



# BEZMİÂLEM science

9<sup>th</sup> ANNUAL  
MEDICAL STUDENTS'  
RESEARCH DAY



14 March 2025

BEZMIALEM  
VAKIF UNIVERSITY

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## Editor in Chief

### Adem AKÇAKAYA

Department of General Surgery, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** drakcakaya@gmail.com

**ORCID:** 0000-0003-3116-7033

## Associate Editors

### Fahri AKBAŞ

Department of Medical Biology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** fakbas@bezmialem.edu.tr

**ORCID:** 0000-0002-3837-250X

### Atilla AKDEMİR

Department of Pharmacology, İstinye University Faculty of Pharmacy, İstanbul, Türkiye

**E-mail:** atilla.akdemir@istinye.edu.tr

**ORCID:** 0000-0001-8416-0471

### Fadlullah AKSOY

Department of Otorhinolaryngology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** aksoyfad@hotmail.com

**ORCID:** 0000-0003-2293-5520

### İbrahim AYDOĞDU

Department of Pediatric Surgery, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** draydogdu@yahoo.com

**ORCID:** 0000-0001-7900-8598

### Muhammed Batuhan AYIK

Department of Psychiatry, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** batuhan.ayik@bezmialem.edu.tr

**ORCID:** 0000-0002-9322-2336

### Simona CAVALU

School of Medicine and Pharmacy, University of Oradea, Oradea, Romania

**E-mail:** simona.cavalu@gmail.com

**ORCID:** 0000-0001-7810-8925

### Hayrettin DAŞKAYA

Department of Anesthesiology and Reanimation, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** h.daskaya@gmail.com

**ORCID:** 0000-0002-0155-1387

### Remzi DOĞAN

Department of Otorhinolaryngology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** dr.remzidogan@gmail.com

**ORCID:** 0000-0001-5627-1342

### Bülent DURDU

Department of Infectious Diseases and Clinical Microbiology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** bulentdurdurdu@gmail.com

**ORCID:** 0000-0002-0244-4006

### Ayşe Filiz GÖKMEN KARASU

Department of Gynecology and Obstetrics, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** afgangmen@gmail.com

**ORCID:** 0000-0001-7480-4691

### Mehmet Ali GÜLTEKİN

Department of Radiology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

**E-mail:** mgultekin@bezmialem.edu.tr

**ORCID:** 0000-0001-7311-6969

### Mehmet Burak GÜNEŞER

Department of Endodontics, Bezmialem Vakıf University School of Dentistry, İstanbul, Türkiye

**E-mail:** mbguneser@bezmialem.edu.tr

**ORCID:** 0000-0003-0896-777X

### Deniz KARA

Department of Orthopaedics and Traumatology, Washington University, Louis, USA

**E-mail:** dkara@email.wustl.edu

**ORCID:** 0000-0003-1515-3600

## Özlem KARA

Department of Endodontics, Bezmialem Vakıf University  
School of Dentistry, İstanbul, Türkiye  
**E-mail:** okara@bezmialem.edu.tr  
**ORCID:** 0000-0002-9878-3917

## Muharrem KISKAÇ

Department of Internal Medicine, Bezmialem Vakıf University  
School of Medicine, İstanbul, Türkiye  
**E-mail:** muharremkiskac@gmail.com  
**ORCID:** 0000-0003-2534-2675

## Çağla KIZILARSLAN HANÇER

Department of Pharmaceutical Botany, Bezmialem University  
Faculty of Pharmacy, İstanbul, Türkiye  
**E-mail:** c.kizilarслан@gmail.com

## Abdurrahim KOÇYİĞİT

Department of Medical Biochemistry, Bezmialem University  
Faculty of Medicine, İstanbul, Türkiye  
**E-mail:** akocuyigit@bezmialem.edu.tr

## Alis KOSTANOĞLU

Department of Physiotherapy and Rehabilitation, Bezmialem  
Vakıf University School of Health Science, İstanbul, Türkiye  
**E-mail:** aliskostanoglu@gmail.com  
**ORCID:** 0000-0002-6912-9836

## Sedat MEYDAN

Department of Medical Anatomy, Bezmialem Vakıf University  
School of Medicine, İstanbul, Türkiye  
**E-mail:** smeydan@bezmialem.edu.tr  
**ORCID:** 0000-0002-1393-3235

## Özlem SU KÜÇÜK

Department of Dermatology, Bezmialem Vakıf University  
School of Medicine, İstanbul, Türkiye  
**E-mail:** ozlemsukucuk2@yahoo.com.tr  
**ORCID:** 0000-0002-1140-9261

## Pınar SOYSAL

Bezmialem Vakıf University, Faculty of Medicine, Department  
of Geriatric Medicine, İstanbul, Türkiye  
**E-mail:** psoysal@bezmialem.edu.tr  
**ORCID:** 0000-0002-6042-1718

## Bahadır TAŞLIDERE

Department of Emergency Medicine, Bezmialem Vakıf  
University School of Medicine, İstanbul, Türkiye  
**E-mail:** btaslidere@bezmialem.edu.tr  
**ORCID:** 0000-0002-5920-8127

## Ali UZUNKÖY

Department of General Surgery, Harran University Faculty of  
Medicine, Şanlıurfa, Türkiye  
**E-mail:** aliuzunkoy@yahoo.com  
**ORCID:** 0000-0002-1857-4681

## Section Editors

### Fatma Betül AKÇAKAYA

Department of Public Health, Bezmialem Vakıf University  
School of Medicine, İstanbul, Türkiye  
**E-mail:** fakcakaya@bezmialem.edu.tr  
**ORCID:** 0000-0003-0079-6574

### Aclan ÖZDER

Department of Family Medicine, Bezmialem Vakıf University  
School of Medicine, İstanbul, Türkiye  
**E-mail:** aozder@bezmialem.edu.tr  
**ORCID:** 0000-0003-2254-1812

## Biostatistics Consultant

### Ömer UYSAL

Department of Biostatistics and Medicine Informatics, Division  
of Basic Medical Sciences, Bezmialem Vakıf University School  
of Medicine, İstanbul, Türkiye  
**E-mail:** omer.uysal@iuc.edu.tr  
**ORCID:** 0000-0002-8833-697X

## Scientific Board

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Department of Pharmaceutical Sciences, North Dakota State  
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**ORCID:** 0000-0002-1977-4685

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Department of Anesthesiology and Reanimation, Bezmialem  
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## Ahmet BELCE

Department of Biochemistry, Biruni University School of Medicine, İstanbul, Türkiye

**ORCID:** 0000-0002-1228-7999

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Department of Physiology, Duisburg University School of Medicine, Duisburg, Germany

**ORCID:** 0000-0001-9585-0531

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Department of Veterinary Physiology, Institute of Veterinary Physiology, University of Zurich, Zurich, Switzerland

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Department of Medical Biochemistry, Bezmialem Vakıf University, İstanbul, Türkiye

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Department of Pediatric Gastroenterology and Hepatology, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Türkiye

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Clinic of Pediatric Oncology, University Medical Center of Schleswig-Holstein, Heidelberg, Germany

**ORCID:** 0000-0002-3778-510X

## Hayat ÖNYÜKSEL

Department of Biopharmaceutical Sciences, UIC Faculty of Pharmacy, Illinois, USA

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Department of Otolaryngology, Bezmialem Vakıf University School of Medicine, İstanbul, Türkiye

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Department of Pharmacy, Al-Zaytoonah University of Jordan School of Pharmacy, Amman, Jordan

## Claudio T. SUPURAN

Department Neuropharma, University of Florence School of Medicine, Firenze, Italy

**ORCID:** 0000-0003-4262-0323

## Arzu TEZVERGİL MUTLUAY

Department of Prosthetic, University of Turku School of Medicine, Turku, Finland

**ORCID:** 0000-0003-0932-8531



# BEZMİÂLEM science

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## Jie ZHOU

Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

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14 MARCH 2025**

**Guest Editor**

**Pinar Soysal**

Bezmialem Vakıf University, Faculty of Medicine,  
Department of Geriatric Medicine





## Programme Coordinators

Rümezya Kazancıoğlu, M.D.  
Mary Catherine Beach, M.D.  
Pınar Soysal, M.D.  
Stephen M. Sozio, M.D.  
Ramazan Özdemir, M.D.

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Professor Dr. Rumezya Kazancıoğlu  
Professor Dr. Pınar Soysal  
and  
Rabia Koç

## Acknowledgements

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## Judges for Presentations 2025

**Rümezya Kazancıoğlu, M.D.**  
Professor of Internal Medicine  
Bezmialem Vakıf University

**Stephen M. Sozio, M.D.**  
Associate Professor of Internal  
Medicine  
Johns Hopkins University

**Mary Catherine Beach, M.D.**  
Professor of Internal Medicine  
Johns Hopkins University

**Kelly Anne Gebo, M.D.**  
Professor of Infectious Disease  
Epidemiology Medicine  
Johns Hopkins University

**Somnath Saha, M.D.**  
Professor of Internal Medicine  
Johns Hopkins University

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Professor of Cardiology  
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Istanbul University

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Professor of Neurosurgery  
Istanbul University – Cerrahpaşa

**İbrahim Tuncay, M.D.**  
Professor of Orthopedics and  
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Acıbadem Mehmet Ali Aydınlar  
University

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Istinye University

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University

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Treatment  
Bezmialem Vakıf University

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Bezmialem Vakıf University

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Professor of Radiology  
Bezmialem Vakıf University

**Halil Şenol, PhD**  
Associate Professor of Pharmaceutical  
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Bezmialem Vakıf University

**Müberra Tanrıverdi, PhD**  
Associate Professor of Physiotherapy  
And Rehabilitation  
Bezmialem Vakıf University

**Nazan Değirmenci, M.D.**  
Associate Professor of Otolaryngology  
Bezmialem Vakıf University

**Semih Güder, M.D.**  
Associate Professor of Dermatological  
And Venereal Diseases  
Bezmialem Vakıf University

**Şeref Gül, PhD**  
Associate Professor of Biotechnology  
Bezmialem Vakıf University

**Abdüsselam Şekerci, M.D.**  
Assistans Professor of Internal Medicine  
Bezmialem Vakıf University

**Ahmet Cingöz, PhD**  
Assistant Professor of Molecular Biology  
Bezmialem Vakıf University

**Aslı Yaman Kula, M.D.**  
Assistant Professor of Neurology  
Bezmialem Vakıf University

**Betül Sümbül Şekerci, PhD**  
Assistant Professor of Clinical Pharmacy  
Bezmialem Vakıf University

**Caner Çağlar, PhD**  
Assistant Professor of Molecular Biology  
Bezmialem Vakıf University

**Muhammed Tunç, M.D.**  
Assistant Professor of Internal Medicine  
Bezmialem Vakıf University

**Onur Emre Onat, PhD**  
Assistant Professor of Molecular Biology  
Bezmialem Vakıf University

**Pınar Bostan, PhD**  
Assistant Professor of Medical  
Education and Science  
Bezmialem Vakıf University



## PREFACE

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Training as a physician demands meticulous attention not only to knowledge and patient care but also to the pursuit of lifelong learning and scholarly endeavors, which are essential to a physician's skillset.

The mission of Bezmialem Vakif University (BVU) is to equip health professionals and scientists with innovative educational models, harnessing modern science and technology within the framework of our cultural values. Our commitment extends to conducting impactful research that translates into tangible products and services while concurrently providing high-quality, accessible healthcare services aimed at elevating the overall health standards of our society.

To this end, in 2014, BVU and Johns Hopkins University (JHU) entered into a collaborative agreement focused on curriculum development, which includes the integration of JHU's Scientific Concentration Module. This collaboration serves not only as a significant milestone but also as a potential blueprint for the enhancement of medical curricula worldwide.

The overarching goals and objectives of our program, comprising six modules, closely mirror those of the esteemed Johns Hopkins program. Commencing in September of the program's inaugural year, which corresponds to the fourth year of BVU medical students, providing a comprehensive overview of the program's objectives and processes. During this phase, students are encouraged to begin contemplating their academic interests, laying the groundwork for their scholarly pursuits.

Through the program, spanning from the first to the sixth module, students are guided through the process of selecting a mentor, formulating a research question, conducting literature reviews, seeking ethics committee approval, collecting and analyzing data, drafting abstracts, and ultimately presenting their projects before the BVU scientific committee. The culmination of this journey occurs at the end of two years, as each student presents their scholarly project at the prestigious Medical Student Research Symposium held in March.

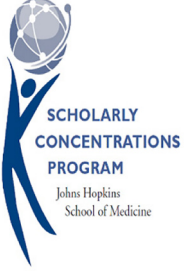
The Bezmialem Science Supplement showcases select presentations endorsed by the faculty of the Academic Concentration Module for oral or poster presentation. Each abstract undergoes rigorous peer-review by both BVU and JHU faculty, reaffirming our commitment to academic excellence and scholarly rigor.

I extend my sincere gratitude to our collaborators at JHU, the dedicated faculty at BVU, and, above all, to our students - the future trailblazers of scientific inquiry. Together, we are all proud to have successfully completed the ninth course, a testament to our collective commitment to excellence and innovation in medical education.

**Pinar Soysal**  
**Bezmialem Vakif University, Faculty of Medicine,**  
**Department of Geriatric Medicine**



# BEZMIÅLEM science



## RESEARCH DAY

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### 14 March 2025

09.00-09.10: Introduction

09.10-10.05: Podium I (Oral Presentation)

10.05-10.15: Break

10.15-11.10: Podium II (Oral Presentation)

11.10-11.20: Break

11.20-12.10: Poster Presentation

12.10-12.40: Break

12.40-13.50: Short Oral Presentation

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# The Vital Role of Scholarly Concentrations in Medical Education: A Johns Hopkins Perspective on Mentoring and Collaboration at Bezmialem Vakif University

✉ Stephen M. SOZIO<sup>1,2,3</sup>, ✉ Mary Catherine BEACH<sup>1,2,4,5</sup>

<sup>1</sup>Johns Hopkins University School of Medicine, Department of Nephrology, Baltimore, United States of America

<sup>2</sup>Johns Hopkins Medical Institutions, Welch Center for Prevention, Epidemiology, and Clinical Research, Baltimore, United States of America

<sup>3</sup>Johns Hopkins Bloomberg School of Public, Department of Epidemiology, Baltimore United States of America

<sup>4</sup>Johns Hopkins Bloomberg School of Public, Department of Health, Behavior and Society, Baltimore, United States of America

<sup>5</sup>Johns Hopkins University School of Medicine, Berman Institute of Bioethics, Baltimore, United States of America

**Keywords:** Scholarly Concentrations programs, mentoring, collaboration

## Introduction

As medical education continues to evolve, there is growing recognition that a well-rounded medical school experience cannot be solely defined by classroom lectures and clinical rotations. Today's medical students must be equipped not only with a mastery of basic and clinical sciences but also with the critical thinking, analytical skills, and intellectual curiosity necessary to contribute to the advancement of medicine. One of the most exciting trends in contemporary medical education is the rise of Scholarly Concentrations programs-academic tracks that allow students to explore research, clinical innovation, public health, or other focused areas of study outside the traditional curriculum (1,2). These programs provide students with the opportunity to engage deeply with a subject of personal or professional interest, all while receiving mentorship and guidance from faculty members (3).

At Johns Hopkins University School of Medicine, we have long understood the importance of scholarly

inquiry and the value of research as an integral part of medical training. The Scholarly Concentrations program at Hopkins has been a transformative experience for many of our students, providing them with the tools and frameworks to engage in meaningful research that can have a lasting impact on their careers (4-6). We were, therefore, thrilled to work with our colleagues at Bezmialem Vakif University Faculty of Medicine on establishing their own Scholarly Concentrations program (7). Watching this program grow and seeing the students of Bezmialem immerse themselves in research has been a truly inspiring experience.

## The Role of Scholarly Concentrations in Shaping Medical Students

The core value of a Scholarly Concentration is its ability to cultivate a mindset of inquiry and discovery in future physicians. Medical education, while rich in its emphasis on patient care and technical knowledge, often leaves

**Address for Correspondence:** MD Stephen Sozio, JJohns Hopkins University School of Medicine, Department of Nephrology; Johns Hopkins Medical Institutions, Welch Center for Prevention, Epidemiology, and Clinical Research; Johns Hopkins Bloomberg School of Public, Department of Epidemiology, Baltimore, United States of America  
**E-mail:** ssozio@jhmi.edu



limited time for students to explore the broader intellectual dimensions of medicine. Traditionally, medical schools have focused on preparing students to diagnose, treat, and manage diseases, but the complexities of modern healthcare demand more. Physicians must not only provide care but also contribute to the knowledge base that informs the practices they adopt.

By encouraging students to pursue a Scholarly Concentration, we give them the opportunity to develop as independent researchers, critical thinkers, and innovators. Research training is vital not only for those students who will become future academic clinicians or basic scientists but also for all physicians. The critical skills learned through scholarly inquiry—such as problem-solving, data analysis, and evidence-based reasoning—are transferable to nearly every aspect of medical practice. Students involved in research are often better equipped to question assumptions, identify gaps in medical knowledge, and approach clinical problems with a nuanced and evidence-based mindset.

Furthermore, the process of engaging in research gives students the chance to develop a deeper understanding of the scientific method. They learn how to formulate research questions, design experiments, analyze data, and interpret results—all while navigating the challenges of working with human subjects, ethical concerns, and the limitations of current scientific knowledge. In the process, students gain confidence in their ability to contribute to the evolving landscape of medical science and healthcare.

At Johns Hopkins, students in our Scholarly Concentrations program work in areas including basic science, clinical research, public health, history of medicine, and (humanism, ethics, education, and the art of medicine). Students are paired with faculty mentors, who guide them through the process of conducting original research, presenting their work at conferences, and publishing their findings. The

program not only provides students with the chance to explore their academic interests but also helps them forge meaningful relationships with faculty who share their intellectual passions.

### **The Collaborative Effort at Bezmialem Vakif University**

When we began discussions with the faculty of Bezmialem Vakif University Faculty of Medicine, we were excited by the prospect of helping to shape their Scholarly Concentrations program. Our experience has shown us how powerful these programs can be in broadening the educational experience of medical students, and we were eager to share our insights and collaborate in a way that could benefit the students at Bezmialem.

The collaboration with Bezmialem has been a rewarding process, not only for the growth of the Scholarly Concentrations program at their institution but also for the faculty involved (8). It has been truly inspiring to see how excited Bezmialem's students are to embark on their research journeys. Many of whom are now actively contributing to the generation of new knowledge. We have watched them grow from curious novices to skilled researchers, developing confidence in their ability to ask the right questions, challenge assumptions, and contribute to ongoing discussions in their chosen fields.

In the early stages of this partnership, we helped Bezmialem faculty design a curriculum that would integrate research with clinical education, ensuring that students had access to high-quality mentorship and resources to carry out meaningful research projects. We also worked together to establish research opportunities that would appeal to a wide variety of interests, ranging from basic science to health policy and global health issues. The flexibility of the program at Bezmialem has allowed students to pursue their individual passions while also contributing to the institution's research culture.

Sozio and Beach. Scholarly Concentrations at Bezmialem

One of the most exciting aspects of our work with Bezmialem has been seeing how the Scholarly Concentrations program has sparked a renewed interest in research among students who might not have otherwise considered it as a potential career path. The program is cultivating a new generation of physicians who are not just trained to practice medicine, but are eager to contribute to the scientific discoveries that will shape the future of healthcare.

### **The Impact on Students and the Medical Community**

Perhaps the most gratifying part of our work with Bezmialem has been watching students gain confidence and enthusiasm for their research projects. Several of them have already published their findings in peer-reviewed journals, presented their work at international conferences, and received accolades for their innovative approaches to addressing medical challenges.

The students at Bezmialem have demonstrated a remarkable level of dedication and enthusiasm, and they have proven that there is a growing hunger for research-driven education in medical schools around the world. In addition, faculty mentorship in this student-centered experience provides a nurturing environment for Bezmialem students to pursue interests, challenge assumptions, and explore research and careers. By fostering a strong research culture through programs like Scholarly Concentrations, institutions like Bezmialem can ensure that their graduates are not only well-versed in the clinical skills required, to be competent physicians but also equipped with the intellectual tools to advance medicine in meaningful ways.

This collaborative effort between Johns Hopkins and Bezmialem reflects a broader trend in medical education: The recognition that medical schools must go beyond training students to be clinicians, and must prepare them to be leaders in a rapidly changing healthcare environment. Research and innovation are key components of that preparation, and the Scholarly Concentrations program is an essential part of this broader vision for medical education.

### **Looking Toward the Future**

As we reflect on our experiences with Bezmialem's Scholarly Concentrations program, we are excited for the future. The program is now in its 11th year, and we have already witnessed the profound impact it has had on the students involved. Their enthusiasm for research, their intellectual curiosity, and their commitment to improving healthcare are truly inspiring. As the program grows and evolves, we look forward to seeing even more students at Bezmialem engage in meaningful research and contribute to the future of medicine.

We are proud to be part of this effort, and are excited to continue working alongside the dedicated faculty at Bezmialem to further develop and expand their Scholarly Concentrations program. We hope that this collaboration serves as a model for other medical schools around the world, demonstrating the transformative power of scholarly inquiry and the critical importance of research in shaping the future of medical education.

### **Conclusion**

In conclusion, the value of Scholarly Concentrations programs cannot be overstated. They provide medical students with the opportunity to engage in research, develop critical thinking skills, and contribute to the ever-evolving field of medicine. Our experience with Bezmialem Vakıf University has reaffirmed our belief in the power of research education and has given us hope for the next generation of physician-scientists, who will lead the way in addressing the healthcare challenges of tomorrow.

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# BEZMÎÂLEM science

**9<sup>th</sup> ANNUAL  
MEDICAL STUDENTS'  
RESEARCH DAY  
14 MARCH 2025**

**ORAL PRESENTATIONS**



## OP-1

## Social Anxiety Disorder, Internet Gaming Disorder and Sleep Disturbances Among Youth

Gamze Şentürk<sup>1</sup>, Songül Derin<sup>2</sup>, Saliha Büşra Selman<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Child and Adolescent Psychiatry, İstanbul, Türkiye

<sup>3</sup>University of Wisconsin-Madison, Human Development and Family Studies, Madison, WI, USA

**Introduction:** Social anxiety disorder (SAD) and internet gaming disorder (IGD) have been receiving growing attention due to their increasing prevalence among youth. This study examined the associations among SAD, IGD, and sleep disturbances in youth, with particular emphasis on the potential role of sleep hygiene and disturbances in these associations.

**Method:** The sample comprised 70 youths aged 11-18 (M=14.49, SD=1.63), including 32 diagnosed with SAD, and 38 in a control group. Participants completed standardized assessments, including the Liebowitz Social Anxiety Scale, IGD Scale-Short Form, Sleep Disturbance Scale for Children, and Sleep Hygiene Index. Path analysis was conducted to evaluate direct and indirect associations, controlling for sociodemographic variables.

**Results:** Compared to controls, youth with SAD scored significantly higher on IGD symptoms, sleep disturbances, and poorer sleep hygiene ( $p<0.001$  for all). Path analysis revealed that SAD status was directly associated with poorer sleep hygiene ( $\beta=1.062$ ,  $p<0.001$ ) and greater sleep disturbances ( $\beta=0.637$ ,  $p=0.003$ ). However, the direct effect of SAD on IGD was not significant ( $\beta=0.239$ ,  $p=0.271$ ). Indirect effects demonstrated that SAD was associated with IGD through both sleep hygiene and sleep disturbances ( $\beta=0.286$ ,  $p=0.005$ ).

