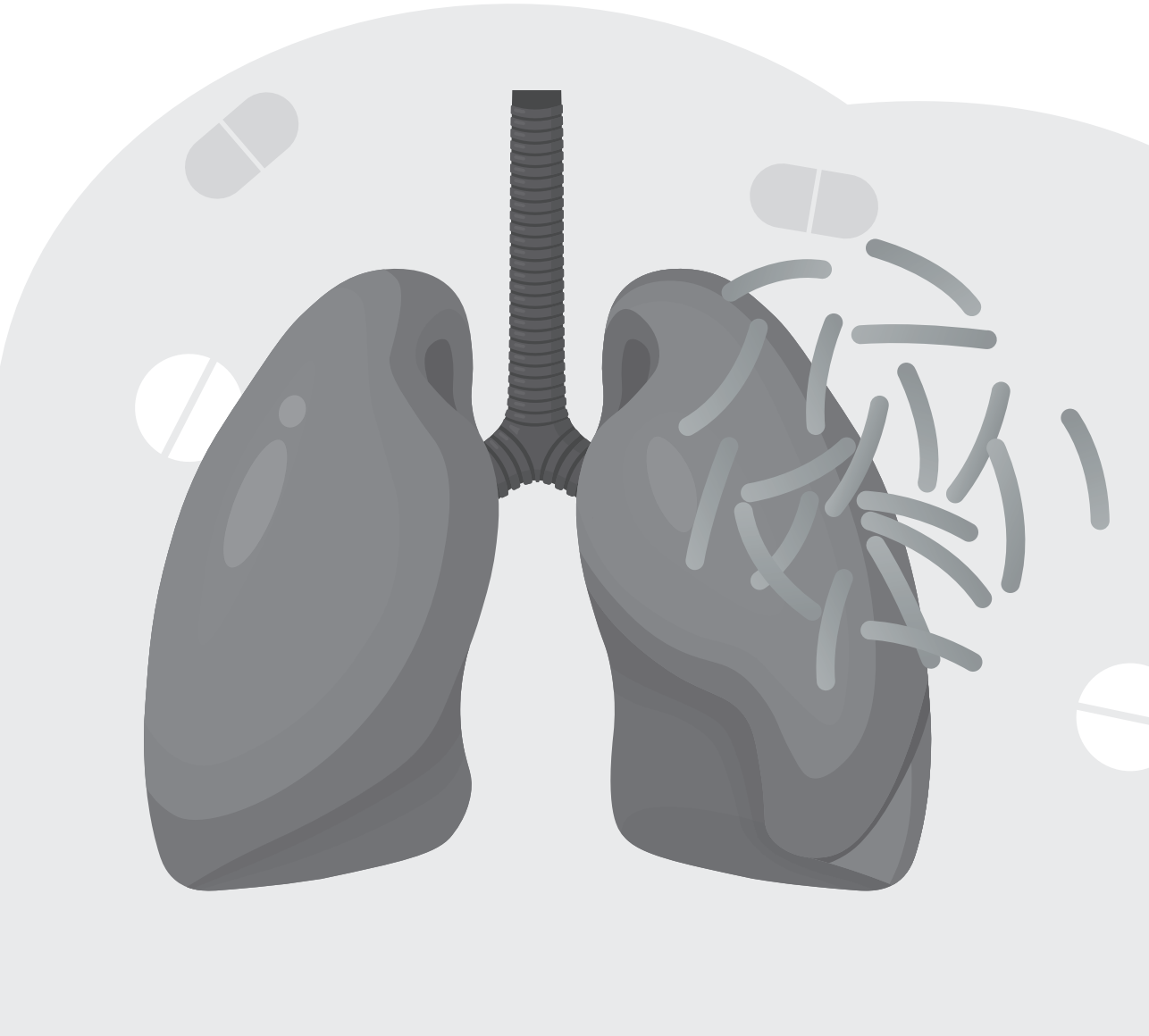
Quantitative pharmacology approaches to inform treatment strategies against tuberculosis

Mehta, K.

Section VI.

Appendices



Curriculum vitae

Krina Mehta (1983, Bhavnagar, Gujarat, India) obtained her Bachelor of Pharmacy (BPharm) degree from the Saurashtra University, Gujarat, in 20004. Krina moved to the United States in 2005 and worked as a pharmacovigilance scientist and regulatory documentation scientist for approximately 10 years. Her work in these areas helped her gain a deep understanding of drug development, clinical trials and regulatory processes. In 2015, Krina enrolled in a Master's program in Pharmacometrics program at the University of Maryland, where she received broad training in the field of pharmacometrics, with a focus on strategic applications of pharmacometrics in drug development. In 2016, while pursuing her master's degree, Krina started working as a pharmacometrics contractor, where she performed population PK modeling, R shiny application development, first-in-human dose predictions, and exposure-response modeling. In 2018, Krina joined qPharmetra LLC as an a pharmacometrics consultant and contributed to several projects by utilizing pharmacometrics approaches to support decision making and regulatory submissions.

