



SUSANNA EDITH MEDELLÍN GARIBAY

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Born in San Luis Potosí, San Luis Potosí, México (Apr-1984)

BioEstadística, S.C., Associate consultant, 2018 to present.

SUMMARY

- PhD degree with specialization in clinical and population pharmacokinetics.
- Expertise in pharmacokinetics, bioavailability/ bioequivalence analysis, data management, regulatory guidance and write reporting.
- Application of a broad range of clinical pharmacology tools for non-compartmental and compartmental pharmacokinetic analysis such as Phoenix WinNonLin, NONMEM, and other PK/PD analysis software.
- Proficiency in dataset construction and performing pharmacokinetics, bioavailability/ bioequivalence studies and statistical data analysis.
- Internal and external validation tools for PK modeling.
- Experience in Therapeutic Drug Monitoring, limited sampling strategies design and stochastic simulations for dosage regimen proposal.
- Full knowledge and hands-on developing quantitative LC-MS/MS or UV/Vis methods, as well as solving bioanalytical problems.
- Regression analysis - univariate and multivariate linear regression, non-linear regression including binomial, logistic, and Poisson, linear models (generalized and hierarchical – including mixed effects, random effects, and fixed effects).
- Categorical data analysis, non-parametric statistical methods (Wilcoxon signed rank test, Mann-Whitney test, Kruskal Wallis test, Friedman's test, Kolmogorov test, contingency tables, Chi-square and Fisher Exact Test, ANOVA, etc.).
- Advanced user of MS Office products including Outlook, PowerPoint, Excel, and Word.
- Written, verbal and inter-personal communications skills.

PROFESSIONAL EXPERIENCE

- **POSTDOCTORAL RESEARCH SCIENTIST | UNIVERSIDAD COMPLUTENSE DE MADRID | NOV 2014 – OCT 2015 (1 YEAR)**
 - Population pharmacokinetics of antibiotics: modeling and simulation in special populations (3 related manuscripts published at JAC and AAC journal).
 - Advanced user of NONMEM, PKS and BestDose software.
 - Interpretation of relevant clinical pharmacology and pharmacokinetic data (Therapeutic Drug Monitoring at Hospital Universitario "Severo Ochoa" (Leganes, Spain)).
- **ASSOCIATE RESEARCH FELLOW | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ | JAN 2016 – DEC 2017**
 - Pharmacokinetic modeling and simulations in special populations (Critically Ill Patients, Neonates, Children with Acute Lymphoblastic Leukemia, Psychiatric and Transplanted patients).
 - Development of analytical methods for drugs and metabolites quantification in serum or plasma by LC-MS/MS and HPLC-UV/Vis.

- **ASSOCIATE RESEARCH FELLOW | HOSPITAL CENTRAL “DR. IGNACIO MORONES PRIETO” | JAN – OCT 2018**
 - Supervise research projects of clinical and population pharmacokinetics.
 - Therapeutic Drug Monitoring, Clinical Pharmacy and Pharmacology.
- **ASSOCIATE RESEARCH FELLOW | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ | NOV 2018 – OCT 2019**
 - Assigned to Faculty of Chemical Sciences and promoted for Retention through Support Program for the incorporation of Scientists linked to the Institutional Consolidation of Research Groups and/or National Postgraduate Programs by CONACYT (Grant C-891/2018).
 - Pharmacokinetic modeling and simulations of antibiotics in special populations
 - Therapeutic Drug Monitoring of antimicrobial agents
 - Development of analytical methods for drugs and metabolites quantification in serum or plasma by LC-MS/MS and HPLC-UV/Vis.
- **FULL-TIME RESEARCH PROFESSOR LEVEL VI | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ | JAN 2020 – TO DATE**
 - Assigned to Faculty of Chemical Sciences and Chemical Pharmacobiological Pregraduate program
 - Head lab at Biopharmaceutics and Pharmacokinetics Laboratory
 - Professor and tutor at Postgraduate program of Pharmacobiological Sciences (Biostatistics and Systems Pharmacology intercourses)
 - Line of generation and knowledge application of “Biopharmaceutical and pharmacokinetic studies for rational use of medications”
 - Coordinator in Mexico of the Iberoamerican Pharmacometrics Network (RedIF)