**Conclusion:** These findings suggest that adolescents with SAD are at heightened risk for IGD, and sleep hygiene and disturbances play significant roles in this association. The results underscore the necessity of incorporating sleep-related factors into interventions aimed at addressing both SAD and IGD in youth.

**Key words:** Social anxiety disorder, internet gaming disorder, sleep disturbances, sleep hygiene, youth, path analysis

## OP-2

## Are Social Skills the Critical Link Between ADHD and Risky Internet Use?

Fatma Serra Çelik<sup>1</sup>, Saliha Büşra Selman<sup>2</sup>, Songül Derin<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>University of Wisconsin-Madison, Human Development and Family Studies, Madison, WI, USA

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Child and Adolescent Psychiatry, İstanbul, Türkiye

**Introduction:** Previous studies have linked attention-deficit/hyperactivity disorder (ADHD) with risky internet use (RIU), but the mechanisms behind this association are not fully understood. This research aims to investigate the role of social skills as a potential pathway between ADHD diagnosis and RIU, while accounting for demographic factors.

**Method:** The study included 142 children aged between 6-12 years, divided into two groups: a case group of 71 children diagnosed with ADHD and a control group of 71 children without ADHD. Both groups completed the scales assessing RIU use and social skills.

**Results:** A significant association was indicated between an ADHD diagnosis and social skills ( $\beta=1.685$ ,  $p<0.001$ ), as well as between social skills and RIU ( $\beta=-0.57$ ,  $p<0.001$ ). Furthermore, although the direct path between ADHD diagnosis and RIU was not significant ( $\beta=0.52$ ,  $p=0.080$ ), ADHD diagnosis was indirectly linked to higher levels of RIU through social skills (indirect path  $\beta=-0.966$ ,  $p<0.001$ ). The analysis accounted for potential confounders, including gender, birth timing, age of speech onset, household income, parental education levels, and the total number of siblings.

**Conclusion:** The study emphasizes the critical role of social skills in the association between ADHD and RIU, showing that social skills contribute significantly to RIU among children with ADHD. The observed non-significant path from ADHD to RIU, alongside the significant indirect path through social skills, highlights the importance of improving social skills in interventions aimed at reducing RIU in children with ADHD. These findings offer valuable guidance for clinicians in targeting social deficits to better support individuals at risk of RIU.

**Key words:** ADHD, social skills, risky internet use, children

## OP-3

# The Investigation of the Anti-Inflammatory and Immunomodulatory Effects of Işgın (*Rheum Ribes L.*) Extract

Sara Gizem MELENP<sup>1</sup>, Ezgi BALKAN<sup>2</sup>, Abdurrahim KOÇYİĞİT<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Biochemistry, İstanbul, Türkiye

**Introduction:** *Rheum ribes L.* is a perennial herb from the Polygonaceae family, native to mountainous regions of Türkiye and has shown anti-oxidant, anti-diabetic, anti-cancer, and anti-ulcer effects in various studies. However, its anti-inflammatory and immunomodulatory effects have not been fully elucidated. This study aims to demonstrate the anti-inflammatory and immunomodulatory effects of *Rheum ribes L.* extract in lipopolysaccharide (LPS)-stimulated RAW264.7 Macrophages.

**Method:** Fresh *Rheum ribes L.* were dried at 40° C and extracted using 80% ethanol. Total flavonoid and phenolic contents were determined using quercetin and gallic acid standards. The Western blot method was used to determine nuclear factor-kappa B (NF-κB) activity and nitric oxide synthase (iNOS) levels in LPS-induced RAW264.7 macrophage cells. The extract's effects on pro-inflammatory cytokines were evaluated using the ELISA method.

**Results:** The extract was found to contain 161 mg/g gallic acid equivalents of total phenols and 40 mg/g quercetin equivalents of total flavonoids. It exhibited cytotoxic effects on macrophage cells at doses above 75 µg/mL, while demonstrating significant proliferative effects at doses below this threshold. In the LPS-induced inflammation model, the extract notably starting from a dose of 5 µg/mL reduced IFN-γ and TNF-α levels at 60 µg/mL and 75 µg/mL doses, while suppressing the pro-inflammatory cytokine IL-1β. In LPS-induced macrophage cells, the *Rheum ribes* extract decreased NF-κB protein expression levels in a dose-dependent manner.

**Conclusion:** *Rheum ribes* has been identified as a promising agent for the suppression of inflammation. Its dose-dependent efficacy suggests significant potential as an alternative anti-inflammatory treatment.

**Key words:** Rhubarb, inflammation, immunomodulatory, *in vitro*, *Rheum ribes L.*

## OP-4

## Determination of Frequency and Risk Factors of Secondary Malignancy Development in Hematological Malignancies

Ennur RAMADAN<sup>1</sup>, Güven ÇETİN<sup>2</sup>, Özge PASİN<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, Division of Hematology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** The objective of the present study was to reveal the incidence of secondary malignancies (SMs) in patients with hematological malignancies, analyze the potential risk factors, and determine which factors are associated with the development of SMs.

**Method:** This retrospective single-center study included 299 patients diagnosed with hematological malignancies who were treated at the Hematology Clinic of Bezmialem Vakıf University Hospital between February 2012 and May 2024. Clinical and demographic parameters were compared between the study (n=51) and control (n=248) groups.

**Results:** Among the 299 patients with hematological malignancies, the median follow-up was 70 months [95% CI (46.7-93.2)], the median age 64 years (range 24-89), and 154 (51.50%) were female. Among these 51 cases of SM, the mean time to secondary malignancy development was 103.61 months [95% CI (88.7-118.4)]. Synchronous tumors were observed in 11 patients (21.6%), while 40 patients (78.4%) had metachronous tumors. In the multivariate logistic regression analyses, a family history of cancer [ $p<0.001$ , OR=21.90, 95% CI (7.30-65.64)], no relapse [ $p=0.02$ , OR=5.18, 95% CI (1.27-21.16)], and no radiotherapy [ $p=0.02$ , OR=2.44, 95% CI (1.15-5.20)] were associated with an increased risk of secondary cancer. No significant difference in overall survival was observed between the groups ( $p=0.18$ ). The mean time to relapse for hematologic malignancies was 106.6 months [95% CI (98.8-114.4)]. SM patients had a longer time to relapse than controls ( $p=0.004$ ).

**Conclusion:** These findings highlight the importance of early screening, long-term follow-up, and a multidisciplinary approach in the management of patients from the time of initial diagnosis.

**Key words:** Secondary malignancy, hematological malignancies, incidence, risk factors

## OP-5

## Correlation of GBP2 Expression with Histopathological and Clinical Findings in Prevalent Glomerulopathies

Zeynep Nur KARACA<sup>1</sup>, Ganime ÇOBAN<sup>2</sup>, Özlem TOLUK<sup>3</sup>, Meltem GÜRSU<sup>4</sup>, Ömer Celal ELÇİOĞLU<sup>4</sup>, Rumeyza KAZANCIOĞLU<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Nephrology, İstanbul, Türkiye

**Introduction:** Glomerulopathies are major contributors to chronic kidney disease, including IgA nephropathy (IGAN), membranous glomerulonephritis (MGN), focal segmental glomerulosclerosis (FSGS), and diabetic nephropathy (DN). The immune system plays a pivotal role in glomerulopathy pathogenesis, yet mechanisms remain unclear. Studies highlight GBP2 protein's involvement, secreted from M1 macrophages; in DN, GBP2 inhibits NOTCH-1 signaling, enhancing macrophage accumulation; in Lupus Nephritis, GBP2 expression is linked to interferon pathways. This study explores the histopathological and clinical impact of GBP2 expression in prevalent glomerulopathies.

**Method:** One Hundred Fifty-two kidney biopsies (71 males, 81 females) diagnosed with IGAN (46), MGN (34), FSGS (42), and DN (30) at Bezmialem Vakıf University Hospital were included (2014-2023). GBP2 immunohistochemistry was performed on paraffinized sections using a 1:25 antibody and DAB detection. GBP2-stained immunocytes were counted in three high-power fields, and an H score was calculated. The analysis was performed by Kruskal-Wallis tests to assess correlations between GBP2 expression, and histopathological (glomerulosclerosis, atrophy, fibrosis), clinical (proteinuria, hematuria, creatinine doubling time, GFR, glucose), comorbidities, and demographic data.

**Results:** Over a mean follow-up of 26.1 months, immune cell count was highest in DN (4), IGAN (2), and lowest in MGN, and FSGS (1). DN exhibited the highest H score (8.9), followed by IGAN (6.4), MGN (3.9), and FSGS (3.1). Immune cell count and H score were found to be significantly different among the four groups ( $p=0.0017$ ;  $p=0.0026$ ). GBP2 expression correlated positively with hematuria ( $p=0.021$ ), systolic blood pressure ( $p=0.006$ ), and global sclerosis ( $p=0.019$ ), but negatively with follow-up duration ( $p=0.033$ ) and creatinine doubling time in DN ( $p=0.034$ ). No significant correlation with proteinuria response was found ( $p=0.9$ ).

**Conclusion:** GBP2 expression varies across glomerulopathies and was found positively correlated with hematuria, systolic blood pressure, and global sclerosis. It showed a negative correlation with follow-up duration. In DN, GBP2 expression showed a shortening effect on the creatinine doubling time. GBP2 expression is found to not significantly influence the proteinuria response.

**Key words:** Glomerulonephritis, immunohistochemistry, GBP2

## OP-6

## Investigation of the Anti-cancer and Immunomodulatory Effects of Bee Venom in Colorectal Cancer

Gülmira TRABZON<sup>1</sup>, Ezgi BALKAN<sup>2</sup>, Abdurrahim KOÇYİĞİT<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Biochemistry, İstanbul, Türkiye

**Introduction:** Bee venom (apitoxin) has demonstrated multiple biological effects like inhibition of cell proliferation in cancers. This study aimed to investigate specific anti-cancer properties of apitoxin on the cell-mediated immuneresponses utilizing co-culture models with Jurkat-T cells and LoVo colorectal cancer cells to elucidate the mechanisms through which it exerts its immunomodulatory action on cytotoxic T-cells.

**Method:** Total phenolic and flavonoid contents of apitoxin were quantified using gallic-acid and quercetin equivalents, respectively. Cell viability assays (MTT and WST-1) were conducted on Lovo-Luc and Jurkat-T cells. Cytokine levels in direct co-culture environments of Lovo-Luc cells and CD3-CD28 antibody-activated Jurkat-T cells, treated with apitoxin, were measured using ELISA. An activated model was established in Jurkat-T cells using antiCD3/CD28 antibodies, and its confirmation was achieved by measuring nitric oxide levels in cell culture medium with Griess reagent.

**Results:** Total phenolic content of dry apitoxin was found to be 12.5 mg GAEeq/100 mg, and total flavonoid content was 6 mg Queeq/100 mg. Dose of 50 µg/mL, apitoxin killed 50% of LoVo colorectal cancer cells. It exhibited cytotoxic activity on Jurkat-T-cells at doses above 2 µg/mL. Activated T-cells pre-treated with 1 µg/mL of apitoxin exhibited a higher cytotoxic effect on LoVo-cells compared to the untreated control group. Apitoxin with co-cultured supernatants increased significantly levels of proinflammatory cytokines IFN-γ ( $p<0.001$ ), TNF-α ( $p<0.001$ ), and IL-1β ( $p<0.05$ ) at higher doses. Conversely, the anti-inflammatory effect was observed with a lower dose of 0.5 µg/mL ( $p<0.05$ ).

**Conclusion:** Apitoxin has been shown to enhance anti-cancer effects of T-cells against cancer cells in a dose-dependent manner, highlighting its potential as a low-side-effect natural agent capable of boosting the anti-cancer activity of immune cells and serving as an adjuvant in next-generation therapies such as adoptive T-cell therapy.

**Key words:** Bee venom, immunomodulatory effect, immunotherapy, colon cancer

## OP-7

## Evaluation of the Triglyceride-glucose Index (TyG) as a Potential Biomarker for Tongue Squamous Cell Carcinoma

Yusuf Alp AKBAŞ<sup>1</sup>, Remzi DOĞAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Otorhinolaryngology, İstanbul, Türkiye

**Introduction:** The triglyceride-glucose index (TyG) is an established marker of insulin resistance, which has been associated with the development and progression of several cancers. This study aimed to evaluate the TyG index as a potential biomarker for tongue squamous cell carcinoma and hypothesized that elevated TyG index values are associated with this cancer type.

**Method:** A retrospective cohort study was conducted, including 28 patients diagnosed with tongue squamous cell carcinoma (group 1) and 28 healthy controls (group 2). The TyG index was calculated using the formula:  $TyG\ index = \ln [(fasting\ triglycerides\ (mg/dL) \times fasting\ plasma\ glucose\ (mg/dL))/2]$ . Here “ln” refers to the natural logarithm, which is a logarithm with a base of Euler’s number ( $e=2.71828$ ). This ensures the accurate transformation of triglyceride and glucose values into a dimensionless index that can be used for further statistical analysis. The effect of TyG Index on tongue cancer was investigated using the parameters such as sex, age, and body mass index. Differences in TyG index values between groups were analyzed using Student’s t-test.

**Results:** The TyG index was significantly higher in group 1 ( $9.21 \pm 0.46$ ) compared to group 2 ( $8.48 \pm 0.38$ ) ( $p < 0.001$ ). This suggests a strong association between elevated TyG index values and the presence of tongue squamous cell carcinoma.

**Conclusion:** The TyG index may serve as a promising, cost-effective, and easily accessible disease monitoring method for tongue squamous cell carcinoma. Further studies are warranted to validate these findings and explore the clinical utility of the TyG index in early detection and disease monitoring.

**Key words:** Triglyceride-glucose index, tongue squamous cell carcinoma, insulin resistance, biomarker

## OP-8

## Development of Pyruvate Kinase Enzyme Activity Measurement Kit Control Material

Furkan Cihat BATUK<sup>1</sup>, Ömer Faruk ÖZER<sup>2</sup>, Tuğçe YILDIZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biochemistry, İstanbul, Türkiye

**Introduction:** Pyruvate kinase (PK) is a key enzyme in the glycolytic pathway. Its activity is associated with various pathological conditions, making accurate measurement essential for diagnostics and biomarker development. This study aims to develop a control material for PK enzyme activity assays by evaluating the stability of lyophilized serum, whole blood, and plasma samples.

**Method:** Commercially purchased bovine serum and whole blood were included in this study. Initially, PK enzyme activity of samples was measured. Following this, whole blood was centrifuged to separate the plasma, and then the cellular components were washed three times. The resulting hemolysate was diluted with CPDA, distilled water, and sucrose at 1/2 and 1/10 ratios, and the samples were lyophilized. After lyophilization, the samples were reconstituted using the same solutions, and PK enzyme activities were monitored at different time intervals.

**Results:** After lyophilization, the PK enzyme activities of bovine whole blood remained stable for 9 days at a 1/2 dilution ratio, with some samples maintaining stability until day 30. However, at a 1/10 dilution ratio, stability loss was observed. In bovine serum samples, undiluted samples, and those diluted at a 1/2 ratio remained stable up to day 30, while stability loss was observed at a 1/10 dilution ratio.

**Conclusion:** Based on the results, it was observed that bovine whole blood and serum materials remain stable for extended periods at a 1/2 dilution, making them suitable for use as control materials. However, at a 1/10 dilution the results did not demonstrate sufficient stability to develop control materials.

**Key words:** Pyruvate kinase enzyme activity, lyophilization, control material



## OP-9

## Examining the Impact of Minocycline on Facial Nerve Regeneration in Rats Using LC-MS/MS Metabolomic Analysis

Sumera İnci YILMAZ<sup>1</sup>, Sedat MEYDAN<sup>2</sup>, Mukaddes EŞREFOĞLU<sup>3</sup>, Metin DEMİREL<sup>4</sup>, Kübra BAŞOL BAKI<sup>3</sup>, Fatih MARAL<sup>2,5</sup>, Şahabettin SELEK<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Anatomy, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Histology and Embryology, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Biochemistry, İstanbul, Türkiye

<sup>5</sup>Marmara University Faculty of Medicine, Department of Anatomy, İstanbul, Türkiye

**Objectives:** Facial nerve injuries, caused by trauma or disease, present significant socio-economic challenges and often result in prolonged treatment with poor outcomes. Minocycline, a tetracycline with anti-inflammatory and neuroprotective effects, shows potential for promoting nerve regeneration, but its local effects on the facial nerve remain unexplored. Untargeted metabolomics using LC-MS/MS is a powerful approach for studying metabolic changes and gaining insights into nerve regeneration. This study aimed to evaluate minocycline's effects on facial nerve regeneration and explore the impact of different local doses using LC-MS/MS to better understand facial nerve injuries.

**Method:** Right facial nerve paralysis was induced in 26 Wistar Albino rats, divided into three groups: Control, 40 µg minocycline, and 100 µg minocycline. Nerve transection, suturing, and minocycline administration were performed, followed by metabolomic profiling using LC-MS/MS to identify metabolites involved in regeneration. Histological analysis included tissue staining (H&E, methylene blue, modified Gomori's), and nerve fiber content evaluation using Image-J, with statistical analysis via SPSS.

**Results:** Key metabolites such as creatine, which aids neural repair and reduces neuro-inflammation, showed a significant difference in metabolism between the control and 100 µg minocycline groups ( $p < 0.001$ ). Similarly, betaine, a methyl-donor amino acid, also exhibited a significant difference ( $p < 0.05$ ). Histological analysis revealed prominent edema and vacuolar changes in group A, while groups B and C had well-preserved histology with minimal edema. There was no statistically significant difference in nerve fiber density between the groups (group A:  $29 \pm 1.22$ , group B:  $29.60 \pm 1.63$ , group C:  $29.42 \pm 1.48$ ,  $p > 0.05$ ).

**Conclusions:** 100 µg of minocycline was found to be effective on nerve regeneration by enhancing levels of creatine and betaine in the facial nerve tissues.

**Key words:** Facial nerve injury, nerve regeneration, minocycline, mass spectrometry, nerve transection

## OP-10

## The Effect of Adding Oral Resolvin to Patients Undergoing Transforaminal Epidural Steroid Injection for Lumbar Back Pain Treatment

Asude Bengisu ARMAĞAN<sup>1</sup>, Monira RAHİM<sup>2</sup>, Aylin Ceren ŞANLI<sup>2</sup>, Serdar BALSAK<sup>3</sup>, Hale Arkan TUNA<sup>4</sup>, Pınar SOYSAL<sup>5</sup>, Ayda TÜRKÖZ<sup>6</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Anesthesiology and Reanimation, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Radiology, İstanbul, Türkiye

<sup>4</sup>Ümraniye Training and Research Hospital, Clinic of Anesthesiology and Reanimation, İstanbul, Türkiye

<sup>5</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Geriatric Medicine, İstanbul, Türkiye

<sup>6</sup>Medipol Acıbadem District Hospital, Clinic of Anesthesiology and Reanimation, İstanbul, Türkiye

**Introduction:** Inflammatory lumbar back pain is a chronic condition often linked to lumbar disc herniation (LDH). While epidural steroid injections are commonly used, their efficacy is limited. Resolvin, derived from omega-3 fatty acids, has anti-inflammatory properties. This study investigates whether adding oral resolvin enhances the effectiveness of transforaminal epidural steroid injections.

**Method:** A randomized controlled study was conducted. Participants (n=30) were divided into two groups: the control group (group K, n=15) received only epidural steroids, while the study group (group C, n=15) received omega-3 supplementation, (OmePa® DHA Fish Oil) for six months alongside epidural steroids. Patients aged 18-75, classified as ASA I-III, and diagnosed with LDH, were treated with caudal and transforaminal epidural injections. Blood samples were collected pre-procedure, one month post-procedure, and six months post-procedure. Magnetic resonance imaging (MRI) scans were performed pre-procedure and six months post-procedure, and the disc herniation size was measured isovolumetrically using 3D Slicer. Primary outcomes were changes in disc herniation size (MRI); whereas secondary outcomes included numeric rating scale (NRS) pain scores, serum cytokine levels (IL-6, IL-17, IL-1 $\beta$ , TNF- $\alpha$ ), and SF-36 Quality of Life Scale.

**Results:** NRS scores showed significant improvement in both groups at 1 week, 1 month, and 6 months (p=0.001; p<0.01). No significant differences were observed in cytokine levels (TNF- $\alpha$ , IL-6, IL-1 $\beta$ , IL-17) between groups (p>0.05). MRI measurements revealed significant reductions in disc herniation size in both groups (study group: p<0.05; control group: p=0.005; p<0.01), with no significant difference between groups. These findings represent preliminary results from nine patients in each group (total n=18). Further data collection and analysis are ongoing.

**Conclusion:** Patients receiving resolvin with epidural steroid injections showed greater improvement in NRS scores over six months, compared to the control group. However, MRI findings revealed no significant difference in disc herniation size reduction between the two groups.

**Key words:** Inflammatory lumbar back pain, transforaminal steroid injection, oral resolvin, magnetic resonance imaging, cytokine level



# BEZMİÂLEM science

**9<sup>th</sup> ANNUAL  
MEDICAL STUDENTS'  
RESEARCH DAY  
14 MARCH 2025**

**Short Oral Presentations**

## SOP-1

# Determination of Relationship Between Vitamin B12, Homocysteine, and Natriuretic Peptide Levels and Cardiovascular Diseases in Patients with Parkinson's Disease

Sibel ALTUN<sup>1</sup>, Ali Yasin ÇİMEN<sup>2</sup>, Gülşen BABACAN YILDIZ<sup>3</sup>, Birsen ELİBOL<sup>4</sup>, Savaş ÜSTÜNOVA<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Physiology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Neurology, İstanbul, Türkiye

<sup>4</sup>İstanbul Medeniyet University, Faculty of Medicine, Department of Medical Biology, İstanbul, Türkiye

**Introduction:** Parkinson's disease (PD) is a progressive neurodegenerative disease characterized by motor and non-motor symptoms. Recent evidence suggests a possible association between PD and an increased risk of cardiovascular disease (CVD). However, the biochemical mechanisms underlying this association have not been adequately investigated. This study aimed to evaluate the levels of vitamin B12, homocysteine, and B-type natriuretic peptide (BNP) in PD patients compared with controls. Thus, it aims to elucidate the potential role of these parameters as biomarkers for cardiovascular risk in PD.

**Method:** This controlled clinical study included 72 participants, aged 40 years and above, comprising 36 PD patients and 36 age-matched healthy controls. Venous blood samples were collected, processed for serum isolation, and stored at -80° C until analysis day. Homocysteine, BNP, and vitamin B12 levels were measured by enzyme-linked immunosorbent assay. The normality of the data was tested with the Kolmogorov-Smirnov test. The data with normal distribution were analysed by a paired t test, and the data without normal distribution were analysed by the Mann-Whitney U test.

**Results:** Serum BNP levels were significantly lower in PD patients than in controls ( $p < 0.01$ ). Although homocysteine levels were also lower in PD patients than in controls, the difference was statistically insignificant. On the other hand, there was no difference in vitamin B12 levels between the two groups of participants ( $p > 0.05$ ).

**Conclusion:** Our study evaluates PD patients for CVD parameters. Previous studies have suggested that plasma BNP and homocysteine levels increase in a manner consistent with the risk of CVD. However, in our study, both parameters were found to be lower in PD patients than in control participants. Based on our data, we suggest that there is no direct relationship between PD and CVD. However, more large-scale studies are needed to investigate the underlying pathophysiological mechanisms that link PD to CVDs.

