

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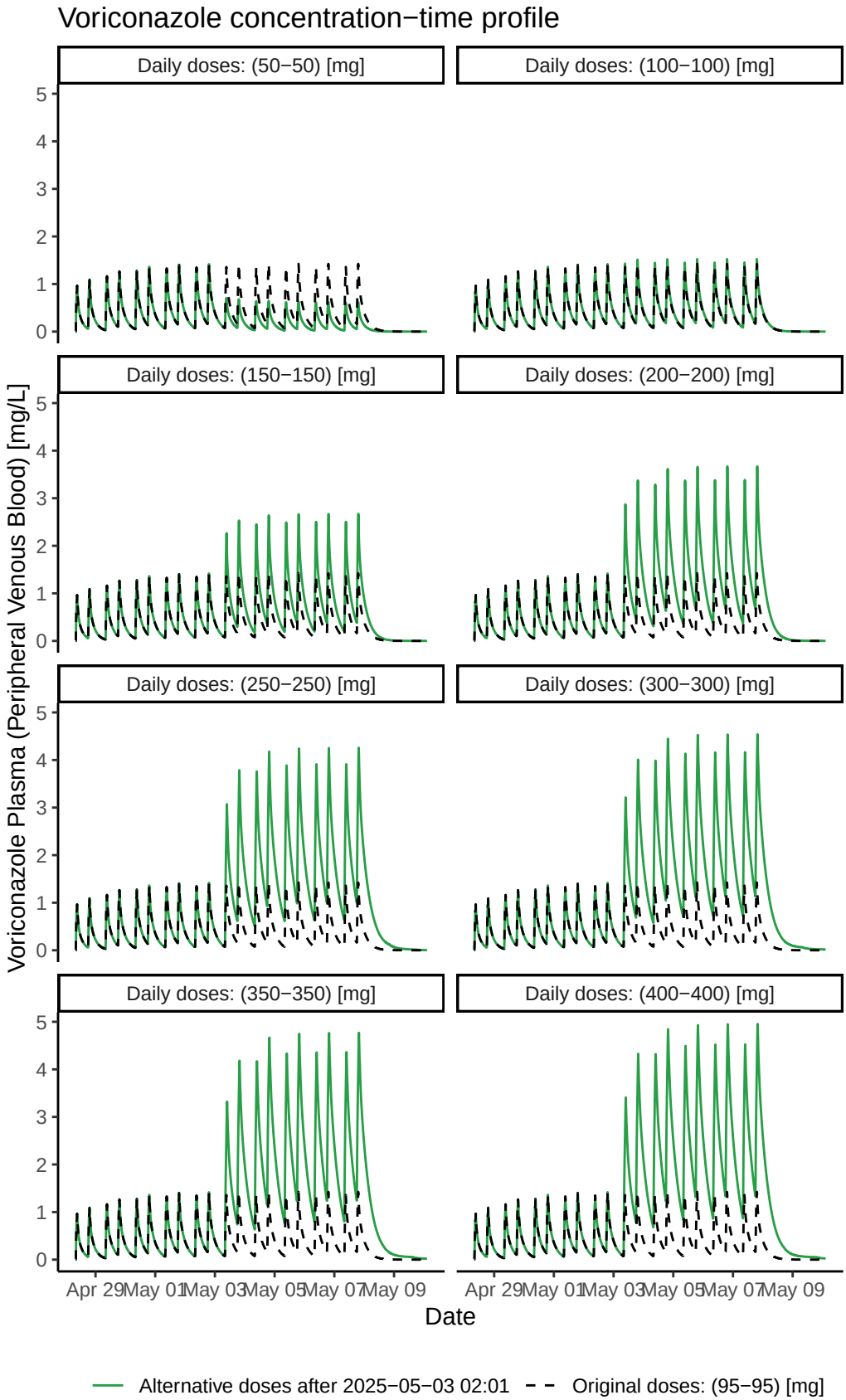


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