EDUCATION

- **BACHELOR CHEMISTRY AND PHARMACY | 2008 | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ**
 - General area: Natural Sciences
 - Specialty: Pharmacokinetics; Analytical Chemistry
 - Main work related: Pharmacokinetics of Rifampicin in Mexican Patients with Tuberculosis and Healthy Volunteers. *Journal of Pharmacy and Pharmacology*. 2014;66(10):1421-8. DOI: 10.1111/jphp.12275
- **MASTER OF SCIENCE | 2010 | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ**
 - General area: Basic Biomedical Sciences
 - Specialty: Pharmacokinetics; Analytical Chemistry
 - Main work related: Limited Sampling Strategies to predict the Area under the Concentration-Time Curve for Rifampicin. *Therapeutic Drug Monitoring*. 2014;36(6):746-51. DOI: 10.1097/FTD.000000000000093.
- **DOCTOR OF PHILOSOPHY | 2014 | UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ**
 - General area: Basic Biomedical Sciences
 - Specialty: Population and Clinical Pharmacokinetics; Analytical Chemistry; Immunology
 - Main work related: Clinical Pharmacokinetics of Rifampicin in Patients with Tuberculosis and Type 2 Diabetes Mellitus: Association with Biochemical and Immunological Parameters. *Antimicrob Agents Chemother*. 2015; 59(12): 7707-7714. DOI:10.1128/AAC.01067-15

HONORS AND AWARDS

- **MEMBER OF THE NATIONAL SYSTEM OF RESEARCHERS (SNI) | NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY (MEXICO) | JAN 2016 – TO DATE**
 - Level 1
 - Area III – Medicine and Health Sciences

TRAINING COURSES COMPLETED

- Academic extension course “Population Pharmacokinetic Studies” [in Spanish] at Universitat de Barcelona, Spain (July 2013).
- Training course “Individualized Pharmacotherapy: Pharmacogenetics and Pharmacokinetics” [in Spanish] at Autonomous University of San Luis Potosi, Mexico (Jan 2016).
- Training course for initial users “Introduction to Mass Spectrometry and XEVO-TQD Systems” [in Spanish] by Waters Corp., Mexico (Jan 2016).
- Intensive training program on “Intermediate Nonmem Methods” at the University of Minnesota with Richard C. Brundage (Aug 2016).
- Course “Design and evaluation of Bioequivalence studies” [in Spanish] at Autonomous University of San Luis Potosi, Mexico (Nov 2016).
- Workshop in “Pharmacokinetics and Pharmacodynamics modelling” [in Spanish] at Universidad de Valencia, Spain (Nov 2016).
- Training course for intermediate users “Developing LC-MS methods” [in Spanish] by Waters Corp., México (Jan 2017).
- Course “Pharmacogenomics” [in Spanish] organized by National Institute of Genomics Medicine from Autonomous National University of Mexico (Mar – Jun 2017).
- Training course “Monolix Suit Workshop” in Iberoamerican Network of Pharmacometrics Congress at University of Guadalajara, Mexico (Nov 2018).

SOME PUBLICATIONS

32 DOCUMENTS | 202 CITATIONS | H-INDEX: 9 | RG SCORE: 27.44

- Milán-Segovia RC, Dominguez-Ramirez AM, Jung-Cook H, Magana-Aquino M, Romero-Mendez MC, Medellín-Garibay SE, Vigna-Perez M and Romano-Moreno S Relative bioavailability of rifampicin in a three-drug fixed-dose combination formulation. *Int J Tuber Lung Dis.* 2010;14:1454-1460.
- Milán-Segovia RC, Vigna-Perez M, Romero-Mendez MC, Medellín-Garibay SE, Vargas-Morales JM, Magana-Aquino M and Romano-Moreno S. Relative bioavailability of isoniazid in a fixed-dose combination product in healthy Mexican subjects. *Int J Tuber Lung Dis.* 2014;18:49-54.
- Medellín-Garibay SE, Correa-López T, Romero-Méndez C, Milán-Segovia RC, Romano-Moreno S. Limited Sampling Strategies to predict the Area under the Concentration-Time Curve for Rifampicin. *Ther Drug Monit.* 2014;36(6):746-51. DOI: 10.1097/FTD.000000000000093.
- Medellín-Garibay SE, Milán-Segovia RC, Magaña-Aquino M, Portales-Pérez DP, Romano-Moreno S. Pharmacokinetics of Rifampicin in Mexican Patients with Tuberculosis and Healthy Volunteers. *J Pharm and Pharmacol.* 2014;66(10):1421-8. DOI: 10.1111/jphp.12275