**Key words:** Parkinson's disease, cardiovascular risk, biomarkers, vitamin B12, homocysteine, brain natriuretic peptide

## SOP-2

# Accuracy of Intraoperative Sentinel Lymph Node Biopsy in Our Patients with Breast Cancer

Asli BIÇAK<sup>1</sup>, Şeyma YILDIZ<sup>2</sup>, Zühal GÜCİN<sup>3</sup>, Yeliz Emine ERSOY<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Radiology, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of General Surgery, İstanbul, Türkiye

**Introduction:** Sentinel lymph node biopsy (SLNB) is widely used for axillary staging in early-stage breast cancer. However, false-negative or false-positive intraoperative frozen section results may lead to unnecessary second surgeries or axillary dissection (AD), impacting patient morbidity. This study aims to evaluate the accuracy of SLNB by comparing intraoperative frozen section, and final pathology results in patients who underwent SLNB and AD, thereby identifying parameters to improve diagnostic precision and reduce unnecessary surgical intervention procedures.

**Method:** Ninety breast cancer patients who presented at the outpatient clinics of Bezmialem Vakıf University Faculty of Medicine General Surgery between October 2010 and March 2024, were retrospectively analyzed for undergoing SLNB followed by AD. Patients who received neoadjuvant therapy were excluded. Demographic and clinical parameters including age, sex, menopausal status, family history, hormone therapy, tumor type, receptor status (ER, PR, HER2), tumor size, preoperative axillary status, preoperative tumor-nodes-metastasis stage, and presence of distant metastasis were recorded. Intraoperative SLNB frozen section results and final pathology reports were compared.

**Results:** The mean age of the patients was 56.88 years, with the number of SLNs being 2.3, respectively. In 24 patients (26.6), SLNB results were positive (mean 0.345). AD was performed in 13 patients, yielding a total of 43 excised lymph nodes. The mean number of positive nodes was 3.31 (range: 1-15). In three patients, SLNB results were negative, but final pathology results revealed one positive node, for each. In 63 patients (70%), both the SLNB and final results were negative.

**Conclusion:** Our preliminary results suggest that the accuracy of intraoperative frozen section in SLNB may influence subsequent axillary management. Identifying parameters that minimize false results may help reduce the necessity for second surgeries or avoid unnecessary AD, thus improving patient outcomes.

**Key words:** Breast cancer, sentinel lymph node biopsy, frozen section

## SOP-3

# Examination of the Response to Autologous Stem Cell Transplantation in Multiple Myeloma Cases with Laboratory Findings

Beyza Zeynep GÜNDOĞDU<sup>1</sup>, Güven ÇETİN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, Division of Hematology, İstanbul, Türkiye

**Introduction:** Multiple myeloma (MM) is a type of cancer originating from plasma cells in the bone marrow. Myeloma frequently affects areas such as the spine, skull, pelvis, rib cage, shoulders, and hips. This study evaluates the clinical, biochemical, and radiological outcomes of patients who underwent autologous stem cell transplantation (ASCT).

**Method:** MM patients who underwent ASCT and were admitted to the Hematology Department Clinic between January 2012 and March 2024 were retrospectively analyzed. Data obtained from archived records included age, gender, areas affected by the disease, laboratory values at diagnosis (calcium, GFR, beta-2 microglobulin, creatinine), ASCT success rates and numbers, relapse status, disease stage, and the frequency distribution of disease subtypes.

**Results:** Among 94 patients (56 females, 38 males; mean age 60.4), 86 underwent single ASCT and 8 underwent tandem ASCT. The mean survival time was 127 months. Post-transplant laboratory improvements included statistically significant reductions in beta-2 microglobulin levels ( $p<0.001$ ) and creatinine levels ( $p<0.001$ ). Notably, there was a statistically significant increase in the glomerular filtration rate ( $p<0.001$ ). However, the increase in calcium levels after transplantation was not statistically significant ( $p=0.22$ ). Skeletal involvement was observed in 82.4% of patients. Relapse occurred in 50% of cases, with no statistically significant survival difference between single and tandem transplants ( $p=0.644$ ). At diagnosis, 95.7% ( $n=88$ ) of patients presented with at least one positive CRAB criterion. According to the Durie-Salmon staging system, 71.1% of patients were classified as stage 3A or 3B.

**Conclusion:** ASCT significantly improves laboratory parameters in multiple myeloma patients. The lack of a survival advantage of tandem ASCT over single ASCT warrants further investigation. Future studies with larger patient cohorts are recommended to validate these findings.

**Key words:** Multiple myeloma, autologous stem cell transplantation, laboratory findings, relapse rates

## SOP-4

# The Effect of Electromagnetic Field Exposure on Health Parameters and Occupational Performance: A Scale Study

Efehah ÇELİK<sup>1</sup>, Teoman AYDIN<sup>2</sup>, Özge PASIN<sup>3</sup>, Ali Galip DÖNMEZ<sup>4</sup>, Şeyma TEYMUR<sup>5</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Physical Therapy and Rehabilitation, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics and Medical Informatics, İstanbul, Türkiye

<sup>4</sup>Intermed Health Group, Clinic of Family Physician, İstanbul, Türkiye

<sup>5</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Physical Therapy and Rehabilitation, İstanbul, Türkiye

**Introduction:** Electromagnetic fields (EMFs) are generated by electrically charged particles and vary in frequency and intensity. These fields, which can arise from common household and workplace devices, are associated with potential health concerns. Prolonged exposure to EMFs has been implicated in stress, cancer, Alzheimer's, and Parkinson's disease due to its potential to disrupt cellular metabolism, and cause DNA damage. Additionally, EMFs may affect mental well-being and productivity, posing significant risks for individuals exposed in occupational settings. This study aims to investigate the impact of occupational EMF exposure on various health parameters, including mental and physical well-being, and work productivity. Furthermore, the study seeks to emphasize the importance of developing preventive measures to mitigate the risks associated with long-term EMF exposure.

**Method:** This cross-sectional study was conducted at Bezmialem Vakıf University Health Practice and Research Hospital and involved 98 participants from various departments. Participants were classified into three groups based on their exposure levels: low, medium, and high EMF exposure. EMF measurements were performed using a WAVECONTROL SMP2 device, and data on health parameters were collected. Pain levels were assessed using the VAS, while depression and anxiety levels were evaluated with Beck Depression II and Beck Anxiety scales, respectively. Quality of life was measured using the SF-36 scale, and work productivity and activity impairments were assessed using the WPAI questionnaire. The collected data were statistically analyzed to determine differences and associations among the exposure groups.

**Results:** The study population had a homogeneous distribution in terms of age and gender, with no significant differences observed ( $p=0.760$  and  $p=0.352$ , respectively). Significant differences were found in Beck Anxiety scores ( $p=0.004$ ), WPAI Work Score-1 ( $p<0.001$ ), Work Score-3 ( $p=0.022$ ), and SF-36 Physical Function scores ( $p=0.037$ ) among the exposure groups. Participants with moderate EMF exposure exhibited significantly higher levels of anxiety and impairments in work productivity compared to those with low and high exposures. Additionally, physical function scores were markedly lower in the moderate exposure group. These findings suggest a complex relationship between EMF exposure levels and health outcomes, with moderate exposure posing the greatest risk.

**Conclusion:** Occupational exposure to moderate levels of EMFs is associated with adverse health outcomes, including increased anxiety, decreased physical function, and impaired work productivity. These results underscore the necessity of implementing preventive strategies and workplace policies to mitigate the risks associated with EMF exposure. Raising awareness and conducting further research in this area are essential to protect the health and well-being of individuals in occupational environments.

**Key words:** Electromagnetic fields, occupational health, productivity, anxiety, SF-36

## SOP-5

# Investigation of the Clinical Importance of Blood Gas Monitoring During Resuscitation in Cardiac Arrest Patients

Mervenur POLAT<sup>1</sup>, Bahadır TAŞLIDERE<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Emergency Medicine, İstanbul, Türkiye

**Introduction:** We aimed to investigate the changes in blood gas parameters during resuscitation in patients with cardiac arrest and to assess whether we can predict the time until spontaneous circulation resumes by examining the trends in these values.

**Method:** This retrospective study is designed to include all patients aged 18 years and older who suffered a cardiopulmonary arrest and received intervention in the emergency department of our hospital. Those with missing data, terminal-stage cancer patients, and cases of witnessed cardiac arrest will be excluded from the study.

**Results:** Out of a total of 78 patients, 56 (71.8%) were male and 22 (28.2%) were female ( $p=0.833$ ). The mean age of the women was  $66.11\pm 2.90$ , while the mean age of the men was  $64.95\pm 2.50$  ( $p=0.775$ ). Statistical analysis of the arterial blood gas results revealed significant differences between the surviving group and the deceased group in the initial blood gas values. Specifically, pH ( $p=0.002$ ), sodium ( $p=0.025$ ), and potassium ( $p=0.005$ ) levels showed statistically significant differences. In the second set of blood gas measurements, significant differences were observed between the groups in pH ( $p<0.001$ ), base excess (BE) ( $p<0.001$ ), potassium ( $p<0.001$ ), pCO<sub>2</sub> ( $p=0.011$ ), and lactate ( $p=0.014$ ) levels.

**Conclusion:** The results of the study indicate that serial blood gas analysis is a crucial guide in predicting the success of cardiopulmonary resuscitation and the patient's prognosis. PH change is an indicator of prognosis, with values above 7 indicating a good prognosis. While the initial BE may be meaningless, it can be used as a prognostic indicator in patients who have received intervention. Rather than the absolute value of lactate, the direction of lactate change has been considered a prognostic indicator.

**Key words:** Cardiopulmonary resuscitation, blood gas, survival



## SOP-6

## Case Series: Follow-up Data of Patients with Autosomal Dominant Polycystic Kidney Disease Under Tolvaptan Treatment in Bezmialem Vakıf University Hospital

Melike BAŞARAN<sup>1</sup>, Meltem GÜRSU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, İstanbul, Türkiye

**Introduction:** Autosomal dominant polycystic kidney disease (ADPKD) is a genetic disorder characterized by progressive kidney enlargement. The only FDA-approved drug is tolvaptan. There are a limited number of studies examining the response to this treatment, in our country. Therefore, our study aims to evaluate changes in kidney size among ADPKD patients receiving tolvaptan therapy.

**Method:** This study included patients with ADPKD who were receiving tolvaptan treatment. Demographic data (age, gender, comorbidities, treatment duration, and dosage) were recorded. Baseline measurements of blood pressure, urea, creatinine, estimated GFR, and kidney volumes were collected prior to treatment. Routine laboratory and imaging tests were evaluated, and clinical findings were compared pre- and post-treatment.

**Results:** This study included 18 patients (13 males, 5 females) with a mean age of  $46.50 \pm 7.19$  years. After one year of treatment, mean eGFR decreased from  $56.38 \pm 19.77$  to  $48.08 \pm 20.53$  mL/min, creatinine increased from  $1.55 \pm 0.55$  to  $1.87 \pm 0.83$  mg/dL, right kidney volume decreased from  $1898.75 \pm 1294$  to  $1453.60 \pm 792$  mL, and left kidney volume decreased from  $2224.35 \pm 1601$  to  $1511.80 \pm 844$  mL. The changes in systolic and diastolic blood pressure values and kidney sizes were found to be statistically insignificant ( $p=0.739$  for systolic,  $p=0.967$  for diastolic,  $p=0.877$  for the right kidney,  $p=0.427$  for the left kidney). A strong negative correlation was observed between baseline and 3-month diastolic blood pressure ( $r=-0.73$ ).

**Conclusion:** The treatment did not show statistically significant changes in kidney volumes or systolic or diastolic blood pressures. However, a strong negative correlation between baseline and 3-month diastolic blood pressure suggests greater reductions in individuals with higher baseline values. Further studies are needed to explore these individual variations and their clinical implications.

**Key words:** Autosomal dominant polycystic kidney disease, tolvaptan, progression

## SOP-7

# Impact of Ramadan Fasting on Renal Function in Patients with Diabetic and Non-diabetic Chronic Kidney Disease

Zeynep ARDAHAN<sup>1</sup>, Ömer Celal ELÇİOĞLU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Nephrology, İstanbul, Türkiye

**Introduction:** Chronic kidney disease (CKD) affects 10% of the global population, reducing quality of life and increasing mortality. Patients with CKD stage 3a are particularly sensitive to dietary and lifestyle modifications. Ramadan fasting, a key Islamic practice, involves abstinence from food and drink from dawn to sunset. Despite exemptions for individuals with health conditions, many CKD patients fast due to cultural and religious reasons. The effects of fasting on renal function in CKD patients remain controversial, with studies showing conflicting results. This study evaluates the impact of Ramadan fasting on renal function in CKD stages 2-4.

**Method:** The study was conducted at a tertiary care center, with data collected retrospectively for three months preceding Ramadan 2024 and prospectively for three months afterward. A total of 129 patients were included: fasting (n=65) and non-fasting (n=64) groups. Inclusion criteria were eGFR between 15 and 90 mL/min/1.73 m<sup>2</sup> and stable CKD stages 2-4. Exclusion criteria included acute kidney injury and advanced CKD. The primary outcome was the change in eGFR ( $\Delta$ eGFR) using the CKD-EPI 2021 formula.

**Results:** Baseline eGFR was  $52.11 \pm 13.34$  mL/min/1.73 m<sup>2</sup>.  $\Delta$ eGFR was not significantly different between fasting ( $2.33 \pm 7.21$ ) and non-fasting ( $3.93 \pm 7.86$ ) groups ( $p=0.232$ ). CRP levels increased in both groups, with a more pronounced rise in the non-fasting group. Fasting was well tolerated, including among diabetic patients with controlled glucose levels and those using antidiabetic or antihypertensive medications.

**Conclusion:** Ramadan fasting does not significantly affect renal function in stable CKD patients. The findings suggest that patients with CKD stages 2-4 can safely fast under medical supervision. Further multicenter studies are recommended to validate these findings.

**Key words:** Chronic kidney disease, ramadan fasting, renal function, eGFR, inflammatory markers

## SOP-8

# The Investigation of the Anti-inflammatory and Immunomodulatory Effects of Black Grape Seed (*Vitis labrusca* L) And Yellow Grape (*Vitis vinifera* L) Seed Extract

Murat DURMAZ<sup>1</sup>, Ezgi BALKAN<sup>2</sup>, Abdürrahim KOÇYİĞİT<sup>2</sup>

<sup>1</sup>Bezmi Alem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmi Alem Vakıf University, Faculty of Medicine, Department of Medical Biochemistry, İstanbul, Türkiye

**Introduction:** *Vitis labrusca* L. (VLL), commonly known as Erzincan Cimin Grape, and *Vitis vinifera* L. (VVL), (green-yellow grapes), are extensively distributed in Anatolia. Their seeds possess anti-inflammatory, immunomodulatory, and antioxidant properties, but comparative analyses remain limited. This study aims to evaluate the effects of VLL and VVL extracts in LPS-stimulated RAW264.7 macrophages.

**Method:** Fresh VVL and VLL were dried at 40° C and extracted using ultrasound-assisted extraction with 80% ethanol. Total flavonoid and phenolic contents were determined using quercetin and gallic acid standards. Cell viability was analyzed with the MTT assay. An inflammation model was induced using LPS, confirmed by measuring nitric oxide levels with the Griess reagent. Pro-inflammatory cytokines were analyzed via ELISA. Additionally, VLL effects on COX-2 protein will be investigated using western blot and immunofluorescence.

**Results:** The extract of VLL/VVL seed was found to contain 120/96 mg/g gallic acid equivalents of total phenols, and 24/18 mg/g quercetin equivalents of total flavonoids. Since the contents of VLL seeds were found to be higher than those of VVL extract, subsequent experiments were conducted using VLL. It exhibited cytotoxic effects on macrophage cells at doses above 100 µg/mL, while demonstrating significant proliferative effects at doses below this threshold. In the LPS-induced inflammation model, the extract significantly reduced IFN-γ levels up to 60 µg/mL doses, TNF-α levels up to 30 µg/mL doses, and suppressed the pro-inflammatory cytokine IL-1β starting from a dose of 10 µg/mL. Black grape seed extract dose-dependently decreased the COX-2 protein expression level in LPS-induced macrophage cells. This reveals the potential of black grape seeds as anti-inflammatory agents.

**Conclusion:** VLL, notable for its rich phenolic and flavonoid composition, has emerged as a potential candidate for inflammation suppression. This highlights its potential as a natural anti-inflammatory agent for treating inflammation-related diseases.

**Key words:** Inflammation, immunomodulatory, *in vitro*, *Vitis vinifera* L, *Vitis labrusca* L

## SOP-9

# Microbiological Etiology, Clinical Features, and Prognosis in Prosthetic Heart Valve and Intracardiac Device-associated Endocarditis: 10-year Data

İlayda Nur TUZİNOĞLU<sup>1</sup>, Gülay OKAY<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology, İstanbul, Türkiye

**Introduction:** Modified Duke Criteria (MDC) used in the diagnosis of infective endocarditis (IE) may be inadequate in some cases. Our aim in this study is to investigate the adequacy of MDC in the diagnosis of prosthetic valve endocarditis (PVE) and intracardiac device endocarditis (ICDE). It also aims to investigate the etiology, clinical features, prognosis, and risk factors of PVE and ICDE.

**Method:** The files of patients diagnosed with PVE and ICDE between 2013-2023 were retrospectively scanned and evaluated according to MDC. In addition, the files of patients who had a prosthetic valve or intracardiac device and did not have IE between the same years were retrospectively scanned also. Differences between patients with prosthetic valves or intracardiac devices, with and without IE, were investigated.

**Results:** Twenty-two patients with PVE and 7 patients with ICDE were reached. Blood culture was positive in only 19 of 29 patients. The most common microorganisms are *S. aureus* (31.57%) and *S. epidermidis* (15.78%). The echo findings of 21 patients were compatible with IE. According to the MDC, only 18 of 29 IE patients were diagnosed with definite IE. Twenty-five percent of patients with IE died during the treatment. When the risk factors for developing IE in patients with prosthetic valves and intracardiac devices are compared, there was no difference observed between surgical or transcatheter replacement of the prosthetic valve ( $p=0.780$ ), and the risk of developing IE was higher in the first year of the prosthetic valve or intracardiac device (51.7%  $p=0.015$ ).

**Conclusion:** MDC is not sufficient to diagnose PVE and ICDE in some cases. No superiority between surgical and transcatheter interventions has been found in valve replacement, and the risk of developing IE was found to be higher in the first year.

**Key words:** Infective endocarditis, prosthetic valve endocarditis, intracardiac device endocarditis

## SOP-10

# Evaluation of Telemedicine Awareness Levels of Bezmialem Vakıf University Faculty of Medicine Physicians' and Students'

Ayşe Nesibe GÜR<sup>1</sup>, Semra ÖZÇELİK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Education and Informatics, İstanbul, Türkiye

**Introduction:** Telemedicine has appeared as a vital component of healthcare delivery, particularly during the coronavirus disease-2019 pandemic. It facilitates remote diagnosis, treatment, and continuous education. Despite its widespread use, the awareness, knowledge, attitudes, and skills (AKAS) regarding telemedicine among medical professionals remain inconsistent. This study evaluates these dimensions among physicians and medical students at Bezmialem Vakıf University Faculty of Medicine.

**Method:** A survey was applied to 160 participants, including 80 men and 80 women, medical students and physicians from Bezmialem Vakıf University. The Telemedicine AKAS questionnaire was distributed through Google Forms, and the survey gathered information on participants' demographics and telemedicine competencies. Gender-based performance was analyzed using descriptive statistics.

**Results:** The study has shown that women scored higher than men in almost all metrics: knowledge ( $p<0.001$ ), awareness ( $p=0.005$ ), attitude ( $p=0.041$ ), and skills ( $p=0.001$ ). Strong correlations were observed between awareness and skills ( $r=0.933$ ,  $p<0.001$ ). Women exhibited greater familiarity with telemedicine knowledge and demonstrated more positive attitudes. Despite these differences, both genders identified similar benefits and challenges associated with telemedicine, including improved accessibility and concerns about empathy during virtual interactions.

**Conclusion:** The study reveals notable gender differences in telemedicine competencies and highlights the need for targeted educational initiatives to close these gaps. Integrating telemedicine training into medical curricula is essential for improving the effectiveness of healthcare delivery and preparing future professionals with the skills and confidence to adapt to evolving medical technologies.

**Key words:** Telemedicine, awareness, knowledge, attitude, skills

## SOP-11

# The Use of Artificial Intelligence Applications Among Medical Students

Melisa ŞENSOY<sup>1</sup>, Bayram DOĞAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Urology, İstanbul, Türkiye

**Introduction:** Artificial intelligence (AI) is rapidly transforming medical education and practice. AI applications provide innovative tools that can enhance learning, patient care, and clinical decision-making. This study aims to explore medical students' perceptions of AI, its potential integration into the curriculum, and its impact on learning and patient care quality.

**Method:** A survey was conducted among 81 medical students at Bezmialem Vakıf University. The participants were categorized based on gender (57 females, 24 males), and their experiences with AI tools. Statistical analyses, including chi-square tests, were used to evaluate perceptions of AI's integration into medical education.

**Results:** A total of 81 students participated in the study. Among 55 participants with no prior AI education, 20 believed AI should be integrated into the curriculum ( $p=0.087$ ). Out of 24 frequent ChatGPT users, 11 reported accelerated learning ( $p=0.180$ ). Of 48 students who believed AI enhances patient care quality, 40 positively evaluated AI's impact on medical practice ( $p=0.002$ ).

**Conclusion:** This study highlights the varied perceptions of medical students regarding AI in education and practice. While most participants recognized the potential of AI in improving patient care and learning efficiency, the results underscore the need for further integration of AI into the medical curriculum and the addressing of knowledge gaps.

**Key words:** Artificial intelligence, medical education, AI tools, patient care, learning efficiency

## SOP-12

# Evaluation of Bezmialem Vakıf University Faculty of Medicine Students' Knowledge, Attitudes and Behaviors Regarding Tuberculosis Patients

Nida ÇUKUR<sup>1</sup>, Ali TOPRAK<sup>2</sup>, Haluk ÇALIŞIR<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Chest Diseases, İstanbul, Türkiye

**Introduction:** Tuberculosis is a contagious lung disease that exists in active (contagious) and latent (non-symptomatic) forms. This study aimed to compare the knowledge, attitudes, and behaviors of Bezmialem Vakıf University Faculty of Medicine students toward tuberculosis patients by focusing on those who did and did not take a theoretical course, to raise awareness.

**Method:** This descriptive study collected data using a 25-question questionnaire to assess students' behavior and attitudes toward tuberculosis based on sociodemographic characteristics and TB knowledge. A total of 129 students participated, divided into two groups: those who had not taken theoretical courses (1<sup>st</sup> and 2<sup>nd</sup> grade) and those who had (3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> grade).

**Results:** A total of 129 participants took part in this study, with 44 males and 85 females. The first group (1<sup>st</sup> and 2<sup>nd</sup> grades) had 32 students, and the second group (3<sup>rd</sup> to 6<sup>th</sup> grades) had 97 students. The second group scored higher on questions about tuberculosis transmission ( $p=0.002$ ), diagnosis ( $p=0.001$ ), and treatment duration ( $p=0.018$ ). More participants in the second group were concerned about catching tuberculosis (36.1% vs. 18.8%,  $p=0.068$ ) and preferred visiting untreated patients while wearing masks and having ventilation (70.1% vs. 40.6%,  $p=0.060$ ). There was no significant difference between groups in attitudes toward a discriminated tuberculosis patient at work ( $p=0.143$ ). Regarding participation in social activities, 56.3% of the first group and 43.4% of the second group believed the patient should not participate ( $p=0.005$ ).

