A Clinical Quantitative Systems Pharmacology Framework Describing Loncastuximab Tesirine Distribution and to Explore Patient Outcomes From the LOTIS-2 Clinical Trial in Patients With B-cell Lymphomas

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Aim: We aimed at establishing a virtual population reflecting clinical variability in CD19 expression level and surface density. It is crucial for understanding patient heterogeneity and to design personalized dosing regimens in clinical trials.

INTRODUCTION
A novel QSP framework integrating PBPK modeling with tumor dynamics was developed using literature and in-house data. This model explained the reduction in tumor volume via FcRn expression levels and the impact of increased CD19 expression level on the tumor cell's response to Lonca.

METHODS
Overview of QSP Modeling Strategy
The QSP model was developed using a virtual population reflecting clinical variability in CD19 expression level and surface density. The model was used to explore patient responses and to develop personalized dosing regimens in clinical trials.

OBJECTIVES
The objective of this study was to develop a virtual population reflecting clinical variability in CD19 expression level and surface density. The model was used to explore patient responses and to develop personalized dosing regimens in clinical trials.

RESULTS
- CD19 expression level alone is a poor predictor of response to Lonca.
- Model explanation: Patient has a reduced systemic FcRn expression level

CONCLUSIONS
A novel QSP framework integrating PBPK modeling with tumor dynamics was developed using literature and in-house data. This model explained the reduction in tumor volume via FcRn expression levels and the impact of increased CD19 expression level on the tumor cell's response to Lonca.

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References