- Salazar-González R, Gómez-Ortega R, Romano-Moreno S, Medellín-Garibay SE, Núñez-Ruíz A, Magaña-Aquino M, Milán-Segovia RC, Portales-Pérez DP. Expression of NAT2 in immune system cells and the relation of NAT2 gene 1 polymorphisms in the anti-tuberculosis therapy in Mexican mestizo population. *Molec Biol Rep.* 2014;41(12):7833-43. DOI: 10.1007/s11033-014-3677-5
- Medellín-Garibay SE, Rueda-Naharro A, Peña-Cabia S, García B, Romano-Moreno S, Barcia E. Population pharmacokinetics of gentamicin and dosing optimization for infants. *Antimicrob Agents Chemother.* 2015;59(1):482-9. DOI: 10.1128/AAC.03464-14
- Flores-Ramírez R, Medellín-Garibay SE, Castillo CG, Ilizaliturri-Hernández CA, Zuki-Orozco BA, Batres-Esquivel L, Díaz-Barriga F. Application of Focused Ultrasound-Assisted Extraction to the Determination of Persistent Organic Pollutants (POPs) in Soil Samples. *Bull Environ Contam Toxicol.* 2015;95(2):207-14. DOI: 10.1007/s00128-015-1545-1
- Medellín-Garibay SE, Cortez-Espinosa N, Milán-Segovia RC, Magaña-Aquino M, Vargas-Morales JM, González-Amaro R, Portales-Pérez DP, Romano-Moreno S. Clinical Pharmacokinetics of Rifampicin in Patients with Tuberculosis and Type 2 Diabetes Mellitus: Association with Biochemical and Immunological Parameters. *Antimicrob Agents Chemother.* 2015;59(12):7707-7714. DOI:10.1128/AAC.01067-15
- Medellín-Garibay SE, Ortiz-Martin B., Rueda-Naharro A., Garcia B., Romano-Moreno S., Barcia E. Pharmacokinetics of vancomycin and dosing recommendations for trauma patients. *J Antimicrob Chemother.* 2016; 71(2): 471-479. DOI:10.1093/jac/dkv372
- Corral-Fernández NE, Cortez-Espinosa N, Salgado-Bustamante M, Romano-Moreno S, Medellín-Garibay SE, Solís-Rodríguez M, Hernández-Castro B, Macías-Mendoza J, González-Amaro R, Portales-Pérez DP. Induction of transcription factors, miRNAs and cytokines involved in T lymphocyte differentiation in BCG-vaccinated subjects. *Mol Immunol.* 2016;77:44-51. DOI: 10.1016/j.molimm.2016.07.006.
- Flores-Ramírez R, Pérez-Vázquez FJ, Rodríguez-Aguilar M, Medellín-Garibay SE, Van Brussel E, Cubillas-Tejeda AC, Carrizales-Yáñez L, Díaz-Barriga F. Biomonitoring of persistent organic pollutants (POPs) in child populations living near contaminated sites in Mexico. *Science of The Total Environment.* 2017; 579: 1120–1126. doi: 10.1016/j.scitotenv.2016.11.087
- Corral-Fernández NE, Cortes-García JD, Rivas-Santiago B, Romano-Moreno S, Medellín-Garibay SE, Magaña-Aquino M, Salazar-Gonzalez RA, Gonzalez-Amaro R, Portales Pérez DP. Analysis of transcription factors, microRNAs and cytokines involved in T lymphocyte differentiation in patients with tuberculosis after directly observed treatment short-course. *Tuberculosis.* 2017;105:1-8. DOI: 10.1016/j.tube.2017.03.007
- Medellín-Garibay SE, Romano-Moreno S, Tejedor-Prado P, Rubio-Álvaro N, Rueda-Naharro A, Blasco-Navalpotro MA, García B, Barcia E. Influence of Mechanical Ventilation on Vancomycin Pharmacokinetics Administered by Continuous Infusion in Critically Ill Patients. *Antimicrob Agents Chemother.* 2017;61(12):e01249-17. DOI: 10.1128/AAC.01249-17.
- Lima-Rogel V, López-López E, Medellín-Garibay SE; Gómez-Ruiz L, Romero-Méndez MC, Milán-Segovia RC, Romano-Moreno S. Population Pharmacokinetics of Levetiracetam in Neonates with Seizures. *J Clin Pharm Ther.* 2018;43(3): 422-429. DOI: 10.1111/jcpt.12658
- Flores-Ramírez R, Pérez-Vázquez FJ, Medellín-Garibay SE, Vallejo-Perez MR. Exposure to Mixtures of Pollutants in Mexican Children from Marginalized Urban Areas. *Annals of Global Health.* 2018;82(2):1-7. DOI: 10.29024/aogh.912.