**Conclusion:** As a result of the analysis between the two groups, significant differences were found in students' knowledge, but no significant difference was found in behavior and attitude.

**Key words:** Tuberculosis, medical students, knowledge level, behavior

## SOP-13

# Survival Outcomes of Autologous Stem Cell Transplantation in Lymphoma Patients

Elif YILDIZ<sup>1</sup>, Güven ÇETİN<sup>2</sup>, Özge PASİN<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Hematology, İstanbul, Türkiye

<sup>3</sup>University of Health Sciences Türkiye, Hamidiye Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** High-dose chemotherapy followed by autologous stem cell transplantation (ASCT) has been frequently used to treat patients with relapsed or refractory lymphoma. This study aims to compare survival outcomes after ASCT across six different lymphoma subtypes.

**Method:** Eighty-one patients who underwent ASCT between January 2012 and December 2023 were included. Overall survival (OS) and progression-free survival (PFS) were calculated using the Kaplan-Meier method and compared with the log-rank test. Comorbidities were evaluated with the Charlson Comorbidity Index (CCI). The impact of age, sex, comorbidities, and lymphoma subtype on survival was evaluated using Cox regression and logistic regression analyses.

**Results:** Twenty patients with Hodgkin lymphoma (HL), 22 with diffuse large B-cell lymphoma (DLBCL), 17 with follicular lymphoma (FL), 6 with marginal zone lymphoma (MZL), 10 with mantle cell lymphoma (MCL), and 6 with T-cell lymphoma (TCL) were included. The mean age was 45 (range 18 - 79) years. Comorbidities were present in 53 patients (65.4%), and crosstab analysis of CCI revealed a significant difference ( $p=0.024$ ). Two year PFS was 72.4%, and OS was 77.6%. The mean PFS was 72.45 months, and the mean OS was 114.03 months. Two year PFS for HL, DLBCL, FL, MZL, MCL, and TCL was 69.9%, 80.9%, 75.5%, 80%, 70%, and 50%, and 2-year OS was 79.3%, 57.7%, 100%, 62.5%, 88.9%, and 53.3%, respectively. DLBCL had the longest PFS (70.2 months), while FL had the longest OS (113 months). TCL had the shortest PFS and OS (14.66 and 33.33 months). Cox regression analysis showed a significant difference in PFS between HL and TCL ( $p=0.020$ ).

**Conclusion:** Survival outcomes after ASCT vary significantly by lymphoma subtype. Identifying factors contributing to shorter survival may improve treatment strategies for high-risk groups.

**Key words:** Autologous stem cell transplantation, lymphoma, survival analysis



## SOP-14

# The Effect of SGLT2 Inhibitor Use on Weight in Obese and Non-obese Individuals with Type 2 Diabetes Mellitus: A 3-6 Month Follow-up Study

Murat Selim DEMİRCİ<sup>1</sup>, Cumali KARATOPRAK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine Clinic, İstanbul, Türkiye

**Introduction:** Diabetes is a chronic disease characterized by high levels of glucose in the bloodstream. Diabetes medications aim to control blood sugar levels. SGLT2 inhibitors are one of the drug groups used in diabetes treatment. The main effect of SGLT2 inhibitors, also known as gliflozins, is to prevent glucose reabsorption in the kidney and thus lower blood sugar. In addition to blood sugar control, these drugs improve metabolic parameters by reducing weight, lowering blood pressure, and reducing the progression of kidney failure. It has also been shown to benefit cardiovascular health in diabetic patients. The aim of this study is to evaluate the difference in the weight loss effect of SGLT2 inhibitors in obese and non-obese patients.

**Method:** A total of 100 patients using SGLT2 inhibitors were identified. These patients were divided into two groups: those with a body mass index (BMI) below 30 and those with a BMI above 30. In addition to monitoring weight over a 3-6 month period, the levels of glucose, HbA1c, TSH, GFR, creatinine, AST, ALT, HDL, LDL, and triglycerides were tracked. The medications actively used by the patients were also evaluated.

**Results:** At the end of this process, a statistically significant result was observed in the group with a BMI above 30 ( $p=0.01$ ), while no significant result was observed in the group with a BMI below 30 ( $p=0.924$ ). No significant results were observed in either group for the other parameters monitored, except for weight.

**Conclusion:** The results of the current study are statistically significant in terms of weight loss between the two groups; however, our findings need to be validated through further clinical studies.

**Key words:** Diabetes, SGLT2 inhibitors, obesity

## SOP-15

## Stage Change Rates of a Group of Patients Operated for Endometrial Cancer According to the New (FIGO 2023) Staging System Compared to the Previous (FIGO 2009) Staging System

Zehra Gül ÖZÇELEBİ<sup>1</sup>, Gürkan KIRAN<sup>2</sup>, Ali TOPRAK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** The International Federation of Gynecology and Obstetrics (FIGO) 2009 staging system, used for determining the stage of endometrial cancer, was updated in 2023 with the inclusion of new prognostic factors such as lymphovascular space invasion, peritoneal metastasis, and molecular findings. In our study, we aimed to determine the rate of patients down-staged and up-staged according to the new staging system in our cohort, and to evaluate the effects of new criteria on stage change.

**Method:** Molecular and histopathological features of 207 patients who were operated on for endometrial cancer between 2015 and 2024 were determined. Cancers were staged according to the new and old staging systems, and stage shifts were analyzed.

**Results:** Of the 207 retrospectively analyzed patients, 80.6% retained their stage, 17.4% were upstaged, and 2% were downstaged. Among the upstaged patients, 47.2% had stage change associated with lymphovascular space invasion ( $p=0.005$ ), 47.3% with p53 abnormalities ( $p=0.002$ ), and 5.5% with aggressive histological features ( $p=0.013$ ). Endometrial tumors confined to the ovary were found to be associated with downstaging, transitioning from stage IIIA to stage IA3 ( $p=0.001$ ). Peritoneal metastasis was not significantly correlated with stage change ( $p=0.144$ ). The mean body mass index (BMI) was 33.2 BMI  $>30$  kg/m<sup>2</sup> was associated with the development of stage 1 cancer ( $p=0.027$ ).

**Conclusion:** The inclusion of molecular profiling and lymphovascular space invasion in the FIGO 2023 staging system led to significant changes in staging for approximately one-fifth of the patients. P53 abnormalities and lymphovascular space invasion emerged as the most effective factors contributing to upstaging, while ovarian-limited metastasis was an important criterion for downstaging.

**Key words:** Endometrial cancer, staging, International Federation of Gynecology and Obstetrics

## SOP-16

# Investigation of the Frequency of Attention Deficit and Hyperactivity Disorder and Related Factors in Adult Patients with Epilepsy

Merve ÖZYALÇIN<sup>1</sup>, Ferda İlgen USLU<sup>2</sup>

<sup>1</sup>Bezmi Alem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmi Alem Vakıf University, Faculty of Medicine, Department of Neurology, İstanbul, Türkiye

**Introduction:** This study investigates the relationship between epilepsy and attention deficit hyperactivity disorder (ADHD) in adults, evaluates medication adherence, and examines electroencephalography and radiological findings.

**Method:** The study included 46 adult patients aged 18-65, who had at least 1 year of epilepsy diagnosis, and 108 controls. Patient data were collected cross-sectionally. Adult ADHD Self-Report Scale-V1.1 (ASRS-v1.1), Morisky 8-item Medication Adherence Scale, Beck Depression Inventory, and Beck Anxiety Inventory were used. The effects of antiseizure drugs (ASDs), also used as mood stabilizers (MS), on depression, anxiety, and ADHD were also examined.

**Results:** Twenty-eight patients (60.8%) were female, with a mean age of  $26.7 \pm 7$  years. Among the patients, 27 (58.6%) experienced one or fewer seizures per year, and 30 (65.2%) had generalized seizures. The mean ASRS score was  $20.28 \pm 12$  in patients and  $23.56 \pm 10.8$  in controls ( $p=0.1$ ). Scores for ADHD symptoms exceeded the cutoff in 28 patients (60.8%), with no significant difference from controls ( $p=0.1$ ). ADHD possible in 16 patients and likely in 12; among controls, 26 were possible and 55 highly likely. The control group showed a significantly higher likelihood of ADHD ( $p=0.01$ ). Anxiety was present in 21 patients and 101 controls ( $p=0.01$ ), and depression was present in 15 patients and 102 controls ( $p=0.04$ ). Medication non-adherence was found in 82.6% of patients, but no significant correlation with ADHD was found ( $p=0.57$ ). Twenty-four patients were using a drug termed ASD, also known as MS, and the usage had no significant relationship with depression ( $p=0.73$ ), anxiety ( $p=0.11$ ), and ADHD ( $p=0.12$ ).

**Conclusion:** No significant difference was found between ADHD and medication adherence in patients. Anxiety, depression, and the likelihood of high ADHD were significantly higher in the control group compared to the patients.

**Key words:** Epilepsy, attention deficit hyperactivity disorder, antiepileptic drugs, anxiety, depression

## SOP-17

# Performance comparison of ChatGPT 4.0 vs Gemini 1.5 pro and Turkish Medical Faculty Graduates in Medical Specialization Exams: A Comparison study

Asel Hale PİLGEÇİ<sup>1</sup>, Semra ÖZÇELİK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Education and Informatics, İstanbul, Türkiye

**Introduction:** This study examines the performance of two advanced artificial intelligence (AI) models, ChatGPT-4.0 and Gemini 1.5 Pro, in comparison with recent Turkish medical faculty graduates on the Turkish Medical Specialization Exams (TUS). The objective is to evaluate the capabilities of artificial intelligence in medical education and its potential as a supplementary tool for medical professionals. Participants included the AI models and the results of the top human performers in the exams.

**Method:** This study conducted a comparative analysis of the performance of advanced AI models (ChatGPT-4.0 and Gemini 1.5 Pro) in the March and September 2024 TUS exams. Each exam consisted of 200 questions, divided equally between basic and clinical medical sciences. The statistical significance of the performance comparison among basic medical sciences, clinical medical sciences, both AI models was evaluated using the chi-square test for independence.

**Results:** The top human graduate performed better than both AI models in the September TUS exam. However, in the March 2024 TUS exam, ChatGPT 4.0 outperformed the top human graduate, scoring 84.371 in basic and 85.000 in clinical sciences, while the top graduate scored 83.300 in both. There were no significant differences in the performance of both AI models, nor between clinical and basic sciences. However, in the clinical sciences section of the March 2024 TUS, ChatGPT achieved a statistically significantly better result compared to basic sciences ( $p=0.010$ ).

**Conclusion:** AI models, particularly ChatGPT 4.0, demonstrated competitive performance relative to top human graduates in the TUS exams, showcasing strengths in clinical sciences. Both AI models and human graduates tended to score higher in clinical medical sciences compared to basic medical sciences.

**Key words:** ChatGPT, Gemini 1.5 Pro, artificial intelligence, medical education

## SOP-18

# The Impact of Asymptomatic Kidney Stones on Disease Progression in Autosomal Dominant Polycystic Kidney Disease

Beyza YATCI<sup>1</sup>, Ömer Celal ELÇİOĞLU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Nephrology, İstanbul, Türkiye

**Introduction:** Autosomal dominant polycystic kidney disease (ADPKD) is a common hereditary disorder that leads to end-stage renal disease due to the progressive formation of renal cysts. Nephrolithiasis, or kidney stone disease, is a frequent complication of ADPKD, occurring in 20-36% of patients, but its role in disease progression remains underexplored. This study investigates the potential impact of asymptomatic nephrolithiasis on the progression of renal dysfunction in ADPKD patients.

**Method:** A retrospective cohort of 195 patients diagnosed with ADPKD was followed at our nephrology clinic. Of the cohort, 85 patients had nephrolithiasis (N+) and 110 did not (N-). Data were collected on demographic characteristics, biochemical parameters, and kidney function, with  $\Delta$ eGFR (the change in eGFR over time) serving as the primary outcome. Multiple linear regression was performed to assess independent predictors of  $\Delta$ eGFR.

**Results:** The N+ group exhibited a significantly greater decline in kidney function compared to the N- group ( $\Delta$ eGFR: 16.53 vs. 12.82 mL/min/1.73m<sup>2</sup>,  $p=0.008$ ). No significant differences were observed between groups regarding parathyroid hormone, magnesium, phosphorus, or potassium levels. Nephrolithiasis was found to be an independent predictor of kidney function decline ( $B=3.159$ ,  $p=0.038$ ). The follow-up duration was also strongly associated with greater  $\Delta$ eGFR. Age showed a trend toward significance, but did not reach statistical significance ( $p=0.094$ ).

**Conclusion:** Asymptomatic nephrolithiasis is associated with accelerated kidney function decline in ADPKD patients. These findings highlight the importance of monitoring for kidney stones, even in the absence of symptoms, to potentially mitigate the progression of renal dysfunction in this patient population. Future prospective studies are needed to further elucidate the mechanisms driving this association.

**Key words:** Autosomal dominant polycystic kidney disease, nephrolithiasis, kidney stones, eGFR, renal function decline

## SOP-19

# Investigation of Metabolic Network Analysis in Patients with Acute Lymphoblastic Leukemia

Nurefşan YILDIZ<sup>1</sup>, Metin DEMİREL<sup>2</sup>, Fatmanur KÖKTAŞOĞLU<sup>2</sup>, Fatma Betül ÇAKIR<sup>3</sup>, Şahabettin SELEK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Biochemistry, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pediatrics, İstanbul, Türkiye

**Introduction:** Acute lymphoblastic leukemia (ALL) is the most common childhood cancer, characterized by uncontrolled lymphoid cell proliferation. Advances in molecular biology and immunotherapy have enhanced understanding and treatment strategies. Metabolomics, a critical tool for studying small molecules, identifies biomarkers and metabolic pathways. This study aims to identify metabolic changes associated with ALL, by analyzing plasma metabolomic profiles, providing insights into its pathophysiology and potential therapeutic targets for improved outcomes.

**Method:** This study analyzed metabolomic differences between ALL patients and healthy individuals, including 36 participants (18 per group). Blood samples were collected after 8-10 hours of fasting, and they were centrifuged and stored at -86° C. After protein precipitation, the samples were analyzed using high-resolution mass spectrometry. Data were processed using ProteoWizard, MZmine 3.0, and TidyMass, with metabolites identified through METLIN, HMDB, and MoNA. Data analysis was conducted using MetaboAnalyst, and significant metabolomic differences between groups were identified through the t-tests, PCA, and the random forests.

**Results:** Metabolomic analysis identified significant differences in metabolite expression between the control and ALL patient groups. Notably, O-Hydroxyhippuric acid ( $\log_2(\text{FC}) = 0.31$ , adj.  $p=0.0038$ ), Pyruvatoxime ( $\log_2(\text{FC}) = 0.37$ , adj.  $p=0.0023$ ), and 3,4-Dihydroxy-L-Phenylalanine ( $\log_2(\text{FC}) = 0.31$ , adj.  $p=0.0038$ ) showed significant downregulation, while Diacetyl ( $\log_2(\text{FC}) = 1.74$ , adj.  $p=0.047$ ) showed significant upregulation. Nicotinamide-N-Oxide ( $\log_2(\text{FC}) = 0.51$ , adj.  $p=2.41E-05$ ) emerged as the most significant metabolite.

**Conclusion:** This study identifies key metabolic pathways in ALL such as alanine, aspartate, and glutamate metabolism, tyrosine metabolism, and selenocompound metabolism. The findings suggest that leukemic cells exploit these metabolic networks to sustain their proliferation and adapt to microenvironmental stresses. Future studies should explore these pathways further to refine therapeutic strategies and improve clinical outcomes.

**Key words:** Acute lymphoblastic leukemia, metabolomics, pathways

## SOP-20

# Bleeding Presentation in Gastric Cancer Patients on Oral Anticoagulants and Antiplatelet Agents: A Retrospective Cohort Study

Emir Kıvanç KOT<sup>1</sup>, Adem AKÇAKAYA<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of General Surgery, İstanbul, Türkiye

**Introduction:** Gastric cancer is the fourth most common cancer and a leading cause of cancer-related mortality, with many patients experiencing gastrointestinal bleeding (GIB). The use of oral anticoagulants (OACs) and antiplatelet agents (APAs) to prevent thromboembolic events in these patients can exacerbate bleeding risk due to the fragile gastric mucosa in malignancies. Despite the widespread use of these medications, the impact on bleeding outcomes in gastric cancer patients remains under-researched. This study aims to assess the incidence, presentation, and outcomes of bleeding in gastric cancer patients on OACs or APAs.

**Method:** This retrospective cohort study reviewed the medical records of gastric cancer patients at Bezmialem Vakıf University from 01.01.2014 to 01.01.2024. Patients on OACs or APAs were compared with a control group of patients not on these therapies. The primary outcome was the incidence of GIB, identified through clinical records. Statistical analysis was conducted using chi-square tests, with a significance level of  $p < 0.05$ .

**Results:** A total of 60 gastric cancer patients were included, with 30 in the experimental group (OACs/APAs) and 30 in the control group. GIB was observed in both groups, with 70% of patients in the experimental group experiencing GIB compared to 26.7% in the control group. This difference was statistically significant ( $p = 0.040$ ), indicating that the use of OACs/APAs is associated with a higher risk of bleeding.

**Conclusion:** This study shows that gastric cancer patients taking OACs or APAs are at a higher risk of GIB. These findings suggest the need for further research to better understand the impact of these medications on bleeding risk in this patient group.

**Key words:** Gastric cancer, gastrointestinal bleeding, oral anticoagulants

## SOP-21

# The Evaluation of The Living Kidney Donor Applicants in Bezmialem Vakıf University Kidney Transplantation Unit

Kemal Eren ÖZER<sup>1</sup>, Meltem GÜRSU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Nephrology, İstanbul, Türkiye

**Introduction:** Kidney transplantation is a highly effective treatment for chronic kidney disease, offering substantial benefits to patients. This study aims to evaluate potential kidney donors who applied to the Kidney Transplantation Unit at Bezmialem Vakıf University Hospital.

**Method:** This retrospective study analyzed data from 296 individuals who applied as potential donors between June 2014 and January 2025. Data collected included demographic, clinical, and laboratory parameters. Accepted and rejected donors were compared to determine factors influencing eligibility.

**Results:** Of the 296 applicants, 23.3% (n=69) were suitable to be a kidney donor, while 76.4% (n=226) were not suitable to be a kidney donor. The accepted group had a mean age of  $45.88 \pm 9.87$  years, with 47.8% males (n=33) and 52.2% females (n=36). The rejected group had a mean age of  $48.1 \pm 13.56$  years, with 53.5% males (n=121) and 46.5% females (n=105). The documented reasons for rejection of 45 applicants, couldn't be found due to a change in the hospital patient system. Documented rejection reasons included low GFR or creatinine clearance with 13.7% (n=25), diabetes with 12% (n=22), hypertension/heart failure with 10.9% (n=20), urological abnormality with 8.2% (n=15), obesity with 7.1% (n=13), proteinuria with 6.6% (n=12), blood type incompatibility with 6% (n=11), and voluntary withdrawal with 4.4% (n=8). Laboratory results showed a mean creatinine level of  $0.82 \pm 0.14$  mg/dL in the rejected group. Creatinine clearance value averaged  $109.76 \pm 33.25$  mL/min in the rejected group. 24-hour proteinuria and microalbuminuria levels were  $186.21 \pm 155.83$  mg and  $20.29 \pm 64.98$  mg on average.

**Conclusion:** Addressing modifiable risk factors such as diabetes and proteinuria may improve donor acceptance rates, contributing to better outcomes for kidney transplantation programs.

**Key words:** Chronic kidney disease, donor, kidney transplantation



## SOP-22

# Comparison of Tumour Infiltrating Lymphocyte Status with Prognostic Markers in Curettage and Resection Materials of Patients with Endometrial Carcinoma

Yıldız Aylin OĞUZ<sup>1</sup>, Nurhan ŞAHİN<sup>2</sup>, Gürkan KIRAN<sup>3</sup>, Özlem TOLUK<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Endometrial carcinoma, with worsening prognosis in advanced stages, is among the most common gynecological cancers. Recent studies have shown that the presence of tumor-infiltrating lymphocytes (TILs) may be linked to carcinoma prognosis. This study aimed to investigate the role of TILs as a predictive marker.

**Method:** Slides of 51 patients who underwent resection after diagnosis of endometrioid cancer by curettage biopsy were collected. The sample size was determined according to the Spearman correlation coefficient ( $r=0.74$ ,  $p<0.001$ ). Tissues were counterstained with hematoxylin and bluing reagent. TILs positive for CD103 were evaluated using semiquantitative and quantitative methods.

**Results:** The analysis examined the relationship between CD103 + TILs counts and clinicopathological variables, including depth of tumor invasion, tumor grade, cervical invasion and lymphovascular invasion of the tumor, lymph node metastasis, distant metastasis, and follow-up periods of patients. Pearson correlation tests revealed no significant association between CD103 + counts and these variables ( $p=0.187$ ). The ROC curve analysis ( $AUC=0.6211$ ) also failed to identify a meaningful cut-off value to distinguish between groups, suggesting that CD103 + TILs in this sample do not exhibit a linear relationship with the examined variables.

**Conclusion:** CD103 + TILs counts may not serve as a reliable biomarker for predicting clinical parameters. Future research could explore alternative immunological markers (e.g., PD-1, CD8+ T cells, or CD4+ T cells) or focus on tumor microenvironmental factors, such as hypoxia or cytokine profiles, that may influence TIL presence and activity. Additionally, examining clinical variables such as therapy response, tumor grade, and genetic subtypes could help identify potential confounding factors.

**Key words:** Endometrial carcinoma, tumor-infiltrating lymphocytes, immunohistochemical markers

## SOP-23

## Evaluation of CD9 Blood Levels in Pediatric Patients with Familial Mediterranean Fever (FMF)

Nursena GÖRPÜZ<sup>1</sup>, Ferah SÖNMEZ<sup>2</sup>, Ufuk SARIKAYA<sup>3</sup>, Hasan DURSUN<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pediatric Nephrology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biochemistry, İstanbul, Türkiye

<sup>4</sup>University of Health Sciences, Faculty of Medicine, Department of Pediatric Nephrology, İstanbul, Türkiye

**Introduction:** Familial Mediterranean fever (FMF) is a clinically diagnosed autoinflammatory disease. CD9, a tetraspanin protein, is implicated in inflammation and explored as a biomarker. This study aims to measure CD9 blood levels to enhance FMF diagnosis.

**Method:** Clinical, genetic and laboratory data (SAA, WBC, fibrinogen, CRP, ESR, 24-hour urine) of the patients (with attack and remission subgroups) diagnosed as FMF were evaluated. Blood CD9 levels were investigated using the ELISA method in both groups. The investigation of CD9 was repeated after 15 days in the attack group. All parameters were compared with blood CD9 in patient groups, and the CD9 levels of the patients were correlated with those of the control group. Statistical analyses were performed using Mann-Whitney U and chi-square; correlation tests via SPSS.

**Results:** Our study included 40 FMF patients (23 girls, 17 boys), categorized into six in the attack phase and 34 in remission. The mean age of the patient group was  $11.31 \pm 3.76$  years (range: 2-17). The control group consisted of 28 children (20 girls, 8 boys) with a mean age of  $9.11 \pm 4.81$  years (range: 1-17). CD9 levels significantly differed between the attack and remission groups ( $p=0.003$ ), with lower levels observed during the attack phase. However, no significant difference was found between remission patients and the control group ( $p>0.05$ ). Additionally, CD9 showed no statistically significant correlation with inflammatory markers such as CRP, ESR, or SAA ( $p>0.05$ ), and no significant differences were observed in genetic mutations or gender distribution between groups ( $p>0.05$ ).

