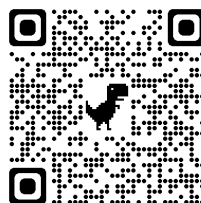


CURRENT RESEARCH TOPICS IN PHARMACY: *Therapeutic Drug Monitoring*

March 29th, 2023 13.00 PM ISTANBUL



FOR REGISTRATION:

First Session- Moderator: Esra TATAR 13.00-14.30 PM

Welcome- Prof. Mesut Sancar
Marmara University, Istanbul, Türkiye

Analytical techniques used for therapeutic drug monitoring – Dr.Mohd Younis Rather
Government Medical College Srinagar, Srinagar, India

Combination of therapeutic drug monitoring and genotyping in pharmacotherapy- Prof.Halit Sinan Süzen
Ankara University, Ankara Türkiye

Therapeutic drug monitoring of antipsychotics – Assist.Prof.Ana V. Pejic
University of Kragujevac, Kragujevac, Serbia

Second Session – Moderator: Betül OKUYAN 15:00-16.30 PM

How to avoid perils and pitfalls when reading epidemiological studies– Dr.Pamela Xaverius
University of Health Science and Pharmacy in St.Louis, USA

Current themes in immunosuppressive therapies: TDM research and practice -Assist.Prof.Abdikarim Abdi
Yeditepe University, Istanbul, Türkiye

TDM of antimicrobials : Role of clinical pharmacist- Assist. Prof. Emre Kara
Hacettepe University, Ankara, Türkiye

Chair

Prof. Hatice Kübra ELÇİOĞLU

Vice Chairs

Prof. Levent KABASAKAL & Assoc. Prof. Esra TATAR

ORGANIZING & SCIENTIFIC COMMITTEE

Editorial Board of Journal of Research in Pharmacy
<https://www.jresopharm.com/>

JRP

Journal of Research in Pharmacy

An international open-access journal of pharmacy and pharmaceutical sciences
Formerly published as Marmara Pharmaceutical Journal

ONLINE
SYMPOSIUM

CURRENT RESEARCH TOPICS IN PHARMACY: *Therapeutic Drug Monitoring*

March 29th, 2023 13.00 PM ISTANBUL

ORGANIZING & SCIENTIFIC COMMITTEE

Editorial Board of Journal of Research in Pharmacy

<https://www.jrespharm.com/>

Esra Tatar
(Vice Chair of Organizing Committee)
Marmara University, Istanbul, Türkiye

Levent Kabasakal
(Vice Chair of Organizing Committee)
Marmara University, Istanbul, Türkiye

Ayşe Nur Hazar Yavuz
(Secretary)
Marmara University, Istanbul, Türkiye

Abdikarim Mohammed Abdi
Yeditepe University, Istanbul, Türkiye

Afiye Büşra Uğur Kaplan
Atatürk University, Erzurum, Türkiye

Ahmet Emir
Ege University, Izmir, Türkiye

Ali Demir Sezer
Marmara University, Istanbul, Türkiye

Ammad Ahmad Farooqi
Institute of Biomedical and Genetic Engineering (IBGE), Islamabad, Pakistan

Ana V. Pejić
University of Kragujevac, Kragujevac, Serbia

Anil Kumar Dwivedi
Central Drug Research Institute, Lucknow, India

Anisa Elhamili
University of Tripoli, Tripoli, Libya

Annalisa Chiavaroli
G. d'Annunzio University of Chieti-Pescara, Chieti, Italy

Antoaneta Trendafilova
Bulgarian Academy of Sciences, Sofia, Bulgaria

Ayça Toprak Semiz
Giresun University, Giresun, Türkiye

Ayfer Beceren
Marmara University, Istanbul, Türkiye

Ayşe Esra Karadağ
Istanbul Medipol University, Istanbul, Türkiye

Aysenur Günaydin Akıldiz
Bezmi Alem Vakıf University, Istanbul, Türkiye

Bahadır Bülbül
Düzce University, Düzce, Türkiye

Betul Okuyan
Marmara University, Istanbul, Türkiye

Bezza Ecem Öz Bedir
Ankara Yıldırım Bayezit University, Ankara, Türkiye

Burcu Üner
The University of Health Science and Pharmacy in St. Louis, USA

Büşra Ertas
Marmara University, Istanbul, Türkiye

Ceren Emir
Ege University, Izmir, Türkiye

Claudio Ferrante
G. d'Annunzio University of Chieti-Pescara, Chieti, Italy

Debora Dummer Meira
Federal University of Espirito Santo, Vitória-Espirito Santo, Brazil