- Espinosa-Reyes G, Costilla-Salazar R, Pérez-Vázquez FJ, González-Mille, DJ, Flores-Ramírez, R, Cuevas-Díaz, MC, Medellín-Garibay, SE, Ilizaliturri-Hernández CA. DNA damage in earthworms by exposure of Persistent Organic Pollutants in low basin of Coatzacoalcos River, Mexico. *Science of the Total Environment*. 2019;651(15):1236-1242. DOI: 10.1016/j.scitotenv.2018.09.207
- Reséndiz-Galván JE, Medellín-Garibay SE, Milán-Segovia RC, Niño-Moreno PC, Isordia-Segovia J, Romano-Moreno S. Dosing Recommendations based on Population Pharmacokinetics of Tacrolimus in Mexican Adult Patients with Kidney Transplant. *Basic & Clinical Pharmacology & Toxicology*. 2019;124(3):303-311. DOI: 10.1111/bcpt.13138
- Huerta-García AP, Medellín-Garibay SE, Salazar-González RA, Ortiz-Álvarez A, Magaña-Aquino M, Rodríguez-Pinal CJ, Portales-Pérez DP, Romano-Moreno S, Milán-Segovia RC. Anthropometric and genetic factors associated with the exposure of rifampicin and isoniazid in Mexican patients with tuberculosis. *Therapeutic Drug Monitoring*. 2019;41(5):648-656. DOI: 10.1097/FTD.0000000000000631
- Reséndiz-Galván JR, Romano-Aguilar M, Medellín-Garibay SE, Milán-Segovia RC, Chevaile-Ramos A, Romano-Moreno S. Determination of mycophenolic acid in human plasma by ultra-performance liquid chromatography-tandem mass spectrometry and its pharmacokinetic application in kidney transplant patients. *Biomedical Chromatography*. 2019;33(12):e4681. DOI: 10.1002/bmc.4681
- Rodríguez-Aguilar M, Ramírez-García S, Ilizaliturri-Hernández C, Gómez-Gómez A, Van-Brussel E, Díaz-Barriga F, Medellín-Garibay SE, Flores-Ramírez R. Ultrafast gas chromatography coupled to electronic nose to identify volatile biomarkers in exhaled breath from COPD patients: A pilot study. *Biomedical Chromatography*. 2019;33(12):e4684. DOI: 10.1002/bmc.4684
- Medellín-Garibay SE, Hernández-Villa N, Correa-González LC, Morales-Barragán MN, Valero-Rivera KP, Ortiz-Zamudio JJ, Milán-Segovia RC, Romano-Moreno S. Population Pharmacokinetics of Methotrexate in Mexican Pediatric Patients with Acute Lymphoblastic Leukemia. *Cancer Chemotherapy and Pharmacology*. 2020;85:21-31. DOI: 10.1007/s00280-019-03977-1
- Aréchiga-Alvarado NA, Medellín-Garibay SE, Milán-Segovia RC, Ortiz-Álvarez A, Magaña-Aquino M, Romano-Moreno S. Population Pharmacokinetics of Amikacin Administered Once Daily in Patients with Different Renal Functions. *Antimicrob Agents Chemother*. 2020;64:e02178-19. DOI: 10.1128/AAC.02178-19
- Hernández-Mitre MP, Medellín-Garibay SE, Rodríguez-Leyva I, Rodríguez-Pinal CJ, Zarazúa S, Jung-Cook HH, Roberts JA, Romano-Moreno S, Milán-Segovia RC. Population Pharmacokinetics and Dosing Recommendations of Levetiracetam in Adult and Elderly Patients with Epilepsy. *Journal of Pharmaceutical Sciences*. First published: January 2020. DOI: 10.1016/j.xphs.2020.02.018
- Reséndiz-Galván JE, Romano-Aguilar M, Medellín-Garibay SE, Milán-Segovia RC, Niño-Moreno PC, Jung-Cook H, Chevaile-Ramos JA, Romano-Moreno S. Population pharmacokinetics of mycophenolic acid in adult kidney transplant patients under prednisone and tacrolimus regimen. *European Journal of Pharmaceutical Sciences*. 2020; 150:105370. DOI: 10.1016/j.ejps.2020.105370
- Huerta-García AP, Medellín-Garibay SE, Ortiz-Álvarez A, Magaña-Aquino M, Rodríguez-Pinal CJ, Portales-Pérez DP, Romano-Moreno S, Milán-Segovia RC. Population pharmacokinetics of isoniazid and dose recommendations in Mexican patients with tuberculosis. *International Journal of Clinical Pharmacy*. First pub.: July 7, 2020. DOI: 10.1007/s11096-020-01086-1
- Medellín-Garibay SE, Huerta-García AP, Rodríguez-Báez AS, Magaña-Aquino M, Ortiz-Álvarez A, Portales-Pérez DP, Milán-Segovia RC, Romano-Moreno S. A population approach of