**Conclusion:** CD9 levels vary with disease phases but lack a strong link to inflammatory markers. Further studies with larger sample sizes are needed to evaluate the potential role of CD9 as a biomarker in FMF.

**Key words:** FMF, autoinflammation, CD9

## SOP-24

# A 5-Year Retrospective Analysis of Diabetic Foot Ulcers: Risk Factors Affecting Amputation Level

Sinemnur HALİLBEYOĞLU<sup>1</sup>, Nuh EVİN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, İstanbul, Türkiye

**Introduction:** Diabetic foot ulcers (DFUs) are the leading cause of non-traumatic foot amputations, reducing quality of life and causing financial, psychological, and higher mortality risks. This 5-year retrospective study analyzes DFUs and amputation risk factors.

**Method:** Between 2018 and 2023 years, 91 patients with DFUs who underwent amputation were retrospectively reviewed. Patients were examined in two groups; major (Ma) and minor (Mi) amputations groups. Patients who neither completed the 12-month follow-up nor underwent amputation were excluded. This study was conducted in accordance with the principles of the Declaration of Helsinki and approved by the local ethics committee (approval number=2024/84). Patients' records were reviewed retrospectively for demographics, comorbidities, laboratory, and radiological data, ulcer characteristics, treatments, surgeries, and complications.

**Results:** Of the 91 patients (mean age  $62.7 \pm 10.8$  years), 66 were male and 25 female. Sixty-seven had minor amputations, and 24 had major amputations. Forty-five (67.2%) patients were male, and twenty-two (32.8%) were female in the Ma group. The mean age was  $61.2 \pm 10.4$  years. 21 (87.5%) patients were male, and 3 (12.5%) were female (mean age =  $66.8 \pm 11.1$  years) in the Mi group. The male sex had the highest proportion in the major amputation group. There was a statistically significant difference between the mean age of the two groups ( $p=0.015171$ ). The Mi and Ma groups showed significant differences in mean ASA scores ( $2.6 \pm 0.55$  vs.  $3 \pm 0.5$ ,  $p=0.001193$ ), CRP levels ( $100.6 \pm 83.4$  vs.  $175.1 \pm 97.3$ ,  $p=0.000268$ ), white blood cell (WBC) ( $12.2 \pm 4.9$  vs.  $17.8 \pm 7.5$ ,  $p=0.00032$ ), Hb levels ( $11.1 \pm 1.8$  vs.  $10.2 \pm 1.6$ ,  $p=0.021604$ ), and sedimentation rates ( $59 \pm 32.2$  vs.  $77.6 \pm 29.2$ ,  $p=0.007345$ ). No significant differences were found in the mean number of surgeries ( $3 \pm 1.6$  vs.  $2.7 \pm 0.8$ ,  $p=0.13085$ ) or HbA1c levels ( $8.67 \pm 1.81$  vs.  $8.97 \pm 2.34$ ,  $p=0.264898$ ).

**Conclusion:** Amputation remains a key treatment for DFUs. Male gender, older age, high ASA, CRP, WBC, sedim, and low Hb levels are major amputation risk factors, significantly impacting physical activity and quality of life.

**Key words:** Amputation, diabetes mellitus, diabetic foot ulcers, multidisciplinary management

## SOP-25

# Frequency and Clinical Significance of Incidental Prostate Cancer Detected During Radical Cystoprostatectomy

Hüseyin Arda DİNGİL<sup>1</sup>, Abdullah İLKTAÇ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department Urology, İstanbul, Türkiye

**Introduction:** Prostate adenocarcinomas incidentally detected in radical cystoprostatectomy (RSP) samples. Most are localized and well-differentiated clinically insignificant cancers. In this study, there were no incidental findings in patients undergoing RSP. We aimed to determine the rate of prostate adenocarcinoma being detected.

**Method:** Patients who underwent RSP at Bezmialem Vakıf University Medical Faculty Hospital between January 2014 and December 2023 were included in the study. Clinicopathological features of prostate adenocarcinomas detected in cystoprostatectomy materials will be retrospectively examined. In the statistical analysis, when the ratio was taken as 0.17 for 80% power at a 95% confidence level, using previous studies as a reference. Descriptive statistics will be given as mean  $\pm$  standard deviation, frequency and percentage. Analyses will be made with chi-square tests and t-tests. SPSS version 28V will be used. Significance level will be set at  $p=0.05$ .

**Results:** Incidental prostate adenocarcinoma was detected in 16 (20.6%) of 78 patients who underwent RSP. Ten of the detected prostate cancers were in the pT2a (61.5%) stage, 5 in the pT2c (30.7%) stage, and 1 in the T3b (7.6%) stage. The Gleason score of 11 patients was 6 or less; 4 of them were 7 (4+3); and 1 patient had a score of 9 (5+4).

**Conclusion:** In patients who underwent RSP due to bladder cancer, all prostate tissue is removed without leaving any prostate tissue behind, should be removed. It should be kept in mind that the coexistence of bladder and prostate cancer is high; careful and detailed pathological examination should be performed.

**Key words:** Bladder tumor, prostate adenocarcinoma, radical cystoprostatectomy

## SOP-26

## Evaluation of Postpartum Quality of Life, Quality of Sexual Function, and Quality of Sleep in Patients Who Had Vaginal, Cesarean and Vaginal Delivery After Cesarean

Berrak GÜLER BEKTAŞ<sup>1</sup>, Pınar ÖZCAN<sup>2</sup>, Melda KUYUCU<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Üsküdar University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** The first six months postpartum involve physiological, psychological changes. Vaginal birth is natural, while cesarean birth is preferred for high-risk cases but may cause complications. Vaginal birth after cesarean (VBAC) challenges the belief that “once a cesarean, always cesarean”, reducing labor and postpartum difficulties. This study examines the effects of delivery mode (vaginal, cesarean, VBAC) on postpartum quality of life, sexual function, sleep quality, and urinary incontinence.

**Method:** Postpartum Quality of Life Questionnaire, Pittsburgh Sleep Quality Index (PSQI), Female Sexual Function Scale (FSFI), and Incontinence Modular Questionnaire were applied to women who had 49 vaginal, 54 cesarean, and 55 VBAC deliveries at Bezmialem Vakıf University Hospital. Total scores and FSFI, PSQI subgroup scores were calculated. Age, gravida, parity, abortion, smoking, chronic diseases, BMI were recorded

**Results:** Subjective sleep quality was significantly higher in the vaginal birth group than in the VBAC group ( $p=0.007$ ). FSFI total scores were significantly lower in VBAC than following cesarean section ( $p<0.001$ ) and vaginal birth ( $p=0.036$ ). Desire scores were significantly lower for VBAC than for cesarean section ( $p<0.001$ ). Satisfaction was significantly higher for vaginal birth compared to VBAC ( $p=0.007$ ). Pain showed a significant difference, being highest in VBAC ( $p<0.001$ ) and higher in cesarean section compared to vaginal birth ( $p=0.007$ ). No significant difference was found in other parameters.

**Conclusion:** Vaginal delivery provides advantages with better sleep quality ( $p=0.007$ ) and higher satisfaction ( $p=0.007$ ). VBAC stands out as an advantageous delivery method compared to cesarean section in terms of sexual function ( $p<0.001$ ), quality of life ( $p<0.001$ ), even though despite higher levels of pain during intercourse ( $p<0.001$ ). These findings show that the delivery method has a significant effect on recovery in the postpartum process.

**Key words:** Vaginal birth after cesarean, sexual function, postpartum quality of life

## SOP-27

# Comparative Analysis of Health-related Quality of Life Between Menstrual Cup and Pad Users in Türkiye

Aylin ÇİÇEK<sup>1</sup>, Ayşe Filiz GÖKMEN KARASU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** This study compares the health-related quality of life between women using sanitary pads and menstrual cups in Türkiye. We evaluate the impact of these products by analyzing participants' demographic characteristics, product usage experiences, and related issues.

**Method:** Women aged 18 to 45 participated in a survey comparing sanitary pad and menstrual cup users. The survey assessed satisfaction, comfort, and health-related concerns. A two-sample independent t-test was conducted to determine whether satisfaction levels significantly differed between the groups.

**Results:** Among sanitary pad users, 90% expressed satisfaction with leak prevention, while 10% reported mild irritation, and 8% found changing pads inconvenient. Menstrual cup users reported 95% satisfaction and preferred cups due to reduced irritation (8% vs. 10% for pads), and better leak protection. However, menstrual cup users faced difficulties with insertion and removal compared to the simpler handling of pads. Despite these subjective differences, the independent t-test revealed no statistically significant difference in overall satisfaction scores between the two groups ( $t=-0.0028$ ,  $p=0.9977$ ). This suggests that while menstrual cup users report higher satisfaction, this difference is not statistically meaningful.

**Conclusion:** Both menstrual cups and sanitary pads are viable menstrual hygiene options, each with advantages and drawbacks. While menstrual cups offer benefits in comfort and irritation reduction, adaptation remains a challenge. Statistical findings indicate comparable satisfaction levels, emphasizing the role of personal preference in product choice. Future research with a larger sample and qualitative insights may provide a deeper understanding of user experiences.

**Key words:** Menstrual hygiene, sanitary pads, menstrual cups, quality of life, health comparison

## SOP-28

# The Association Between Glucose Levels of Oral Glucose Tolerance Test and Pregnancy Outcomes

İrem Nur YAMAN<sup>1</sup>, Melda KUYUCU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Diabetes is a common complication during pregnancy. The International Association of Diabetes and Pregnancy Study Group recommends a 75-gram 2-hour oral glucose tolerance test (OGTT) between 24-28 weeks of gestation, diagnosing gestational diabetes mellitus (GDM) if thresholds are met (fasting  $\geq 92$  mg/dL, 1<sup>st</sup> hour  $\geq 180$  mg/dL, 2<sup>nd</sup> hour  $\geq 153$  mg/dL). The aim of this study is to demonstrate significant associations between OGTT glucose level subtypes and pregnancy outcomes.

**Method:** A retrospective analysis was conducted on singleton pregnancies undergoing OGTT at Bezmialem Vakıf University Hospital between 2019-2024. Pregnancies complicated by multiple gestations, fetal abnormalities, pregestational diabetes, or significant maternal comorbidities were excluded. Glucose levels were categorized as normal glucose tolerance (NGT), isolated fasting hyperglycemia (GDM-IFH), isolated post-load hyperglycemia (GDM-IPH), or combined hyperglycemia (GDM-CH). Maternal characteristics, obstetric complications, and neonatal outcomes were retrieved from the Nucleus database.

**Results:** Data from 1,100 pregnancies were analyzed. Maternal age was higher in GDM-CH and GDM-IPH, compared to NGT. Gravida was higher in GDM-IFH than in NGT. Gestational age at birth was higher in NGT and lower in GDM-IFH compared to GDM-GH. First-minute Apgar scores were lower in GDM-IPH than in both GDM-IFH and NGT. GDM-CH was associated with higher rates of preterm delivery, preeclampsia, and polyhydramnios ( $p < 0.008$ ). Insulin use was more common in GDM-CH ( $p < 0.017$ ). There were no significant differences in parity, IVF status, birth weight, 5<sup>th</sup>-minute Apgar scores, macrosomia, oral antidiabetic use and PPROM rates. Bonferroni corrections were applied among the groups.

**Conclusion:** Combined hyperglycemia is strongly associated with adverse maternal and neonatal outcomes, particularly preeclampsia, polyhydramnios, and preterm birth. These findings underscore the importance of effective management of GDM to mitigate risks. Further prospective studies are needed to elucidate underlying mechanisms and validate these associations.

**Key words:** Gestational diabetes mellitus, oral glucose tolerance test, pregnancy outcomes

## SOP-29

## Epidemiology and Comorbidities of Alopecia Areata

Lerna TUMAYAN<sup>1</sup>, Didem DİZMAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Dermatology, İstanbul, Türkiye

**Introduction:** Alopecia areata (AA) is a non-scarring autoimmune disorder causing patchy hair loss in individuals of all ages and genders. Hair loss occurs due to immune cells attacking hair follicles, leading to hair loss, while follicles remain intact. Despite its prevalence, the triggers and mechanisms of AA are not fully understood. This study investigates the epidemiological features, biochemical parameters, and comorbidities associated with AA, aiming to identify potential triggers.

**Method:** This retrospective study included 61 patients diagnosed with AA. Biochemical parameters, including ferritin, TSH, vitamin B12, vitamin D, biotin, and zinc levels, were analyzed. Comorbidities such as thyroid disorders and hypopituitarism were also recorded. Data were analyzed using t-tests and chi-square tests, with statistical significance set at  $p < 0.05$ .

**Results:** Ferritin levels were lower in patients (mean: 44.23 ng/mL), although not statistically significant ( $p=0.07$ ). Vitamin D deficiency was significantly associated with AA [mean: 19.8 ng/mL; odds ratio (OR)=2.14;  $p=0.03$ ]. Thyroid disorders significantly increased the risk (OR=2.35;  $p=0.01$ ). No significant associations were observed between TSH, vitamin B12, biotin, or zinc levels and AA. Hypopituitarism also showed no significant impact.

**Conclusion:** This study identifies vitamin D deficiency as a significant biochemical factor associated with AA. Lower ferritin levels suggest a possible but inconclusive link to an unspecified factor. Thyroid disorders emerged as notable risk factors, while other parameters and comorbidities showed no significant associations. Monitoring the vitamin D and ferritin levels may aid in early diagnosis and management of AA. Larger studies are needed to confirm these findings and better understand the disease's underlying mechanisms.

**Key words:** Alopecia areata, ferritin, vitamin D, risk factors, triggers



SOP-30

## Comparison of Patients with Ischemic and Hemorrhagic Stroke Using Brunnstrom Staging

Efe Burak PEKER<sup>1</sup>, Teoman AYDIN<sup>2</sup>, Ali SÖKER<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Physical Medicine and Rehabilitation, İstanbul, Türkiye

**Introduction:** Cerebrovascular diseases are brain anomalies caused by pathological events in blood vessels. Each year, more than 12.2 million new strokes occur worldwide. The Brunnstrom movement scale is used to evaluate extremity movements and is employed to monitor recovery.

**Method:** Patients who developed hemiplegia in the subacute phase following a cerebrovascular event and received rehabilitation in the Department of Physical Medicine and Rehabilitation at Bezmialem Vakıf University Faculty of Medicine Hospital between January 2014 and March 2024 will be included in the study. Cases meeting the criteria will be retrospectively reviewed based on patients' demographic data. The patients will be divided into two groups: those with hemorrhagic stroke (group A) and those with ischemic stroke (group B). The response to rehabilitation and motor recovery will be assessed using the Brunnstrom staging system.

**Results:** A total of 46 stroke patients with hemiplegia were included in this study and categorized into two groups: hemorrhagic stroke and ischemic stroke. Rehabilitation outcomes were assessed using changes in Brunnstrom stages. The results showed that patients in the ischemic stroke group exhibited greater improvement in motor recovery of the lower extremity, with a median (minimum - maximum) of 0.0, compared to the hemorrhagic stroke group. However, motor recovery in the upper extremity median (minimum - maximum = 0.0, -1 to 2,  $p=0.645$ ) and hand median (minimum - maximum = 1.0, 0 to 3,  $p=0.856$ ) did not show statistically significant differences between the groups. Additionally, no significant differences were observed between the groups in terms of gender ( $p>0.05$ ) and body mass index ( $p>0.05$ ).

**Conclusion:** Rehabilitation outcomes in hemiplegia appear to differ significantly between ischemic and hemorrhagic stroke patients. This study emphasizes the importance of individualized rehabilitation strategies, with consideration given to stroke type and specific motor recovery patterns.

**Key words:** Brunnstrom, hemiplegia, stroke

## SOP-31

# Attention Deficit and Hyperactivity Disorder Symptoms and Early Maladaptive Schemas in Children Diagnosed with Attention Deficit and Hyperactivity Disorder

Lara ALPAY<sup>1</sup>, Saliha KILINÇ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Child Adolescent Psychiatry, İstanbul, Türkiye

**Introduction:** Early maladaptive schemas (EMS) have been extensively studied in adults; their relationship with attention deficit hyperactivity disorder (ADHD) in children remains insufficiently understood. This study explored the association between ADHD symptoms and EMS in children diagnosed with ADHD, with a focus on behavioral, emotional, and relational patterns.

**Method:** The study included 107 children aged 8-14 years: 62 diagnosed with ADHD (DSM-5 criteria) and 45 healthy controls. Assessment tools included Sociodemographic Data Form, Dusseldorf Illustrated Schema Questionnaire for Children, Revised Conners Parent Rating Scale, Revised Conners Teacher Rating Scale-Short Form, Strengths and Difficulties Questionnaire. Data were analyzed using SPSS 28.0 with Mann-Whitney U tests and Spearman's Correlation.

**Results:** Statistical analyses revealed significant differences between children with ADHD and healthy controls in specific EMSs. The ADHD group exhibited significant differences in schemas related to emotional regulation and relational difficulties, such as Abandonment, Attachment, and Insufficient Self-Control (for all  $p < 0.001$ ). In the ADHD group, symptom-specific analyses revealed strong correlations between variables, such as Entitlement and Hyperactivity ( $r = 0.62$ ), which were significantly weaker in the control group. These findings highlight distinct emotional and relational challenges in ADHD.

**Conclusion:** This study identifies significant behavioral, emotional, and relational differences between children with ADHD and healthy controls. Furthermore, it aims to fill the gap in understanding the associations between maladaptive schemas and ADHD symptoms. Such Dusseldorf variables as Approval-seeking, Social isolation, and Abandonment emerged as critical areas of concern, highlighting unmet emotional needs and relational struggles for children with ADHD. Addressing EMS in therapeutic interventions, alongside core ADHD symptoms, may help improve emotional resilience and relational functioning in affected children.

**Key words:** EMS, ADHD, schema therapy

## SOP-32

# Adenox: A Machine Learning Model to Predict Molecular Targets in Non-small Cell Lung Cancer

Melike CÖMERT<sup>1</sup>, Morteza FAULADY<sup>1</sup>, Özge PASİN<sup>2</sup>, Melih ŞİMŞEK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, Division of Medical Oncology, İstanbul, Türkiye

**Introduction:** Targeted therapies significantly improve survival in non-small cell lung cancer (NSCLC), one of the deadliest cancers. Identifying molecular targets is crucial for determining patient eligibility for targeted therapies; however, the lengthy process of obtaining results delays treatment initiation. This study aims to develop adenox, a clinically practical machine learning model, to predict molecular targets using clinical features, before the results become available.

**Method:** This retrospective study included 281 NSCLC patients, comprising 80 (28.5%) with EGFR, 17 (6%) with ALK, 13 (4.6%) with KRAS, 3 (1.1%) with ROS1 mutations, 107 (38.1%) with PD-L1 positivity and 85 (30.2%) without molecular targets. Clinical features were categorized into demographics, radiological features, laboratory findings and pathological findings. Significant features identified via Logistic Regression were used to build the final model using a random forest.

**Results:** Associated factors with targets included EGFR: gender, smoking, pack-years, alcohol consumption, histology, brain/bone metastases ( $p < 0.001$ ), asthma ( $p = 0.008$ ), tumor size ( $p = 0.006$ ), and spiculation ( $p = 0.035$ ); ALK: histology ( $p = 0.049$ ), LDH levels ( $p = 0.043$ ); PD-L1: smoking, pack-years ( $p < 0.001$ ), alcohol consumption ( $p = 0.002$ ), brain metastases ( $p = 0.003$ ), and histology ( $p = 0.004$ ). The most significant independent prognostic factors for EGFR were female sex, not smoking, brain/bone metastases, spiculation, and pneumonic infiltration, for ALK were pleural metastasis, and for PD-L1 were smoking. Receiver operating characteristic (ROC) analysis showed predictive performance for EGFR (AUC=0.887), PD-L1 (AUC=0.679), ALK (AUC=0.798), KRAS (AUC=0.674), and ROS1 (AUC=0.911).

**Conclusion:** Our model demonstrated clinical effectiveness in predicting molecular targets in NSCLC. It can be predicted which targets may be associated in patients with specific characteristics using this model. This approach can help determine the targets to be analyzed, particularly in patients with insufficient tumor tissue. We aim to integrate it into routine practice, with the hope of improving survival and quality of life.

**Key words:** Non-small cell lung cancer, prediction, molecular targets, machine learning

## SOP-33

## Comparison of Psychological Distress Level of Women Diagnosed with and without Cervical Dysplasia

İnci Tesnim ÇOLAK<sup>1</sup>, Fatma Başak TANOĞLU<sup>2</sup>, Cem YALÇINKAYA<sup>3</sup>, Özge PASİN<sup>4</sup>, Gürkan KIRAN<sup>5</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Acıbadem University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

<sup>3</sup>Ümraniye Training and Research Hospital, Clinic of Obstetrics and Gynecology, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics and Medical Informatics, İstanbul, Türkiye

<sup>5</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Colposcopic biopsy related anxiety remains inadequately explored. This study aims to examine the long-term health-related quality of life following colposcopic biopsy and to evaluate differences in psychological distress based on biopsy outcomes.

**Method:** This is a controlled cross-sectional study involving 165 patients who underwent colposcopic biopsy for the first time according to abnormal cotest results between January 2019 and June 2024. The Functional Assessment of Chronic Illness Therapy - Cervical Dysplasia (FACIT-CD) scale was conducted on patients who had biopsy results of chronic cervicitis (group 1/control), CIN1 (group 2), CIN2 and CIN3 (group 3), cervical cancer (group 4) and compared the results.

**Results:** Among the patients who underwent colposcopic biopsy, 46 patients with chronic cervicitis, 45 patients with CIN1, 46 patients with CIN2/CIN3, and 28 patients with cervical cancer answered the survey questions. When the groups were compared, no statistically significant difference was found in terms of the FACIT-CD total score ( $p=0.058$ ). When emotional well-being scores were evaluated, a statistically significant difference was observed between the groups ( $p=0.026$ ). The median of the emotional well-being score was 36.5 (30.2-39.7) in group 4, while the score of group 2 was 29.0 (15.5-35.5), and the score of group 3 was 30.0 (21.0-37.0). The cervical cancer group was in a significantly better emotional state than the cervical dysplasia group. The median score of the control group was 32.0 (23.0-38.0) and did not differ significantly from the other groups.

**Conclusion:** These findings highlight that the distress caused by the diagnostic and treatment process, particularly in patients with precancerous lesions, should not be underestimated. Patients could be provided with comprehensive information, including guidance that involves tailored emotional support and lifestyle recommendations delivered by physicians.

**Key words:** Colposcopic biopsy, distress, cervical dysplasia

## SOP-34

# The Change in the Antibiotic Resistance Profile of Important Pathogens in Intensive Care Units Between 2019 and 2023

Hasan Hüseyin YÜCEL<sup>1</sup>, Mehmet Ziya DOYMAZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Microbiology, İstanbul, Türkiye

**Introduction:** Antibiotic resistance can complicate the treatment of diseases, leading to serious health problems and increasing the frequency of hospital infections. Therefore, monitoring and managing antibiotic resistance is crucial. Previous studies have shown a significant increase in antibiotic resistance over the years. In this study, the focus is on analyzing changes over a 5-year period in the most important pathogens of the intensive care unit, with a particular focus on Gram-negative and Gram-positive bacteria, at Bezmialem Vakıf University.