Derya Özsavcı
Marmara University, Istanbul, Türkiye

Dhanashree P. Sanap
Bharati Vidyapeeth's College of Pharmacy, Navi Mumbai, India

Dinesh Kumar
Indian Institute of Technology (BHU), Varanasi, India

Ebru Altıntaş
Istanbul University, Istanbul, Türkiye

Ela Hoti
University of Medicine, Tirana, Albania

Emine Terzi
Ankara Yıldırım Bayezit University, Ankara, Türkiye

Emirhan Nemutlu
Hacettepe University, Ankara, Türkiye

Emrah Özakar
Atatürk University, Erzurum, Türkiye

Enkelejda Goci
Aldent University, Tirana, Albania

Entela Halocli
University of Medicine, Tirana, Albania

Erkan Rayaman
Marmara University, Istanbul, Türkiye

Fatima Missoun
University of Mostaganem, Mostaganem, Algeria

Gizem Tatar Yılmaz
Karadeniz Technical University, Trabzon, Türkiye

Gülberk Uçar
Hacettepe University, Ankara, Türkiye

Gülşin Tınaz
Marmara University, Istanbul, Türkiye

Gülşah Gedik
Trakya University, Edirne, Türkiye

Haidar A. Abdulamir
Al-Maaqil University, Basra, Iraq

Hamide Sena Özbay
Hacettepe University, Ankara, Türkiye

Hasan Erdiñç Sellitepe
Karadeniz Technical University, Trabzon, Türkiye

İ. İrem Tatlı Cankaya
Hacettepe University, Ankara, Türkiye

Karem Buran
University of Health Sciences, Istanbul, Türkiye

Klevo Shpati
Albanian University, Tirana, Albania

Klodiola Dhano
Aldent University, Tirana, Albania

Laleh Khodae
Tabriz University of Medical Sciences, Tabriz, Iran

Lejla Klepo
University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Lokman Ayaz
Trakya University, Edirne, Türkiye

Lorena Memushaj
Aldent University, Tirana, Albania

Maja Ortner Hadžiabdić
University of Zagreb, Zagreb, Croatia

Mehmet Gümüştas
Ankara University, Ankara, Türkiye

Merve Kabasakal
University of Health Sciences, Istanbul, Türkiye

Mesut Sancar
Marmara University, Istanbul, Türkiye

Mirela Miraçlı
University of Medicine, Tirana, Albania

Mirjana Marčetić
University of Belgrade, Belgrade, Serbia

Mohd Younis Rather
Government Medical College Srinagar, Srinagar, India

Murat Doğan
Cumhuriyet University, Sivas, Türkiye

Nurhan Tekin
University of Health Sciences, Istanbul, Türkiye

Nurettin Yaylı
Karadeniz Technical University, Trabzon, Türkiye

Ongun Mehmet Saka
Ankara University, Ankara, Türkiye

Oya Kerimoğlu
Marmara University, Istanbul, Türkiye

Pablo Miralles Ibarra
University of Valencia, Burjassot, Spain

Pankaj Dwivedi
The University of Health Science and Pharmacy in St. Louis, USA

Patricia Rijo
Lusofona University, Lisbon, Portugal

Pinar Talay Pinar
Yüzüncü Yıl University, Van, Türkiye

Renuka Khatik
Washington University in St. Louis, USA

Rezarta Shkrel
Aldent University, Tirana, Albania

Rukiye Sevinç Özakar
Atatürk University, Erzurum, Türkiye

Rümeysa Keleş Kaya
Sakarya University, Sakarya, Türkiye

Saeidih Soltani
Isfahan University of Medical Sciences, Isfahan, Iran

Sakine Tuncay Tanrıverdi
Ege University, Izmir, Türkiye

Simone Carradori
G. d'Annunzio University of Chieti-Pescara, Chieti, Italy

Sinan Sermet
Istanbul Arel University, Istanbul, Türkiye

Sneha Agrawal
Bharati Vidyapeeth's College of Pharmacy, Navi Mumbai, Maharashtra, India

Somaiah Soltani
Tabriz University of Medical Sciences, Tabriz, Iran

Tarık Catić
Sarajevo School of Science and Technology, Sarajevo, Bosnia and Herzegovina

Turgut Taşkın
Marmara University, Istanbul, Türkiye

Uğur Karagöz
Trakya University, Edirne, Türkiye

Ünzile Yaman
Katip Çelebi University, Izmir, Türkiye

Viktorija Maksimova
Goce Delcev University, Stip, Republic of N. Macedonia

Vildan Çeliksöy
Cardiff University, Cardiff, UK

Vilma Toska Papajani
University of Medicine, Tirana, Albania

Yeliz Şahin
Ağrı İbrahim Çeçen University, Ağrı, Türkiye

Zahraa Amer Hashim
Mosul University, Mosul, Iraq

Zeina Althanoon
Mosul University, Mosul, Iraq

Zoran Zeković
University of Novi Sad, Novi Sad, Serbia

JRP

Journal of Research in Pharmacy

An international open-access journal of pharmacy and pharmaceutical sciences

Formerly published as Marmara Pharmaceutical Journal

ONLINE
SYMPOSIUM

THERAPEUTIC DRUG MONITORING OF ANTIMICROBIALS: ROLE OF CLINICAL PHARMACISTS

Emre KARA 

Hacettepe University Faculty of Pharmacy, Department of Clinical Pharmacy, Ankara,
Türkiye
emrekara@hacettepe.edu.tr