In 2021, Krina started her PhD program at Leiden University, The Netherlands, under supervision of Coen van Hasselt and Piet van der Graaf, in parallel to her main positions at qPharmetra. Here, the project was focused on the use of model-based approaches in optimization of treatments against tuberculosis. Krina joined Kyowa Kirin Inc as a pharmacometrics scientist in 2020, and as of January 2024, Krina became Director, Pharmacometrics at Kyowa Kirin Inc. In her role at Kyowa Kirin, she has supported incorporation of pharmacometric and quantitative systems pharmacology (QSP) approaches for effective and efficient drug development for innovative modalities in oncology and rare disease.

List of publications

Journal Publications

1. Mehta, K, Balazki P, van der Graaf, PH, Guo, T,van Hasselt, JGC. Predictions of bedaquiline central nervous system exposure in tuberculosis meningitis patients using physiologically-based pharmacokinetic modeling. Clin Pharmacokinet. 2024 Mar 26. doi: 10.1007/s40262-024-01363-6.
2. Mehta, K, Guo, T, van der Graaf, PH, van Hasselt, JGC. Model-based dose optimization framework for bedaquiline, pretomanid and linezolid for the treatment of drug-resistant tuberculosis. Br J Clin Pharmacol. 2023; 1-12. doi:10.1111/bcp.15925.
3. Mehta, K., Guo, T., van der Graaf, P.H. et al. Predictions of Bedaquiline and Pretomanid Target Attainment in Lung Lesions of Tuberculosis Patients using Translational Minimal Physiologically Based Pharmacokinetic Modeling. Clin Pharmacokinet 62, 519–532 (2023). doi:10.1007/s40262-023-01217-7.
4. Mehta K, Narayanan N, Heysell SK, Bisson GP, Subbian S, Kurepina N, Kreiswirth BN, Vinnard C. Pharmacogenetic variability and the probability of site of action target attainment during tuberculosis meningitis treatment: A physiologically based pharmacokinetic modeling and simulations study. Tuberculosis (Edinb). 2022 Dec; 137:102271. doi: 10.1016/j.tube.2022.102271.
5. Mehta K, Guo T, Wallis RS, van der Graaf PH, van Hasselt JGC. Quantitative Systems Pharmacology Modeling Framework of Autophagy in Tuberculosis: Application to Adjunctive Metformin Host-Directed Therapy. Antimicrob Agents Chemother. 2022 Aug 16;66(8):e0036622. doi: 10.1128/aac.00366-22.
6. Mehta K, Spaink HP, Ottenhoff THM, van der Graaf PH, van Hasselt JGC. Host-directed therapies for tuberculosis: quantitative systems pharmacology approaches. Trends Pharmacol Sci. 2022 Apr;43(4):293-304. doi: 10.1016/j.tips.2021.11.016.
7. Oni-Orisan, A., Srinivas, N., Mehta, K., Das, J.L., Nguyen, T.T., Tison, G.H., Bauer, S.R., Burian, M., Funk, R.S., Graham, R.A. and (2021), Leveraging innovative technology to generate drug response phenotypes for the advancement of biomarker-driven precision dosing. Clin Transl Sci, 14: 784-790. doi: 10.1111/cts.12973.
8. Mehta K, Ravimohan S, Pasipanodya J, et al. (2019). Optimizing ethambutol dosing among HIV/tuberculosis co-infected patients: a population pharmacokinetic modelling and simulation study. The Journal of antimicrobial chemotherapy. doi: 10.1093/jac/dkz265.

Conference Posters

1. Mehta K, Storopoli J, Ramwani N, et al., Burosumab treatment-induced increases in serum phosphate are associated with reduction in fracture counts in adults with x-linked hypophosphatemia as assessed with graded item response analysis. Poster ACoP · Nov 11, 2023.
2. Mehta K, Barriere O, Gosselin NH, et al., Burosumab treatment-induced increases in serum phosphate provide improvements in patient reported outcomes in adults with x-linked hypophosphatemia as assessed with graded item response analysis. Poster ACoP · Nov 2, 2022.
3. Mehta K, Patel D, Vupugalla R, et al., Rationale for the clinical use of less frequent dosing of mogamulizumab for T-cell lymphomas using population pharmacokinetic and exposure response analysis. Poster American Society of Hematology 2021 Conference. Abstract 2475 · Dec 12, 2021.
4. Mehta K, Koshiba S, Hasegawa M, et al., Population pharmacokinetic-pharmacodynamic analysis of KHK2455 in patients with locally advanced or metastatic solid tumors. Abstract 1368. Poster AACR 2021, July 01, 2021.
5. Mehta K and Vinnard C. Impact of SLCO1B1 genotype and single nucleotide polymorphism on rifampin pharmacokinetics using linkage analysis and physiologically-based pharmacokinetic (PBPK) modeling approach. Poster ACoP10, October 2019.

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I am grateful for my parents, Ullas and Haresh Shah, for their unconditional love and for always believing in me. I thank my children, Krisha and Keval Mehta, for their love and enthusiasm as I pursued this PhD. Lastly but most importantly, I want to express gratitude to my husband, Jinesh Mehta, for being by my side and providing unwavering support through all the highs and lows. Jinesh, you always encouraged me to push the limits, whether conquering challenging mountain hikes or embarking on this ambitious journey of pursuing a PhD alongside other responsibilities.

Thank you,

Krina