**Method:** The study was conducted as a single-center, retrospective study at Bezmialem Vakıf University Hospital. Isolated bacteria were identified using the automated system VITEK2 (bioMérieux, France), and their antibiograms were created. The results were interpreted according to CLSI (Clinical and Laboratory Standards Institute) guidelines.

**Results:** Over a five-year period, 6422 microorganisms were isolated, comprising 1103 Gram-negative and 5319 Gram-positive bacteria. The samples were primarily collected from blood, urine, sputum, and tracheal aspirates. Among the Gram-positive bacteria, *Staphylococcus aureus* and *Enterococcus* spp. exhibited no statistically significant changes in antibiotic resistance trends between 2019 and 2023. In contrast, significant resistance trends were observed among Gram-negative bacteria, including *Acinetobacter* spp., *Pseudomonas* spp., *Klebsiella* spp., and *Escherichia coli*. Resistance to amikacin showed a significant increase across all Gram-negative species. Imipenem resistance increased significantly in *Pseudomonas* spp. and *Klebsiella* spp.. Resistance to colistin rose notably in *Acinetobacter* spp. and *Klebsiella* spp.. A significant increase in meropenem resistance was detected in *Pseudomonas* spp.. Resistance to piperacillin-tazobactam increased significantly in *Pseudomonas* spp. and *Klebsiella* spp.. For ceftazidime, a significant decrease in resistance was observed in *E. coli*, while *Klebsiella* spp. demonstrated a significant increase. Resistance to gentamicin increased across all Gram-negative species.

**Conclusion:** The analysis of antibiotic resistance data should contribute to the selection of appropriate antibiotics and help prevent the development of antibiotic resistance.

**Key words:** Intensive care units, antibiotic resistance, nosocomial infections

SOP-35

# Evaluation of the Practice of Using Complementary and Alternative Medicine in Children with Asthma

Elif ÖZBUDAK<sup>1</sup>, Mebrure YAZICI<sup>2</sup>, Özlem TOLUK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Zeynep Kamil Women's and Child Health Training and Research Hospital, Clinic of Pediatric Allergy and Immunology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Biostatistics, İstanbul, Türkiye

**Introduction:** Asthma is a multifactorial respiratory disease as a result of chronic airway inflammation presenting with symptoms such as cough and wheezing. The number of people using complementary and alternative medicine (CAM) in the treatment of asthma is increasing for many reasons. In this study, we aim to determine whether there is a difference in asthma control between children who use CAM and those who do not.

**Method:** The survey was conducted face-to-face with 60 asthmatic patients between the ages, 6-18. The control group consisted of 30 patients who did not use CAM. In the survey: demographic characteristics, medication use and herbal products/supplements used, if any, were asked. Participants were given Asthma Control Test (ACT). A comparison was made between the groups using CAM and those not using CAM based on ACT scores.

**Results:** Twenty-six female, 34 male patients participated in the survey. The mean age of the participants were  $9.06 \pm 2.79$  years in the study group and  $11.8 \pm 3.43$  years in the control group. The mean ACT score of patients who used CAM and the control group was 20.6 and 16.4 respectively ( $p < 0.05$ ). Among the patients who used CAM, 33.3% reported using conifer paste, 13.3% omega, 10% carob molasses, and 10% honey. 43.3% of the patients had bought CAM from the pharmacy, 33.3% from the herbalist and 20% from online. 46.7% of patients had been adjusting the dose of the supplement themselves, 30% according to the doctor's recommendation and 23.3% according to the recommendation on the supplement.

**Conclusion:** The patients who used CAM seem to have better asthma control than the control group. Further studies are needed to understand their mechanism of action and to identify the type of CAM to recommend.

**Key words:** Asthma, complementary and alternative medicine, Asthma Control Test

## SOP-36

## Comparison of Sleep Quality of Assistant and Specialist Physicians in Surgical and Non-surgical Fields in Türkiye

Anesa Elvin KALKAN<sup>1</sup>, Ayşe Filiz GÖKMEN KARASU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Health workers represent the largest group of shift workers globally, facing irregular schedules that disrupt circadian rhythms, increase burnout risk, and pose challenges to patient care. This study aims to examine sleep quality and burnout in surgical and non-surgical physicians, considering demographic differences.

**Method:** This cross-sectional, internet-based survey was conducted via Google Forms among 419 physicians, including 230 surgical and 189 non-surgical practitioners, between June and September 2024. Data were collected using validated instruments, including the Pittsburgh Sleep Quality Index (PSQI), Insomnia Severity Index (ISI), Hospital Anxiety and Depression Scale, and the Maslach Burnout Inventory (MBI). The questionnaire was distributed through email addresses listed on the Higher Education Council of Türkiye and on both surgical and non-surgical professional association websites throughout Türkiye.

**Results:** Surgical physicians reported significantly poorer sleep quality (PSQI) and higher insomnia severity (ISI) than non-surgical physicians ( $p < 0.05$ ). Burnout decreased with increasing seniority, with professors showing significantly lower PSQI scores than residents, indicating improved sleep quality among senior physicians ( $p < 0.001$ ). Emotional exhaustion was notably higher in female physicians ( $p < 0.05$ ), and working over 50 hours per week was linked to elevated PSQI and ISI scores ( $p < 0.05$ ), underscoring the impact of extended hours on sleep and insomnia. MBI scores revealed that physicians working in state hospitals and the Marmara region faced significantly higher risks of poor sleep quality and increased burnout levels ( $p < 0.05$ ).

**Conclusion:** Early-career and surgical physicians experience poorer sleep, higher burnout, and greater mental health challenges. Increasing seniority provides a protective effect, highlighting the importance of targeted support for residents and strategies to manage workload in surgical specialties.

**Key words:** Sleep quality, burnout, practitioners, insomnia, healthcare workers

## SOP-37

# Antimicrobial Susceptibility of Respiratory Pathogen *Corynebacterium striatum* Isolates

Ali Haydar GÜNDOĞDU<sup>1</sup>, Bilge SÜMBÜL<sup>2</sup>, Melike AKBACI<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Microbiology, İstanbul, Türkiye

**Introduction:** *Corynebacterium spp.* are aerobic, catalase positive, non-sporadic, Gram-positive bacilli. *Corynebacterium striatum* is found in the normal flora of the skin and mucous membranes. It is found as an opportunistic infection, especially in immunocompromised patients and patients hospitalized in intensive care units. In recent studies, *C. striatum* isolates have been observed to cause diseases such as infective endocarditis, osteomyelitis, urinary tract infection, bacteremia, periprosthetic joint infection, thrombophlebitis, and pneumonia. Studies conducted in recent years indicate a significant increase in the incidence of *C. striatum* isolates. The development of resistance due to the increasing use of antibiotics, its frequency in the hospital environment, and the attention of researchers in recent years can be identified as the reasons for the significant increase. This newly discovered pathogen has been reported to cause nosocomial outbreaks worldwide in many articles. Although there are many studies on the susceptibility of *C. striatum* isolates in the literature, it is evident that the isolates used in these studies come from susceptibility studies conducted on different materials. This study aims to provide antibiotic susceptibility data using only strains isolated from endotracheal aspirate cultures.

**Method:** We retrospectively analyzed endotracheal aspirate samples sent to the Clinical Microbiology Laboratory of Bezmialem Vakıf University Faculty of Medicine Hospital between January 2018 and December 2023. Gram staining of the Endotracheal Aspirate Culture (ETA) samples received by the laboratory will be examined. Then, the samples will be inoculated on 5% defibrinated horse blood agar (Aklab, İstanbul), chocolate agar (Aklab, İstanbul), and eosin methylene blue agar (Aklab, İstanbul). The colonies that will grow after 24-48 hours of incubation at 35 °C, in an oven with 5% CO<sub>2</sub>, will be examined for further identification and antibiotic susceptibility tests. As an initial examination by a conventional method, colonies of 10<sup>5</sup> CFU/mL that are pure and dominantly grown will be subjected to Gram staining and catalase procedures. Gram-positive bacilli morphology and catalase-positive colonies will be further identified by Vitek MS MALDI-TOF (bioMérieux, France) at the species-level. Antibiotic susceptibilities will be determined by the Kirby-Bauer disk-diffusion method, based on EUCAST (2018) standards. For antibiotic susceptibilities, bacterial concentration of 0.5 McFarland CFU/mL, will be evaluated using Mueller-Hinton agar (Aklab, İstanbul) medium, placing each antibiotic disc 22 mm apart and incubating at 35 °C in an oven with CO<sub>2</sub> for 18±2 hours. Benzylpenicillin (1 unit) (Bioanalyse, Ankara), ciprofloxacin (5 mg) (Bioanalyse, Ankara), moxifloxacin (5 mg) (Bioanalyse, Ankara), gentamicin (10 mg) (Bioanalyse, Ankara), vancomycin (5 mg) (Bioanalyse, Ankara), clindamycin (2 mg) (Bioanalyse, Ankara), tetracycline (30 mg) (Bioanalyse, Ankara), linezolid (10 mg) (Bioanalyse, Ankara), and



rifampicin (5 mg) (Bioanalyse, Ankara), will be evaluated. The results will be evaluated in accordance with the recommendations of EUCAST, 2018 (The European Committee on Antimicrobial Susceptibility Testing).

**Results:** In this study, the antibiotic resistance profiles of *Corynebacterium striatum* isolated from 38 patients were evaluated using the Kirby-Bauer disk diffusion method. Resistance rates for benzylpenicillin, ciprofloxacin, moxifloxacin, and tetracycline were found to be 97.37%. The resistance rate for clindamycin was 89.47% while it was 100% for rifampin. On the other hand, no resistance was observed against vancomycin and linezolid, while 3% resistance was detected against gentamicin.

**Conclusion:** *C. striatum* isolates are becoming increasingly frequently seen pathogens in the clinical microbiology laboratory. *C. striatum* isolates are becoming increasingly frequently seen pathogens in the clinical microbiology laboratory. In this study, we aimed to reveal antibiotic susceptibility data, using strains isolated only from from endotracheal aspirate cultures, which we encountered with increasing frequency in our hospital. We also aimed to draw attention to the inadequacy of studies on endotracheal aspirates in our country.

**Key words:** *Corynebacterium striatum*, endotracheal, susceptibility, resistance

## SOP-38

# Immunohistochemical Analysis of Connexin 43 as a Prognostic Factor in Gliomas

Elif CENGİZ<sup>1</sup>, Ganime ÇOBAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Medical Pathology, İstanbul, Türkiye

**Introduction:** Gliomas are tumors that account for 81% of primary intracranial tumors and are associated with high morbidity and mortality. To date, numerous molecules have been studied both for prognosis and grading in glial tumors. Connexins (Cx) are transmembrane channel proteins with multifunctional roles, which are found in tissues. Neuron-specific connexin subtypes exist, and Connexin 43 is predominantly found in astrocytes and glial cells in the central nervous system.

**Method:** The study will include glial tumors diagnosed as grade 2, 3, and 4 that were operated on in our hospital between January 2013 and November 2023. Hematoxylin and eosin-stained slides, and blocks fixed with 10% buffered formaldehyde and embedded in paraffin, will be retrieved from the archives, and cases with sufficient tissue in the blocks will be included in the study. Connexin 43 antibody in appropriate dilutions and cytoplasmic staining will be interpreted as positive if both conditions are met. Demographic data of the patients will be compared with the expression levels of Connexin 43.

**Results:** This study includes 102 patients (12 grade 2, 11 grade 3, 63 grade 4 and 16 control cases). There is no significant difference between connexin 43 expression and glioma recurrence ( $p=0.388$ ). However, a significant difference was found between connexin 43 and IDH expression ( $p=0.036$ ), and a significant difference in the Ki67 rate ( $p=0.001$ ). There was also a significant difference between mitosis and connexin 43 expression ( $p=0.024$ ), and a significant difference between tumor grades and ( $p=0.000$ ).

**Conclusion:** Cx43 expression is increased as tumor grades decreased. The rates of Ki67 and mitosis also decrease with an increase in Cx43 expression. There is no connection between Cx43 expression and glioma recurrence. In cases where molecular studies cannot be done, Cx43 expression loss can be used in grading of glial tumors.

**Key words:** Glioma, connexin 43, gap junction

## SOP-39

## The Association of Vitamin D and Oral Hygiene with Periodontal Diseases During Pregnancy

Emine Miral<sup>1</sup>, Melda Kuyucu<sup>2</sup>, Şadiye Günpınar<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynaecology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Dentistry, Department of Periodontology, İstanbul, Türkiye

**Introduction:** The dental health of pregnant women can be affected by oral hygiene behavior and vitamin D and calcium levels, which may cause periodontal diseases. This study aims to examine the association between oral hygiene behavior, vitamin D, and calcium levels, and periodontal disease parameters among pregnant women.

**Method:** In this cohort study, 28 pregnant women at Bezmialem Hospital were assessed using an Oral Hygiene Habits Survey and two periodontal examinations at 11-14 and 28-40 weeks of pregnancy. The examinations measured bleeding on probing (BoP) (30%), probing depth (PD) ( $\geq 4$  mm), and periodontal index (PI), with values above these thresholds indicating increased risk of periodontal disease. Vitamin D and calcium levels, measured during examinations, were analyzed for changes and compared with periodontal parameters to evaluate their associations with oral hygiene habits.

**Results:** The mean age of participants was  $29.96 \pm 4.11$ . Among the participants, 85.2% brushed their teeth regularly. Mean vitamin D levels increased from  $16.31 \pm 11.18$  to  $28.71 \pm 12.96$  ( $p < 0.001$ ), while calcium levels decreased from  $9.39 \pm 0.35$  to  $9.12 \pm 0.32$  ( $p < 0.001$ ). PD declined from  $1.76 \pm 0.48$  to  $1.39 \pm 0.45$  ( $p < 0.002$ ), and PI decreased from  $1.35 \pm 0.45$  to  $0.93 \pm 0.66$  ( $p = 0.006$ ), all showing statistically significant changes. Mean BoP decreased from  $44.04 \pm 17.71\%$  to  $41.22 \pm 23.48\%$ , but this change was not statistically significant ( $p > 0.05$ ). BoP was significantly higher in participants with toothache (mean rank=18.05) than in those without (mean rank=11.62). PI reduction was significantly greater in non-smokers (mean rank=15.68) than in former smokers (mean rank=6.02) ( $p < 0.05$ ). No significant relationship was found between oral hygiene habits, vitamin D and calcium changes, and PD, PI, or BoP changes ( $p > 0.05$ ).

**Conclusion:** The results showed that vitamin D increased with supplementation, while PD, PI, and BoP significantly decreased. However, no significant relationship was found between these changes and oral hygiene habits.

**Key words:** Vitamin D, calcium, oral hygiene, periodontal disease



# BEZMÎÂLEM science

**9<sup>th</sup> ANNUAL  
MEDICAL STUDENTS'  
RESEARCH DAY  
14 MARCH 2025**

**POSTER PRESENTATIONS**

## PP-1

# Investigation of the Effectiveness of the Emergency Department Chest Pain Assessment Score in Patients Followed with a Preliminary Diagnosis of Acute Coronary Syndrome

Mücahit KAYNAK<sup>1</sup>, Bahadır TAŞLIDERE<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Emergency Medicine, İstanbul, Türkiye

**Introduction:** Chest pain assessment in patients admitted to the emergency department is an important clinical problem in terms of early diagnosis and safe discharge decisions. Current scoring systems may be insufficient in predicting major cardiac events. In this study, the risk assessment of patients admitted with chest pain using the emergency department chest pain score (EDACS) was performed, and the effectiveness of this scoring system was investigated.

**Method:** This retrospective study was conducted on patients over the age of 18 who were admitted to the emergency medicine department of our hospital between 01.06.2023 and 31.12.2023 with suspected acute coronary syndrome. The patient group determined in accordance with the Helsinki criteria was included in the study. Data were obtained from the hospital automation system, and the patients' demographic information, clinical characteristics, and EDACS scores were recorded. Patients were classified as low and high risk according to the EDACS score, and the compatibility of this classification with clinical results was analyzed.

**Results:** The MedCalc statistical program was used for the analyses, and frequencies and percentages were calculated for categorical variables. Interrater consistency was measured with the Kappa test, and differences between independent variables were compared with the Student's t-test and the Kruskal-Wallis test. The statistical significance level was determined as  $p=0.05$ .

**Conclusion:** The results show that the EDACS score has high sensitivity in predicting major cardiac events and ensures the safe discharge of low-risk patients. These findings support the use of the EDACS score as an effective tool in the management of chest pain in the emergency department.

**Key words:** Acute coronary syndrome, emergency department, chest pain, EDACS, risk stratification

PP-2

## Predictive and Prognostic Value of SOFA-C in Sepsis Patients Admitted to the Intensive Care Unit

Ayşe Zülal ATABEY<sup>1</sup>, Tuğba KÖK<sup>2</sup>, Ali TOPRAK<sup>3</sup>, Murat HALILOĞLU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Anesthesiology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Sepsis is a life-threatening organ dysfunction. Early diagnosis improves outcomes. Systemic Inflammatory Response Syndrome (SIRS), Sequential Organ Failure Assessment (SOFA), Quick Sepsis-related Organ Failure Assessment (qSOFA) and NEWSII are commonly used for sepsis evaluation. CRT is useful in guiding fluid resuscitation, and identifying patients with more severe sepsis. We propose that the SOFA-C score, which we have developed by combining the qSOFA with CRT, could be an effective method for early diagnosis.

**Method:** Our study will include intensive care unit (ICU) patients with sepsis. Demographics, medical history, and chronic diseases will be recorded. SIRS, qSOFA, and NEWSII scores will be assessed. Data on CRT, lactate, APACHEII, SOFA, urine output, C-reactive protein, procalcitonin, vasopressor use, renal replacement therapy, hospital/ICU stay, and 28-day mortality will be collected. After data collection, the predictive value of SOFA-C, qSOFA, and NEWS-II in diagnosing sepsis will be compared.

**Results:** The difference in SOFA scores between the sepsis and non-sepsis groups was found to be statistically significant ( $p<0.001$ ). The median SOFA score was 2 (1-3) in the sepsis group and 1 (0-1) in the non-sepsis group. A significant difference was also observed in qSOFA scores ( $p<0.001$ ), with a median of 2 (1-2) in the sepsis group and 1 (0-1) in the non-sepsis group. The difference in NEWS-II scores between the groups was found to be highly significant ( $p<0.001$ ), with a median of 10 (7-11) in the sepsis group and 6 (4-8) in the non-sepsis group. Also a logistic regression analysis was conducted to evaluate the predictive value of the NEWSII, qSOFA, and SOFA-C scoring systems for the specified clinical outcome. SOFA-C emerged as the strongest predictor, with the highest odds ratio [ $\text{Exp}(B)=6.335$ ] and a statistically significant contribution to the model.

**Conclusion:** The study results demonstrate that SOFA-C is more successful than NEWS-II and qSOFA in predicting sepsis.

**Key words:** qSOFA, sepsis, SOFA-C

## PP-3

## Comparison of Regulatory T Cell Ratios in Pre- and Post-treatment Biopsies of Patients with Crohn's Disease

Elif TENEKECİ<sup>1</sup>, Ganime ÇOBAN<sup>2</sup>, Özlem TOLUK<sup>3</sup>, Ali Tüzin İNCE<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Gastroenterology, İstanbul, Türkiye

**Introduction:** Crohn's disease (CD) is a chronic inflammatory disorder characterized by cycles of relapse and remission due to dysregulated immune responses. Regulatory T cells (Tregs) play a crucial role in immune homeostasis, and their dysfunction contributes to chronic inflammation and tissue damage. This study investigates histopathological changes and FOXP3-positive Treg ratios in pre- and post-treatment biopsies to assess treatment effects on immune regulation.

**Method:** Patients diagnosed with CD between 2013 and 2024 were retrospectively analyzed. Clinical, demographic, and histopathological data were collected from hospital records. Immunohistochemical staining was performed on suitable biopsy samples using a FOXP3 antibody. Stained cells were counted in three high-density areas under high magnification ( $\times 400$ ). Pre- and post-treatment Treg ratios were compared, and statistical analysis was conducted to determine significant differences.

**Results:** In 29 patients, total Treg ratios significantly decreased after treatment ( $p=0.009$ ), indicating systemic immune suppression. However, 34.5% of patients exhibited increased total Treg ratios, suggesting heterogeneity in immune responses. Intraepithelial Treg ratios showed an overall decrease, but this was not statistically significant ( $p=0.909$ ). Nevertheless, 55.2% of patients had increased intraepithelial Treg ratios, suggesting localized immune modulation within the epithelial compartment.

**Conclusion:** This study found a significant reduction in total Treg ratios post-treatment ( $p=0.009$ ), reflecting systemic immune suppression. Patients with increased total Tregs (34.5%) responded well to treatment, while those with decreased ratios showed poor response. Intraepithelial Treg ratios remained stable overall ( $p=0.909$ ), but 55.2% exhibited increases, suggesting localized immune modulation. These findings highlight the variability of immune responses in Crohn's disease and the importance of further research to guide personalized treatments.

**Key words:** Regulatory T cells (Tregs), Crohn's disease (CD), FOXP3

PP-4

## Comparison of Umbilical Cord Blood Gas Parameters in Newborns Born to Mothers with Early and Late-onset Preeclampsia

Şevval SAVAŞ<sup>1</sup>, Halime ÇALI ÖZTÜRK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Preeclampsia (PE) is a hypertensive disorder of pregnancy that can be classified into early-onset PE (EOPE), occurring before 34 weeks, and late-onset PE (LOPE), occurring at or after 34 weeks. Generally, EOPE is associated with more severe maternal and neonatal outcomes. The effects of PE onset week on umbilical cord blood (UCB) gas parameters have not been fully studied; only UCB pH levels have been compared, with conflicting results across studies. This study aims to compare the UCB gas parameters of newborns born to mothers with EOPE and LOPE.

**Method:** This study included 100 women diagnosed with PE at Bezmialem Vakıf University, Faculty of Medicine Hospital between January 2013 and May 2024. Participants were categorized into EOPE (<34 weeks) and LOPE (≥34 weeks) groups based on the gestational age at diagnosis. Venous UCB gas parameters (pH, HCO<sub>3</sub>, base excess, pCO<sub>2</sub>, lactate), maternal demographics, delivery method, gestational age, and neonatal outcomes were recorded.

**Results:** No significant differences in UCB gas parameters were observed between the EOPE and LOPE groups. However, EOPE newborns had significantly lower 1- and 5-minute APGAR scores (6.84/8.54 vs. 7.61/9.14, p=0.021/p=0.005) and a higher rate of cesarean delivery (98% vs. 80%, p=0.003).

**Conclusion:** Although UCB gas parameters, including pH, did not significantly differ in our study, similar to a previous study on the same topic, EOPE was associated with lower APGAR scores. Larger studies are needed to further explore the effects of PE onset week on UCB parameters.

**Key words:** Preeclampsia, umbilical cord blood gas, early-onset preeclampsia, late-onset preeclampsia



PP-5

## Evaluation of the Relationship Between Body Perception, Self-esteem and Social Media Addiction Levels of Bezmialem Vakıf University, Faculty of Medicine Students

Beyza TOKATLI<sup>1</sup>, Muhammed Batuhan AYIK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Mental Health and Diseases, İstanbul, Türkiye

**Introduction:** This study aims to examine the relationship between body image, self-esteem and social media addiction among medical students at Bezmialem Vakıf University, Faculty of Medicine with a particular focus on gender differences.