The main aim of therapeutic drug monitoring (TDM) is to provide effective and safe treatments. Resistance to antimicrobial drugs continues increasing, and no new antibiotic discovery exists. Therefore, using existing antimicrobial drugs in accordance with their pharmacokinetic and pharmacodynamic properties is an important strategy to prevent the development of resistance. TDM is required training to ensure an adequate understanding of the pharmacokinetics, interpretation of drug levels, and patient monitoring. In addition, some institutions may encounter barriers to timely results. Antimicrobial drugs recommended for routine TDM are vancomycin, teicoplanin, amikacin, gentamicin, linezolid, meropenem, voriconazole and posaconazole [1]. Targets are determined mainly by minimum or trough concentrations, but some drugs, such as vancomycin, have targets for the area under the concentration-time curve (AUC). Samples for trough level should be taken after drug concentration reaches a steady state, half an hour or one hour before the next dosing. For AUC calculations, samples are generally required at two different time points. Pharmacists have important roles in TDM. A survey conducted in Australia investigated current practices regarding the role of pharmacists in the TDM process. In this study, it is seen that pharmacists rank second in ordering, evaluating, and interpreting TDM. Pharmacists are mostly involved in the review and interpretation stages. Pharmacists stated the problems in the TDM process as the inappropriate sampling time, sample collection problems, following the TDM results, and inappropriate dose calculations. The most frequently included drugs in the TDM process were determined as aminoglycosides and glycopeptides. In addition, the pharmacist's role is described as

recommendations about TDM ordering, following, and managing TDM results in this study [2]. In an original study about pharmacist-initiated vancomycin monitoring, researchers found that pharmacist protocol may decrease acute kidney injury risk and may increase compliance with weekly monitoring for nephrotoxicity and vancomycin level [3]. In another similar study, researchers observed that pharmacist-driven programs might increase appropriate vancomycin monitoring and patient with level monitoring [4]. The management of TDM by the pharmacist also provides some additional benefits. A single-center study from Portugal determined that pharmacist-controlled TDM saved approximately 370.000 dollars for one year [5]. The roles of the pharmacist can be summarized as follows; providing advice on the TDM, helping with the interpretation of results, initial selection of drug, dose, interval, route of administration, and dosage form, dose adjustments, evaluation of unexpected results, and dose adjustment for patients on dialysis.

Keywords: Drug monitoring; antimicrobials; clinical pharmacist.

REFERENCES

- [1] Abdul-Aziz MH, Alffenaar JC, Bassetti M, Bracht H, Dimopoulos G, Marriott D, Neely MN, Paiva JA, Pea F, Sjovall F, Timsit JF, Udy AA, Wicha SG, Zeitlinger M, De Waele JJ, Roberts JA; Infection Section of European Society of Intensive Care Medicine (ESICM); Pharmacokinetic/pharmacodynamic and Critically Ill Patient Study Groups of European Society of Clinical Microbiology and Infectious Diseases (ESCMID); Infectious Diseases Group of International Association of Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT); Infections in the ICU and Sepsis Working Group of International Society of Antimicrobial Chemotherapy (ISAC). Antimicrobial therapeutic drug monitoring in critically ill adult patients: a Position Paper. *Intensive Care Med.* 2020;46(6):1127-1153. [CrossRef]
- [2] Firman P, Tan KS, Clavarino A, Taing MW, Whitfield K. Pharmacist-Managed Therapeutic Drug Monitoring Programs within Australian Hospital and Health Services-A National Survey of Current Practice. *Pharmacy (Basel).* 2022;10(5):135. [CrossRef]
- [3] Smith AP, Millares-Sipin CA, James M, Cohen H. Impact of a Pharmacist-Initiated Vancomycin Monitoring Program. *Consult Pharm.* 2016;31(9):505-510. [CrossRef]
- [4] Joseph K, Ramireddy K, Madison G, Turco T, Lui M. Outcomes of a pharmacist-driven vancomycin monitoring initiative in a community hospital. *J Clin Pharm Ther.* 2021;46(4):1103-1108. [CrossRef]
- [5] Cardoso P, Santos C, Rocha-Gonçalves F. Therapeutic Drug Monitoring by Pharmacists: Does It Reduce Costs. *Glob J Qual Saf Healthc.* 2020;3(2):69-71. [CrossRef]