

A Brief Report on the Alumni Interaction Series 2021 - Lecture 3

Date: 28.08.2021

Time: 3.00 p.m.

Name of the Invited Alumni and Affiliation	Dr M Surulivel Rajan, MPharm., PhD., Associate Professor Department of Pharmacy Practice Manipal College of Pharmaceutical Sciences Manipal University, Manipal, Karnataka
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As a part of the Alumni interactions 2021, third in the series was held on 28.08.2021 by one of the proud Alumnus of Department of Pharmacy Practice, Dr. M Surulivel Rajan who currently works as an Associate Professor at Department of Pharmacy Practice, Manipal College of Pharmaceutical Sciences, Manipal. Dr. Rajan has done PhD in the field of Population Pharmacokinetics and has post-doctoral experience from the University of North Texas Health Sciences Centre, USA. He currently holds the position of Vice-president in the Society of Pharmacometrics and Health Analytics (SOPHAS) and is the board member of the Asian Pharmacometrics Network. With a keen interest in the areas of clinical pharmacokinetics, pharmacometric modelling & simulation and pharmacotherapy, he stands today as one of the pioneers of pharmacometrics in India with a remarkable experience in teaching and academic research with 60+ publications in renowned national & international journals and a number of awards and recognitions from various organisations.

Through this digital platform shared with the staff, PharmD interns and clerkship students of JSS College of Pharmacy Ooty, Dr. Rajan rendered an eye-opening talk on "Pharmacometrics - How much we know and where it can lead to?". He elucidated some of his striking research in the area, to emphasize how pharmacometrics can be a great support to optimise patient outcomes in pharmaceutical care. The specific research work explained by him included the following.

1. A Systematic Evaluation of Effect of Adherence Patterns on the Sample Size and Power of a Clinical Study: This study utilised the Medication Event Monitoring System (MEMS) to track the medication adherence of the patients. The adherence trends were then utilised to understand the impact of adherence in the PK-PD of the drug by linking the Markov Chain model of adherence to a population pharmacokinetic/pharmacodynamic (PK/PD) simulations of the anti-HIV drug. This model was leveraged to explain the impact on the sample size and power of the study. The study was conclusive that the varying adherence patterns significantly impact the sample size and power of the study. Hence, it was demonstrated to the audience that pharmacometrics can be utilised to effectively design a clinical trial by incorporating all the necessary aspects that influence the trial.

2. Tenofovir Plasma Concentration from Preexposure Prophylaxis at the Time of Potential HIV Exposure: This study used the adherence data collected using the Medication Event Monitoring System (MEMS), and time of sexual activity was collected using the mobile phone short message service (SMS) along with the two plasma samples collected at a single study visit and integrated them by a pharmacokinetic (PopPK) model to simulate tenofovir plasma concentrations from at the time of sexual activity. Pre exposure prophylaxis coverage was estimated as the number of reported sexual events during which simulated concentrations were above a threshold concentration associated with a high degree of protection from HIV infection. This pragmatic delivery model for antiretroviral-based HIV prevention clearly justified the application of pharmacometrics in direct patient care to ensure optimal therapeutic outcomes to the virtual audience.

At the end of the interaction the audience were intrigued by the outstanding role that the novel field of pharmacometrics can play in healthcare and appreciated the need to expand the knowledge in the country. With a short question and answer session, the session was completed. Dr Arun KP coordinated the session by introducing the speaker to the audience and also proposed the vote of thanks.

Report Submitted by: Dr. Arun K P, Associate Professor, Department of Pharmacy Practice