**Method:** A cross-sectional survey was conducted with medical students from Bezmialem Vakıf University Faculty of Medicine, including students from all six academic years (1<sup>st</sup> to 6<sup>th</sup> year). The survey was administered via Google Forms between May 2024 and November 2024. Participants were assessed using the Rosenberg self-esteem scale, body image scale, and social media addiction scale. Inclusion criteria included age, gender, and absence of psychiatric disorders or substance abuse.

**Results:** A total of 87 students participated in the study (47 female, 40 male), with a mean age of 22.7 years. The results revealed a positive correlation between self-esteem and body image perception ( $r=0.028$ ,  $p<0.01$ ), indicating that as self-esteem increased, body image perception also improved. Additionally, a negative correlation was found between social media addiction and self-esteem ( $r=-0.048$ ), suggesting that higher social media addiction levels were associated with lower self-esteem. Gender-based analysis showed that female students had a higher level of social media addiction than male students.

**Conclusion:** The findings suggest that medical students with higher self-esteem tend to have a more positive body image. Moreover, increased social media addiction is associated with lower self-esteem, particularly among female students. These results highlight the need for further research into the psychological impacts of social media use on medical students.

**Key words:** Body image, self-esteem, social media addiction

PP-6

## Follow-up and Surgical Outcomes of Patients with Atypia (AUS)/Follicular Lesion (FLUS) (Bethesda 3) of Undetermined Significance as a Result of Thyroid Biopsy

Beyda KOÇYİĞİT<sup>1</sup>, Beril GÜLER<sup>2</sup>, Yeliz Emine ERSOY<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of General Surgery, İstanbul, Türkiye

**Introduction:** Bethesda category 3 (atypia of undetermined significance/follicular lesion of undetermined significance) thyroid nodules represent a diagnostic challenge. This study evaluates the outcomes of patients categorized as Bethesda 3 at Bezmialem Vakıf University Hospital using comprehensive clinical, biochemical, and radiological criteria.

**Method:** A retrospective analysis was conducted on patients with Bethesda 3 thyroid nodules presenting to the general surgery clinic between October 2010 and March 2024. Inclusion criteria targeted patients with successful follow-up and those undergoing surgery due to suspected malignancy. Data collected included demographics, clinical history, laboratory tests (e.g., TSH, FT3, FT4, anti-Tg, anti-TPO), radiology reports, and pathological results. Statistical analyses were conducted to compare follow-up and surgical findings.

**Results:** Among 109 patients with Bethesda 3 nodules, 90 (82.6%) were female and 19 (17.4%) were male, with a mean age of 47.2 and 53.1 years, respectively. Of these, 45 underwent surgery, with malignancy confirmed in 34 (75.6%) cases. Follow-up biopsies in 64 patients followed clinically and radiologically confirmed benign outcomes. Nodule size showed a significant difference among groups ( $p=0.00252$ ), while no significant association was found between age and malignancy ( $p=0.40009$ ). In the patient group with malignant pathology detected after surgery, the mean nodule size was  $23.53\pm 9.94$  mm, with a median of 23.50 mm. The interquartile range was 17.25-30.50 mm. This suggests that an increase in nodule size constitutes a risk factor for malignancy.

**Conclusion:** The study underscores the need for individualized management of Bethesda 3 nodules. While malignancy was prevalent in surgically treated cases, clinical follow-up proved effective in benign cases. Comprehensive evaluation, including repeat biopsies and detailed criteria, is vital for optimal patient care.

**Key words:** Bethesda category 3, thyroid nodules, malignancy, fine-needle aspiration

PP-7

## Level of Knowledge and Awareness of 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> Year Students at Bezmialem Vakıf University, Faculty of Medicine Regarding Attention Deficit Hyperactivity Disorder

Eyüp Kaan TAŞPOLAT<sup>1</sup>, Saliha KILINÇ<sup>2</sup>, Özlem TOLUK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Child and Adolescent Psychiatry, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Attention deficit hyperactivity disorder (ADHD) is a common neurodevelopmental disorder marked by persistent patterns of inattention, hyperactivity, and impulsivity. Given its significant impact on various domains of life and its frequent co-occurrence with other conditions, ADHD poses considerable challenges for individuals and their families. Consequently, early identification and intervention are essential. Therefore, early diagnosis and intervention are crucial.

**Method:** Level of knowledge and awareness of 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> year students at Bezmialem Vakıf University, Faculty of Medicine regarding ADHD was evaluated through an online survey. The online survey was designed to collect sociodemographic data and assess participants' knowledge and awareness regarding ADHD. Data were subjected to descriptive and inferential statistical analyses, and results were tested at the 0.05 significance level.

**Results:** The study participants demonstrated a fundamental understanding of ADHD. However, no statistically significant correlations were observed between the students' sociodemographic variables (gender, age, and grade level) and their level of knowledge regarding ADHD.

**Conclusion:** Our study suggests that including ADHD in the medical school curriculum could significantly enhance students' awareness of the disorder. We emphasize the importance of strengthening the medical curriculum to better equip medical students with the knowledge and skills necessary to understand and manage ADHD.

**Key words:** Attention deficit hyperactivity disorder, awareness, medical student

## PP-8

## Analysis of Demographic Characteristics and Laboratory Data of Patients Diagnosed with Autoimmune Thyroiditis

Ömer Faruk KONAK<sup>1</sup>, Abdüsselam ŞEKERCI<sup>2</sup>

<sup>1</sup>Bezmiâlem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmiâlem Vakıf University, Faculty of Medicine, Department of Internal Medicine, İstanbul, Türkiye

**Introduction:** Autoimmune thyroiditis is a common cause of thyroid diseases, including Graves-Basedow disease and Hashimoto thyroiditis. Autoimmune thyroiditis is marked by thyroid-specific autoantibodies and is linked to genetic, environmental, and epigenetic factors. In our study, individuals followed up with a diagnosis of autoimmune thyroiditis in the adult age group will be examined in terms of demographic and laboratory characteristics, and in particular, the connection between autoimmune thyroiditis and inflammatory markers will be investigated.

**Method:** This study included 24 patients diagnosed with autoimmune thyroiditis and a control group of 24 healthy individuals. Autoimmune thyroiditis was diagnosed based on high thyroid stimulating immunoglobulin, anti-thyroglobulin, and anti-thyroperoxidase titers and/or thyroiditis findings on thyroid ultrasonography (USG). These data were obtained retrospectively from our hospital's software system. Patients' demographic information, laboratory data, and USG images were analyzed and compared for the patient group and the control group.

**Results:** In the first group, there were 16 females and 8 males the average age was 40.37, and the average body mass index (BMI) was 28.43. In the control group, there were 18 females, 6 males, the average age was 45.08 and the average BMI was 29.03. No statistically significant difference was found in inflammatory markers (C-reactive protein, erythrocyte sedimentation rate, neutrophil-to-lymphocyte ratio, ferritin); however, a significant difference was found between thyroiditis findings in USG ( $p=0.002$ ) between the two groups.

**Conclusion:** No significant difference was observed in the inflammatory markers of autoimmune thyroiditis patients compared to healthy patients. It should be kept in mind that most of these patients were under treatment, which may have affected this situation. The significant increase in findings in favor of thyroiditis on USG showed that antibody testing may be important in patients with thyroiditis detected on USG.

**Key words:** Hashimoto, graves, autoimmune thyroiditis, inflammatory markers, USG

## PP-9

## Comparison of Alexithymia and Empathy Levels Between Medical Students and Engineering Students

Büşra Nur KÖSE<sup>1</sup>, Muhammed Batuhan AYIK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Psychiatry, İstanbul, Türkiye

**Introduction:** Alexithymia is characterized by difficulty recognizing and expressing emotions, while empathy is the ability to understand and share others' emotions. This study aims to compare alexithymia and empathy levels between medical and engineering students, and to examine changes throughout their education, providing insights into the impact of different academic disciplines on alexithymia and empathy.

**Method:** This study applied the Toronto Alexithymia Scale (TAS) and the Empathy Assessment Scale (EAS) to 395 students from Bezmialem Vakıf University, Faculty of Medicine (1<sup>st</sup>, 4<sup>th</sup>, and 6<sup>th</sup> years) and İstanbul Technical University Faculty of Engineering (1<sup>st</sup> and 4<sup>th</sup> years). TAS was analyzed through its total score and subscales: Difficulty Identifying Feelings (TAS-A), Difficulty Expressing Feelings (TAS-B), and Externally-Oriented Thinking (TAS-C). EAS was evaluated based on its total score and subscales: Social interaction, cognitive behavior (CB), and emotional identification (EI).

**Results:** The EI scores of 4<sup>th</sup>-year engineering students were statistically significantly higher than those of 1<sup>st</sup>-year engineering students ( $p=0.017$ ). There were no statistically significant differences in alexithymia and empathy scores between 1<sup>st</sup>-year medical and engineering students. The CB and total EAS scores of 4<sup>th</sup>-year engineering students were significantly lower than those of 4<sup>th</sup>-year medical students ( $p=0.025$   $p=0.018$ ), while their TAS-C scores were significantly higher than those of 6<sup>th</sup>-year medical students ( $p=0.04$ ). TAS-A scores of 1<sup>st</sup>-year medical students were statistically significantly higher than those of 6<sup>th</sup>-year medical students ( $p=0.025$ ). Medical students had significantly lower TAS-C scores than engineering students ( $p=0.046$ ).

**Conclusion:** Based on these results, medical education may play a role in developing empathy skills compared to engineering education, as understanding patients' emotions is essential in medicine. Additionally, medical education may have a positive impact by reducing difficulties in identifying emotions.

**Key words:** Alexithymia, empathy, medical students, engineering students

PP-10

## Evaluation of Dyspepsia Symptoms in Smoking and Non-smoking Students at Bezmialem Vakıf University, Faculty of Medicine Students

Beyza Nur ÖZTÜRK<sup>1</sup>, Ali TOPRAK<sup>2</sup>, Hakan ŞENTÜRK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Dyspepsia is a condition characterized by digestive discomfort, including symptoms such as stomach pain, bloating, gas, heartburn, and indigestion. Smoking, which is associated with many health problems, also has significant effects on dyspepsia. It has been shown that smoking reduces blood flow, affects mucosal barriers, and triggers the release of free radicals that slow down cell proliferation. These findings suggest that smoking may be linked to gastrointestinal (GI) diseases. The aim of this study is to evaluate of dyspepsia symptoms in smoking and non-smoking students using the GI Symptom Rating Scale (GSRS) scoring system.

**Method:** This descriptive study was conducted by applying the GSRS to 210 medical students at Bezmialem Vakıf University and categorized them into two groups: smokers and non-smokers. The survey assessed sociodemographic characteristics, smoking habits and GI symptoms. GSRS scores were calculated for each participant to evaluate the presence and severity of dyspeptic symptoms.

**Results:** Totally 213 medical students were included in this study, 108 smokers and 105 non-smokers. There were 105 females (49.3%) and 108 males (50.7%); the average age was 22.13. The results revealed statistically significant differences in reflux ( $p<0.001$ ), diarrhea ( $p<0.001$ ), and total symptom scale scores ( $p=0.023$ ) between smokers and non-smokers, indicating higher levels of these symptoms among smokers. However, no statistically significant differences were observed for abdominal pain ( $p=0.281$ ), indigestion ( $p=0.157$ ), and constipation ( $p=0.582$ ), indicating similar symptom distributions for these categories between the groups.

**Conclusion:** These findings suggest that smoking may contribute to the increased severity of dyspepsia symptoms, particularly reflux and diarrhea. The results highlight the potential negative impact of smoking on digestive health and underline the importance of preventive interventions to mitigate these symptoms.

**Key words:** Dyspepsia, smoking, gastrointestinal diseases, medical students

PP-11

## Evaluation of Medical Artificial Intelligence Readiness Levels of Bezmialem Vakıf University Medical Specialization and Faculty of Medicine Students

Zehra ARVAS<sup>1</sup>, Semra ÖZÇELİK<sup>2</sup>, Ali TOPRAK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Medical Education, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Artificial intelligence is used to improve diagnostic processes in the healthcare field, playing an essential role in imaging, echocardiography, and the detection of neurological diseases. However, training in artificial intelligence remains insufficient within the curricula of medical faculties. Evaluating readiness levels will be beneficial in determining the educational curriculum for these competencies. This study aimed to assess the readiness levels for artificial intelligence among medical faculty and specialty students at Bezmialem Vakıf University.

**Method:** The study included medical faculty and specialty students. The “Medical Artificial Intelligence Readiness Scale” was administered online, and the scale was evaluated on a total of 110 points. A power analysis determined that the minimum sample size was 162. The data were analyzed using SPSS 21.

**Results:** The responses of 162 participants revealed average scores of 24.91 out of 40 for the cognitive factor, 29.64 out of 40 for the skill factor, 10.69 out of 15 for the predictive factor, and 10.92 out of 15 for the ethical factor. The overall score was 76.15 out of 110. No significant difference was observed between class levels and specialty students ( $p=0.569$ ).

**Conclusion:** The study showed that the overall readiness levels for artificial intelligence among medical faculty and specialty students at Bezmialem Vakıf University were moderate. These findings highlight the need for incorporating comprehensive artificial intelligence training programs into medical education to ensure that future healthcare professionals are well-prepared for advancements in medical technologies.

**Key words:** Artificial intelligence, medical education, readiness levels

PP-12

## Retrospective Evaluation of Enthesopathy, Sacroiliitis and Clinical Parameters in Ankylosing Spondylitis Patients

Emrecañ GÜNEŞ<sup>1</sup>, Teoman AYDIN<sup>2</sup>, Ali SÖKER<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Physical Therapy and Rehabilitation, İstanbul, Türkiye

**Introduction:** Ankylosing spondylitis (AS) is a chronic inflammatory disease affecting the spine and sacroiliac joints, leading to progressive vertebral fusion. Enthesopathy, inflammation at tendon and ligament insertion sites, is a key feature of AS. Early diagnosis and monitoring of disease activity are essential for managing AS. Magnetic resonance imaging (MRI) is effective in detecting early enthesopathic changes, while pelvic anteroposterior (AP) radiographs are used for later-stage changes. This study compares clinical parameters and imaging findings (sacroiliac MRI vs. pelvic AP) in AS patients.

**Method:** This retrospective study reviewed the imaging records of 2183 AS patients in the Department of Physical Therapy and Rehabilitation at Bezmialem Vakıf University (2019-2024). After excluding incomplete imaging data, 60 patients (30 males, 30 females, aged 20-50 years) were included. Imaging methods included sacroiliac MRI (group 1) and pelvic AP radiographs (group 2). Findings were compared regarding enthesopathy and sacroiliitis; clinical parameters such as age, gender, disease duration, and symptom severity were recorded.

**Results:** Sixty patients (30 males, 30 females) were included. In the sacroiliac MRI group, significant findings included contrast enhancement (suggesting active inflammation) and erosive changes in the sacroiliac joints ( $p < 0.05$ ), indicating acute sacroiliitis. Joint space narrowing was also observed. Pelvic AP radiographs revealed enthesopathies of the bones, but missed soft tissue inflammations. Statistically significant differences were found in the early detection of inflammation between MRI and radiographic methods ( $p < 0.01$ ). The severity of symptoms was more pronounced in patients with MRI evidence of active sacroiliitis.

**Conclusion:** This study supports Sacroiliac MRI for early detection of inflammatory changes in AS. MRI provides better assessment of active disease, while the Pelvic AP radiography remains valuable due to its accessibility and lower cost. A hybrid approach, combining both methods, is recommended for comprehensive evaluation, especially for early-stage disease detection.

**Key words:** Ankylosing spondylitis, sacroiliac MRI, pelvic AP, enthesopathy, sacroiliitis, radiography



## PP-13

# The Relationship Between Caregiver Burden for Elderly Patients and Caregiver Muscle Strength, Nutrition, and Sleep Status

Nisa ÖZEN AYDIN<sup>1</sup>, Özge PASİN<sup>2</sup>, İrem TANRIVERDİ<sup>3</sup>, Pınar SOYSAL<sup>4</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Geriatrics, İstanbul, Türkiye

<sup>3</sup>University of Health Sciences Türkiye, Hamidiye Faculty of Medicine, Department of Bioistatistic, İstanbul, Türkiye

<sup>4</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Geriatric Medicine, İstanbul, Türkiye

**Introduction:** The elderly population, defined as individuals aged 65 and over, is growing rapidly worldwide. This demographic shift is leading to an increased burden on caregivers, who are essential in assisting elderly patients. In our study, we aim to determine the burden of caregivers providing care for elderly patients.

**Method:** Our study was conducted from March 2023 at Bezmialem Vakıf University Faculty of Medicine Hospital, focusing on caregivers of hospitalized patients aged 65 and over. After collecting personal information, we used the caregiver burden scale (CBS) to assess caregiver burden, the Mini Nutritional Assessment Test (MNAT) and healthy eating attitude scale, to assess nutritional status, and the Epworth Sleepiness Scale (ESS) and Insomnia Severity Index (ISI) to assess sleep status. For muscle strength, a handgrip dynamometer was applied to the arm three times, and the maximum result was evaluated.

**Results:** To date, the study has enrolled 100 volunteer caregivers, comprising 79 females and 21 males, with a mean age of 50.5 years. According to the MNAT, the prevalence of undernutrition among participants is 48%. The ESS indicates a daytime excessive sleepiness prevalence of 12%, while the ISI reveals a moderate insomnia rate of 10%. Additionally, the handgrip test shows muscle weakness rates of 5% in females and 4% in males. After adjustment for all confounders, when comparing total scores among participants, a negative correlation was still observed between CBS and the MNAT, and a positive correlation was found between CBS and the ISI ( $p < 0.05$ ).

**Conclusion:** Caregiver burden is linked to poor nutrition and sleep disturbances. Therefore, the sleep and nutrition status of caregivers should be regularly monitored, and necessary measures should be taken.

**Key words:** Caregiver burden, elderly patients, nutrition, sleep status, muscle strength

PP-14

## Evaluation of Sun Protection and Skin Cancer Awareness Among Medical Students at Bezmialem Vakıf University

Melisa GÜNGÖR<sup>1</sup>, Güllü GENÇEBAY<sup>2</sup>, Ali TOPRAK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Dermatology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Skin cancer arises from uncontrolled skin cell growth, often due to ultraviolet exposure or genetics. Early detection is crucial, emphasizing regular dermatologic exams and sun protection. This study evaluated skin cancer awareness and sun protection among Bezmialem Vakıf University medical students; it identified key information sources to improve knowledge.

**Method:** This descriptive study was conducted using a 29-item survey administered to 218 fourth-, fifth-, and sixth-year medical students. The questionnaire assessed participants' sociodemographic characteristics, sun protection behaviors, skin cancer risk factors, and knowledge levels. Of the participants, 71.1% were female, and 28.9% were male.

**Results:** Only half of the participants correctly identified the most common type of skin cancer. Dermatologists were the most frequently cited source of information on skin examinations (35.7%), followed by social media (31.1%). The percentage of correct answers to 10 knowledge-based questions increased with academic year; 65.6% for fourth-years, 67.1% for fifth-years, and 72.08% for sixth-years. A significant difference was observed in the awareness of the average number of nevi in individuals, between participants with a family history of skin cancer (17.6%) and those without (21.9%) ( $p=0.034$ ). Students with freckles demonstrated significantly higher correct response rates to questions on melanoma characteristics, risk factors, and skin examination protocols ( $p<0.001$ ,  $p<0.001$ ,  $p=0.021$ , respectively). Additionally, a family history of skin cancer was associated with higher awareness of melanoma risk factors ( $p=0.013$ ). However, performing self-skin examinations did not significantly impact knowledge levels ( $p=0.506$ ).

**Conclusion:** Knowledge levels increased with academic year, highlighting the effectiveness of medical education. Students with freckles or a family history of skin cancer exhibited greater awareness of melanoma risk factors, emphasizing the need for targeted educational interventions to improve skin cancer awareness across all demographics.

**Key words:** Awareness, skin cancer, medical students, melanoma

## PP-15

## Do Childhood Traumas Increase Suicidal Thoughts Among Depressed Youth?

İbrahim GENÇ<sup>1</sup>, Songül DERİN<sup>2</sup>, Saliha B. SELMAN<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Child and Adolescent Psychiatry, İstanbul, Türkiye

<sup>3</sup>University of Wisconsin-Madison, Department of Human Development and Family Studies, Madison, WI, USA

**Introduction:** Major depressive disorder, characterized by a persistent low mood or lack of interest, is linked to increased suicidal ideation and attempts during adolescence. Although childhood trauma, such as neglect or abuse, is associated with later depression, its role in suicidal thoughts among depressed adolescents is unclear. This study seeks to explore how childhood trauma influences suicidal ideation in adolescents diagnosed with depression.

**Method:** Participants aged 11-18 (M=15.7, SD=1.7) completed standardized assessments, including the Childhood Trauma Questionnaire, Revised Child Anxiety and Depression Scale, Suicide Probability Scale, and Suicidal Behavior Scale. Path analysis was conducted to evaluate direct and indirect associations, controlling for sociodemographic variables.

**Results:** Depression status was significantly associated with higher scores on childhood trauma subdomains, including sexual abuse ( $p=0.045$ ), physical abuse ( $p=0.035$ ), emotional abuse ( $p=0.001$ ), and emotional neglect ( $p=0.009$ ), while the association with physical neglect was not significant ( $p=0.143$ ). Emotional abuse ( $p=0.023$ ) and emotional neglect ( $p=0.014$ ) were significantly associated with suicidal probability, which strongly predicted suicidal behavior ( $p<0.001$ ). Depression status also directly predicted suicidal probability ( $p<0.001$ ) and suicidal behavior ( $p=0.033$ ). Additionally, depression status was indirectly associated with suicidal behavior through the mediating effects of emotional abuse and suicidal probability, ( $p=0.032$ ). The total association between depression status and suicidal behavior, combining direct and indirect effects, was significant ( $p<0.001$ ).

**Conclusion:** This study highlights the significant role of childhood trauma, particularly emotional abuse and neglect, in predicting suicidal ideation and behavior in depressed adolescents. Analysis shows that emotional abuse and neglect contribute indirectly to suicidal behavior through suicidal probability. These findings highlight the importance of addressing trauma histories in youth with depression to mitigate suicidality risk. Future research should further explore these relationships in larger samples to develop targeted interventions.

**Key words:** Childhood trauma, depression, suicidality, youth

PP-16

## Histopathological and Immunohistochemical Analysis of Eosinophilic Kidney Tumors

Ayşe Didem ÖZBEK<sup>1</sup>, Ganime ÇOBAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

**Introduction:** Eosinophilic renal tumors represent a diverse group of neoplasms that challenge differential diagnosis due to overlapping histopathological and immunohistochemical features. These tumors, which can be malignant, benign, or indeterminate in behavior, require accurate classification to guide prognosis and treatment. The recent updates in the World Health Organization (WHO) 2022 classification introduce new categories for these tumors, enhancing diagnostic precision.

**Method:** This retrospective study reviewed cases of eosinophilic renal tumors diagnosed between January 2013 and November 2023 at Bezmialem Vakıf University Hospital. A total of 299 patients who underwent partial or radical nephrectomy were included. Pathological reports were re-evaluated according to the WHO 2022 classification, documenting histopathological and immunohistochemical features. Demographic and clinical data were also analyzed.

