

Predicting drug exposure in kidney transplanted patients using machine learning

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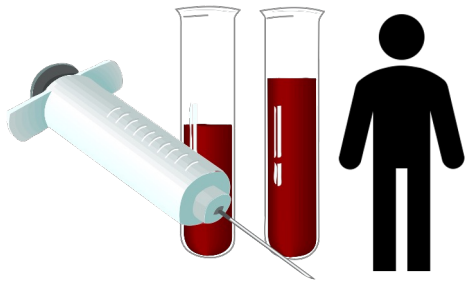
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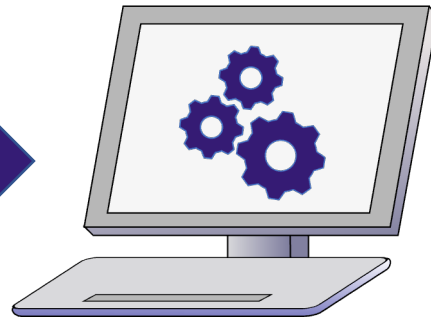
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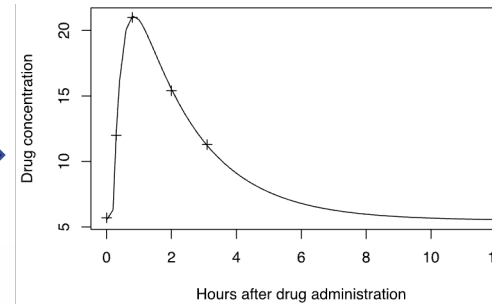
Blood sampling at flexible times



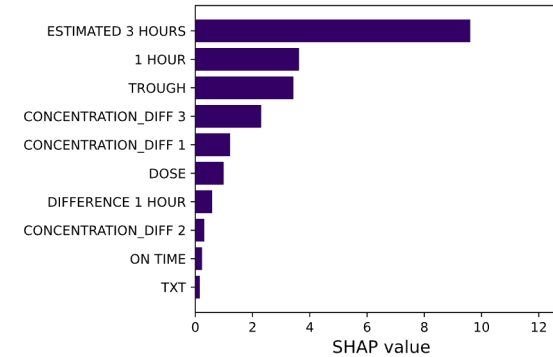
Model analyses data



Predict drug exposure



Predictions explained

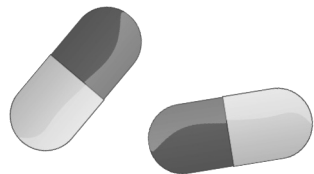


The problem

Finding the correct tacrolimus dose for individual patients following kidney transplantation is difficult. Tacrolimus is among the most commonly used drugs after kidney transplantations. A tool for predicting tacrolimus exposure would have tremendous value in the clinic.

What we do

Apply detailed clinical data from 93 kidney transplanted patients to develop ML models for predicting tacrolimus exposure. Limited blood samples and flexible sampling times for applicability in real-life. Externally evaluate the models on data from 7 new patients, explain the models using feature importances.



Main challenges

Limited amount of training data.
Increase the amount using synthetic data generation.
Other techniques for handling flexible time?