rifampicin pharmacogenetics and pharmacokinetics in Mexican patients with tuberculosis. *Tuberculosis*. 2020;101982:1-8. DOI: 10.1016/j.tube.2020.101982

- Hernández-Mitre MP, Medellín-Garibay SE, Rodríguez-Leyva I, Rodríguez-Pinal CJ, Zarazúa S, Jung-Cook HH, Parker SL, Romano-Moreno S, Milán-Segovia RC. Determination of Levvetiracetam in Plasma by a Modified HPLC-UV Method and Its Pharmacokinetic Application. *Mathews Journal of Pharmaceutical Science*. 2020;04(01):1-7. DOI: 10.30654/MJPS.10004
- Hernández-González O, Zarazúa S, Veytia-Bucheli JI, González-Chávez MM, Rodríguez-Pinal CJ, Medellín-Garibay SE, Uresti-Rivera EE, Pérez-Vázquez FJ, Portales-Pérez DP, Romano-Moreno S, Milán-Segovia RC. Quantification of pyrazinamide, isoniazid, acetyl-isoniazid, and rifampicin by a high-performance liquid chromatography method in human plasma from patients with tuberculosis. *Journal of Separation Science*. First published: 16 November 2020. DOI: 10.1002/jssc.202000672
- Pérez-Gutiérrez RM, Rodríguez-Clavel IS, Paredes-Carrera SP, Sánchez-Ochoa JC, Muñoz Ramírez A, Medellín-Garibay SE, Paz-García EJ. Synthesis of keratine, silver, and flavonols nanocomposites to inhibit oxidative stress in pancreatic beta-cell (INS-1) and reduce intracellular reactive oxygen species production. *Arabian Journal of Chemistry*. First published: 09 December 2020. DOI: 10.1016/j.arabjc.2020.102917
- Huerta-García AP, Rodríguez-Báez AS, Medellín-Garibay SE, Portales-Pérez DP, Martínez-Martínez MU, Abud-Mendoza C, Herrera Van Oostdam D, Romano-Moreno S, Milán-Segovia RC. Methotrexate Triglutamate as a Determinant of Clinical Response in Mexican Patients with Rheumatoid Arthritis: Pharmacokinetics and dose Recommendation. *The Journal of Clinical Pharmacology*. First published: 17 February 2021. DOI: 10.1002/jcph.1837

ARTICLES IN PRESS

- Rodríguez-Báez AC, Huerta-García AP, Medellín-Garibay SE, Rodríguez-Pinal CJ, Martínez-Martínez MU, Herrera-Van Oostdam D, Abud-Mendoza C, Romano-Moreno S, Milán-Segovia RC. Clinical differences based on therapeutic drug monitoring of low-dose methotrexate administered daily or weekly for rheumatoid arthritis treatment. Draft. Current Status (date): Under Review (12 Feb 2021).
- Lima-Rogel V, Olguín-Mexquitic L, Kühn-Córdova I, Correa-López T, Romano-Aguilar M, Romero-Méndez MC, Medellín-Garibay SE, Romano-Moreno S. Meropenem Pharmacokinetics in Neonates with Severe Nosocomial Infections. Draft. Current Status (date): Under review (15 Feb 2021)

OTHER

- **JOURNAL REVIEWER**
 - Clinical pharmacokinetics (2016)
 - PLOS ONE (2017)
 - AAPS Journal (2017)
 - Journal of Pharmacy and Pharmacology (2018)
 - Infectious Disease (2019)
 - Journal of Clinical Pharmacy and Therapeutics (2020)
 - Frontiers in Pharmacology (2021)