**Results:** The study identified 299 cases of eosinophilic renal tumors, including 21 angiomyolipomas, 119 clear cell renal cell carcinomas, 1 eosinophilic solid cystic renal cell carcinoma, 1 eosinophilic vacuolated tumor, 53 chromophobe renal cell carcinomas, 4 low-grade oncocytic tumors, 35 oncocytomas, 48 papillary renal cell carcinomas, 7 sarcomatoids, 1 synchronous oncocytoma and angiomyolipoma, 1 succinate dehydrogenase deficient renal cell carcinoma, 2 TFE-3 rearrangement (Xp 11 translocation) carcinomas, and 6 unclassified renal cell carcinomas. Three cases were reclassified based on the latest WHO criteria. One case, previously diagnosed as oncocytoma, was reclassified as an eosinophilic vacuolated tumor. Two cases initially diagnosed as chromophobe RCC were reclassified to low-grade oncocytic tumors.

**Conclusion:** This study underscores the complexity of diagnosing eosinophilic renal tumors and emphasizes the importance of using the updated WHO 2022 classification for accurate diagnosis. The findings provide valuable insights into the epidemiology, histopathological characteristics, and classification of these rare tumors, contributing to improved understanding and clinical management.

**Key words:** Eosinophilic renal tumors, eosinophilic vacuolated tumor, low grade oncocytoma, WHO classification

PP-17

## Side Effects Due to Antituberculous Treatment in Extrapulmonary Tuberculosis Patients and Associated Risk Factors

Dilara AKYAZICI<sup>1</sup>, Yasemin AKKOYUNLU<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology, İstanbul, Türkiye

**Introduction:** Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. Tuberculosis can occur in pulmonary and extrapulmonary sites. Since antituberculous treatment is a long-term treatment, drug side effects are frequently encountered. The aim of this study is to detect and classify the side effects of antituberculous treatment in patients with extrapulmonary tuberculosis and to determine the possible risk factors.

**Method:** Among 400 extrapulmonary tuberculosis patients treated with antituberculous treatment at Bezmialem Vakıf University Hospital, those who did not meet the inclusion criteria were excluded. The remaining 297 patients were divided into two groups: those who developed side effects (n=91) and those who did not (n=206). Side effects were classified, and the treatment day on which they occurred was recorded. Risk factors such as age, gender, diabetes, hypertension, hepatitis B infection (HBV), hepatitis C infection and malignancy were recorded and their contributions to the development of side effects were evaluated. Statistical evaluation of the data was performed using the SPSS.28.V program.

**Results:** Side effects were detected in 31% of the patients. Among those, 35% had hyperuricemia, 29% had allergic reactions, 23% had hepatotoxicity, 21% had gastrointestinal intolerance, 10% had neuropathy, 7% had fatigue, 7% had visual impairment, 1% had pancreatitis and 1% had ototoxicity. No significant relationship was found between “diabetes, HBV, malignancy, age” and the development of side effects. Male gender and hypertension were found to be significant risk factors for the development of side effects (male gender  $p<0.001$ , hypertension  $p<0.05$ ).

**Conclusion:** Hypertension and male gender are significant risk factors for the development of side effects in patients with extrapulmonary tuberculosis receiving antituberculous treatment. Our results should be confirmed with further studies.

**Key words:** Antituberculous treatment, extrapulmonary tuberculosis, drug side effect

PP-18

## Comparison of Stress Levels in Women with Spontaneous Pregnancies and Women with Pregnancies Using Assisted Reproductive Technologies

Eylül AYDIN<sup>1</sup>, Halime ÇALI ÖZTÜRK<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Assisted reproductive technologies are widely used to help infertile couples conceive, but can be very stressful which can have negative effects on both the mother and the fetus. Our goal is to understand whether there is a difference between the stress levels of spontaneous and assisted pregnancies. If there is a meaningful difference, healthcare workers can be informed and patients can be guided accordingly.

**Method:** Three inventories will be used on patients who visit Obstetrics and Gynecology Department of Bezmialem Vakıf University. A demographic survey, Perceived Stress Scale and State-Trait Anxiety Inventory. The demographic survey has 9 questions. The Perceived Stress Scale is scored out of 40 points. Higher scores mean higher levels of stress. State-Trait Anxiety Inventory consists of two parts of 20 questions each. State Anxiety Inventory focuses on the anxiety levels in a particular environment, while Trait Anxiety Inventory focuses on anxiety irrespective of the environment. It is scored between 20 and 80. Higher scores mean higher levels of stress. The minimum sample size is 19. T-tests and SPSS 28V will be used.

**Results:** There is not a significant difference between the scores of spontaneous and assisted pregnancies in any of the inventories ( $p>0.05$ ). Women who are younger than 30 scored significantly higher in State Anxiety Inventory ( $p<0.05$ ), meaning they experience more stress. Women who have never been pregnant before scored higher in the Trait Anxiety Inventory ( $p<0.05$ ).

**Conclusion:** Although there isn't a significant correlation between stress levels and assisted pregnancies, young and first time mothers, experience more stress. They should be guided by healthcare workers to have a smoother pregnancy.

**Key words:** Assisted reproductive technologies, stress, pregnancy

PP-19

## Endometriosis Awareness of Doctors and Medicine Students in Bezmialem Vakıf University

Renan ÇELİK<sup>1</sup>, Çağlar ÇETİN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Liv Hospital Vadistanbul, Clinic of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Endometriosis is a gynecological condition in which glands and tissue of the endometrium migrate outside the uterus. It is a chronic and painful disease that has an effect on the quality of daily life and sexual experiences of people. It causes symptoms like dysmenorrhea, dyspareunia, infertility, dischezia, and dysuria affects 1.5-15% of the population. Endometriosis holds substantial clinical significance because of its effect on the reproductive phase of people's lives. We designed our own questionnaire that has answers or true or false about endometriosis. We processed the data from the answers of medical school students and doctors. Additionally, we aim to assess the level of knowledge in our university and generate awareness about endometriosis.

**Method:** The questionnaire was filled by 80 people and categorised into 6 groups: 2 genders (male and female), 2 jobs (student and doctor), and those having the disease. SPSS version 28 was used for statistical analysis. Pearson chi-square, Fisher-Freeman-Halton, and Fischer's exact tests were used for evaluation. People who had at least a 70% success rate counted as successful.

**Results:** The results of 80 attendees have been analyzed, and 12 (15%) of attendees and/or someone in their family had been diagnosed with endometriosis. Fifty-one (63.7%) of the attendees were female, and 29 (36.3%) of the attendees were male. Forty (50%), of the attendees were doctors. Women (36.5%) and men (35.7%) are equally successful ( $p=0.942$ ). Doctors (95%) are more successful than students (35%) ( $p<0.001$ ). People who have endometriosis (75%) are more successful than others (63.23%) ( $p=0.546$ ).

**Conclusion:** Students are significantly less successful than doctors ( $p<0.001$ ). We shared the true answers after the study, to evaluate the success rates.

**Key words:** Endometriosis awareness, university students, doctors

PP-20

## The Success Rates of Target HbA1C Levels in Type 2 Diabetic Patients

Rumeysa ÖNCÜ<sup>1</sup>, Özcan KARAMAN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Endocrinology and Metabolism, İstanbul, Türkiye

**Introduction:** Type 2 diabetes mellitus is a prevalent chronic condition that can lead to severe microvascular and macrovascular complications. This study evaluates the success rates of achieving target HbA1C levels (<7.5%) in patients with type 2 diabetes and explores factors influencing glycemic control, aiming to raise awareness about diabetes management.

**Method:** A retrospective analysis was conducted on 100 type 2 diabetic patients treated at the diabetes clinic of Bezmialem Vakıf University Hospital between 2023 and 2024. Data included demographic details, HbA1C values, treatment modalities, adherence to diet and medication, and presence of diabetes complications. Descriptive and inferential statistical analyses were performed with significance set at  $p < 0.05$ .

**Results:** Among the 100 patients (36 males, 64 females), 61 achieved target HbA1C levels (male: 69.4%; female: 56.3%). Success rates were uncorrelated with age ( $p = 0.993$ ). Patients using oral antidiabetics had higher success rates compared to those on insulin injections ( $p = 0.009$ ). Attention to diet and treatment adherence are shown to be correlated with success rates with  $p = 0.001$  and  $p = 0.017$  respectively. Complications were more common in patients failing to achieve glycemic control ( $p = 0.011$ ).

**Conclusion:** The success rates of achieving target HbA1C levels were found to be relatively high (61%) compared to past studies. No correlation was found between reaching the target values and age and gender factors. There was a strong association between glycemic control and diet, and treatment adherence. Patients on oral antidiabetics showed better outcomes than those on insulin injections. Diabetes complications were more prevalent in patients with failed glycemic control, underlining the importance and severity of achieving target levels.

**Key words:** Type 2 diabetes mellitus, HbA1C, glycemic control



## PP-21

# The Effects of Blood Sugar Regulation on Cognitive Function in Patients with Mild Cognitive Impairment

Ezgi GAZIOĞULLARI<sup>1</sup>, Yüksel ERDAL<sup>2</sup>, Ali TOPRAK<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Neurology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biostatistics, İstanbul, Türkiye

**Introduction:** Mild Cognitive Impairment (MCI) represents a clinical condition between normal aging and dementia, characterized by measurable cognitive impairment in the absence of dementia. This study aims to investigate the relationship between glycemic regulation parameters, including fasting blood glucose (FBG) and hemoglobin A1c (HbA1c), and cognitive functions assessed by the Mini-Mental State Examination (MMSE) in MCI patients.

**Method:** This cross-sectional study included 124 patients initially evaluated for MCI, of whom 79 were excluded for not meeting the inclusion criteria. Cognitive functions were assessed using the MMSE. Glycemic regulation parameters (FBG and HbA1c) were analyzed, and the neutrophil-to-lymphocyte ratio (NLR) was calculated as an inflammatory marker. Pearson's correlation coefficient was used to examine relationships between glycemic control parameters and MMSE scores. Continuous variables were compared between genders using independent sample t-tests, while categorical variables were analyzed using the chi-square test.

**Results:** There was no significant difference in MMSE scores between male and female patients. Additionally, no significant differences were found between genders in terms of age at diagnosis, current age, HbA1c levels, fasting glucose levels, and NLR ( $p > 0.05$  for all). No significant correlation was found between MMSE scores and HbA1c levels ( $r = 0.036$ ,  $p > 0.05$ ). However, a weak negative correlation was observed between FBG levels and MMSE scores ( $r = -0.281$ ), suggesting a possible inverse relationship.

**Conclusion:** Although a negative correlation was observed between glycemic regulation parameters and cognitive performance, the relationship was not statistically significant. Larger sample sizes are needed to better evaluate these findings. Considering the potential importance of glycemic regulation in cognitive health, especially in diabetic populations, further studies are needed to explore its clinical implications.

**Key words:** Mild cognitive impairment, mini mental state examination, HbA1C

PP-22

## Assesment of Liver Functions in Women with Polycystic Ovary Syndrome Using Fibroscan

Zeynep GAYHAN<sup>1</sup>, Çağlar ÇETİN<sup>2</sup>, Metin BAŞARANOĞLU<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of tetric and Gynecology, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf Univesity, Faculty of Medicine, Department of Gastroenterology, İstanbul, Türkiye

**Introduction:** This study evaluates liver function in women diagnosed with polycystic ovary syndrome (PCOS) using FibroScan, a non-invasive imaging technique. PCOS, a common endocrine disorder in women of reproductive age, is linked to metabolic disturbances that may affect liver health. By comparing PCOS patients with healthy controls, this research aims to explore the association between PCOS and hepatic steatosis.

**Method:** A total of 36 participants, including 18 women diagnosed with PCOS based on the Rotterdam criteria (2003) and 18 age-matched healthy controls, were recruited from Bezmialem Vakıf University Hospital. Anthropometric data, such as waist-to-hip ratio and body mass index (BMI), were recorded. Liver steatosis and stiffness were assessed using FibroScan, focusing on controlled attenuation parameter (CAP) and elasticity. Additional serum analyses included lipid profiles, fasting insulin, and hormonal markers (follicle-stimulating hormone, luteinizing hormone, thyroid-stimulating hormone). Statistical analyses were conducted using SPSS version 28, with significance set at  $p < 0.05$ .

**Results:** PCOS participants exhibited significantly higher BMI compared to controls ( $p < 0.01$ ). Elevated CAP scores in the PCOS group indicated greater hepatic steatosis ( $p = 0.03$ ). Liver stiffness values were higher in PCOS patients but were not statistically significant ( $p = 0.07$ ). CAP scores showed positive correlations with insulin levels and lipid profiles in the PCOS group. Hormonal marker differences were not statistically significant.

**Conclusion:** The findings suggest that FibroScan is a valuable non-invasive tool for evaluating liver health in PCOS patients. The observed prevalence of hepatic steatosis highlights the importance of regular liver monitoring in this population. Further research is warranted to examine causal mechanisms and effective interventions for managing hepatic complications in PCOS.

**Key words:** PCOS, FibroScan, hepatic steatosis, liver stiffness, non-invasive assessment, metabolic health

PP-23

## Evaluation of Thyroid Fine Needle Aspiration Biopsy Results Performed at Bezmialem University Hospital and Comparison with the Literature

Güliz KEŞMER<sup>1</sup>, Özcan KARAMAN<sup>2,3</sup>, Feray GÜNVER<sup>3</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Endocrinology and Metabolic Diseases, İstanbul, Türkiye

<sup>3</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Pathology, İstanbul, Türkiye

**Introduction:** The thyroid gland is the largest endocrine gland in the body, and thyroid-related diseases are among the most common endocrine disorders. However, most are benign, with a low risk of malignancy. Since thyroid nodules are typically asymptomatic, they are often detected incidentally. Fine needle aspiration (FNA) biopsy is the standard method for evaluating thyroid nodules, with results classified using the Bethesda System for Reporting Thyroid Cytopathology. This system categorizes the cytological results into six diagnostic criteria: inadequate, benign, atypia of undetermined significance/follicular lesion of undetermined significance, suspicious for follicular neoplasia, suspicious for malignancy, and malignant. The aim of this study is to evaluate the cytological outcomes of FNA biopsies performed at Bezmialem University Hospital, using the Bethesda system, and to compare these results with those reported in the literature.

**Method:** This retrospective study included patients who underwent thyroid FNA biopsy at Bezmialem University Hospital from 2018 to 2023. Demographic data (age, gender), nodule characteristics (size, location), and Bethesda classification were collected from clinical records and postoperative histopathology reports.

**Results:** A total of 200 cases were included, with 85% of patients being female. Most thyroid nodules were classified as benign (80.5%), consistent with findings in similar studies. Only 3 cases (1.5%) were found to be malignant. No significant association was found between nodule size, location, or age and Bethesda category.

**Conclusion:** The results of this study indicated that thyroid FNA biopsy results at Bezmialem University Hospital were predominantly benign, with malignancy rates consistent with literature. No significant association was observed between nodule characteristics and Bethesda classification, supporting the reliability of FNA in thyroid diagnostics.

**Key words:** Thyroid nodule, fine needle aspiration biopsy, Bethesda system for reporting thyroid cytopathology

PP-24

## Food Literacy Abilities of Bezmialem Vakıf University Faculty of Medicine Students

Dilara YILMAZEL<sup>1</sup>, Bedia ÖZYILDIRIM<sup>2</sup>, Fatma Betül AKÇAKAYA ÖZER<sup>2</sup>, Ceyda ACAR<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Public Health, İstanbul, Türkiye

**Introduction:** Food literacy involves the knowledge, skills, and behaviors necessary to access, analyze, and use nutrition-related information to make healthy choices. It also includes understanding the impact of nutrition on health. Factors such as education, traditions, income, and nutritional knowledge influence eating habits and awareness. This study aims to evaluate the food literacy levels of medical students at Bezmialem Vakıf University, focusing on their awareness of the foods they consume and the resources they use for healthy eating research.

**Method:** The Food Literacy Scale-TR, consisting of 12 questions, was used to assess the food literacy of medical students in the 2024-2025 academic year. The survey was conducted online via Google Forms and included students from the 1<sup>st</sup> to the 6<sup>th</sup> year of study. To achieve 80% power at a 95% confidence level, with a standard deviation of 9, a minimum sample size of 70 participants was calculated.

**Results:** A total of 71 students completed the survey. Scores ranged from 1 to 5 points per item, with a maximum possible score of 80. Higher scores indicated greater food literacy. The average score for male students was  $54.95 \pm 9.82$  (n=21), while female students scored  $56.78 \pm 8.83$  (n=50). No significant relationship was found between gender and food literacy scores ( $p=0.427$ ). When comparing grades, 6<sup>th</sup>-year students had the highest average score (63.4), and 5<sup>th</sup>-year students, the lowest (53.07). However, no significant differences were observed across grade levels ( $p=0.759$ ).

**Conclusion:** The results showed that students were, on average, 75.9% conscious about food literacy. There was no significant relationship between food literacy skills and gender or grade level.

**Key words:** Food literacy, medicine students, education

PP-25

## Determination of Orthorexia Neuroza Tendencies in Bezmialem Vakif University Faculty of Medicine Students

Sueda KORKMAZ<sup>1</sup>, Bedia ÖZYILDIRIM<sup>2</sup>

<sup>1</sup>Bezmialem Vakif University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakif University, Faculty of Medicine, Department of Public Health, İstanbul, Türkiye

**Introduction:** Orthorexia nervosa (ON) is an eating disorder that begins with seemingly healthy eating habits but can become harmful. Individuals with ON exhibit an obsessive focus on food purity, preferring organic, low-calorie products, avoiding fast food, and meticulously reading food labels. This excessive concern can disrupt daily life and result in nutritional imbalances. ON prevalence varies with age, gender, and socioeconomic status, with young women being particularly vulnerable due to societal pressures and body image concerns. This study aimed to assess ON tendencies among medical students at Bezmialem Vakif University.

**Method:** The ORTO-11 scale was used to assess ON tendencies among Bezmialem University undergraduate medical students in the 2024-2025 academic year. The 15-question online survey that focused on eating attitudes was administered to the study group. Participants were evaluated based on gender, smoking status, and body mass index (BMI).

**Results:** A total of 184 participants (125 females, 59 males) were included. The mean ORTO-11 score for female participants was  $29.27 \pm 5.6$ , while the mean score for males was  $31.98 \pm 7.1$ . A statistically significant difference was found between the ORTO-11 score and gender ( $p=0.025$ ). The average ORTO-11 score for non-smokers ( $n=145$ ) was  $29.64 \pm 6.1$ , and for smokers ( $n=39$ ), it was  $32 \pm 6.4$ . No significant difference was found between the ORTO-11 score and BMI, smoking status, or academic year.

**Conclusion:** ON appears to be influenced by gender among medical students; females have a higher tendency towards orthorexic behavior, which calls for more awareness, and the creation of targeted interventions in the context of health-focused educational settings.

**Key words:** Ortorexia nervoza, eating disorders, healthy diet

PP-26

## Retrospective Evaluation of the Diagnosis, Treatment, and Follow-up Processes of Children Diagnosed with Developmental Dysplasia of the Hip at the Orthopedics and Traumatology Outpatient Clinic of Bezmialem Vakıf University Hospital

Bariş Tan HOROZ<sup>1</sup>, Gökçer UZER<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Orthopedics and Traumatology, İstanbul, Türkiye

**Introduction:** Developmental dysplasia of the hip (DDH) is a congenital orthopedic disorder affecting 1-5 per 1,000 live births. It can lead to pain, limited mobility, and osteoarthritis. Early diagnosis and treatment are crucial to prevent complications.

**Method:** This retrospective study included 50 patients diagnosed with isolated DDH at Bezmialem Vakıf University Hospital between 2012-2024. Patients with syndromic or teratogenic DDH were excluded. Statistical analyses were performed using SPSS 2.0 with t-tests and chi-square tests, considering  $p < 0.05$  as significant.

**Results:** Among the 50 patients, 88% were female, and 30% had a positive family history. Oligohydramnios (8%) and breech presentation (10%) were observed as perinatal risk factors. Swaddling was associated with restricted external rotation ( $p=0.027$ ). The most common clinical findings were hip abduction asymmetry (70.8%) and leg length discrepancy (63.8%). Graf ultrasound classifications revealed Type 2c (35.5%) and Type 3 (32.3%) as the most frequent. Pavlik harness was applied to 91.4% of patients, with an 80.6% success rate. Surgery was required in 18.8% of cases under six months, increasing to 61.5% between six and twelve months. The overall complication rate was 14.6%.

**Conclusion:** Early diagnosis and intervention improve DDH outcomes, reducing complications. Surgical treatment is necessary for delayed cases, but a multidisciplinary approach is vital. Further studies with larger cohorts are needed for more definitive conclusions.

**Key words:** Developmental dysplasia of the hip, Pavlik harness, orthopedic surgery, early diagnosis, pediatric orthopedics

PP-27

# Evaluation of the Risk Factors for Anterior Femoral Notching in Total Knee Arthroplasty and Its Effects on Clinical Outcomes

Melikcan İHTİYAROĞLU<sup>1</sup>, Fatih YILDIZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Orthopedics and Traumatology, İstanbul, Türkiye

**Introduction:** Notching of the femur during total knee arthroplasty (TKA) has been associated with supracondylar fractures. Due to anatomical differences among patients, avoiding femoral notching can be challenging when using standardized implant designs. This study aimed to evaluate whether femoral notching leads to fractures and to analyze its frequency and contributing factors.

**Method:** This single-center, retrospective study analyzed patients who experienced femoral notching after TKA. Data collected included notching depth, notching grade (classified using the Tayside classification), pre- and postoperative lower extremity deformity analysis, presence of postoperative fractures, and implant brand and size.

**Results:** Between June 2019 and December 2023, 75 patients underwent TKA and experienced femoral notching; however, there were no reported postoperative fractures. Among these, 9 patients had bilateral femoral notching, resulting in 84 analyzed knees. Notching grades were distributed as follows:

- Grade I: 24 knees
- Grade II: 24 knees
- Grade III: 20 knees
- Grade IV: 16 knees

Seventy percent of patients used Stryker-branded implants, while 29.3% used Zimmer & Biomet implants. No significant difference in notching grade was observed between implant brands ( $p=0.888$ ). Additionally, no correlation was found between notching grade and implant size ( $p=0.355$  for left knees,  $p=0.871$  for right knees).

Lower extremity deformity analysis indicated postoperative alignment improvements:

- aPDFa (pre-op mean: 87.58; post-op mean: 84.18; normal range: 79-87)
- aPPTA (pre-op mean: 84.18; post-op mean: 82.35; normal range: 78-84)

**Conclusion:** Although femoral notching is generally avoided during TKA as a precaution, this study found no correlation between femoral notching and the occurrence of fractures. Furthermore, notching severity was not associated with implant brand or size.

**Key words:** Anterior femoral notching, total knee arthroplasty, supracondylar periprosthetic fracture

PP-28

## Are We Treating PCOS the Right Way? Comparison of the Effectiveness of Combined Oral Contraceptive Methods Based on Estrogen Dose in the Management of Polycystic Ovary Syndrome

Yaren Yeliz AYDOĞAN<sup>1</sup>, Halime ÇALI ÖZTÜRK<sup>2</sup>

<sup>1</sup>Bezmi Alem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmi Alem Vakıf University, Faculty of Medicine, Department of Obstetrics and Gynecology, İstanbul, Türkiye

**Introduction:** Polycystic ovary syndrome (PCOS) is a common and significant condition that affects 8-13% of women. The Rotterdam consensus defines PCOS by the presence of at least two of the following three criteria: oligo-anovulation, hyperandrogenism, and polycystic ovaries. In the treatment of PCOS, combined oral contraceptives are commonly preferred as the first-line treatment option. This study aims to assess the impact of combined oral contraceptives with varying estrogen doses on the quality of life and symptoms in PCOS patients and identify the most effective doses for each symptom. Additionally, based on these findings, the goal is to create a guideline that will support individualized treatment approaches.

**Method:** A total of 33 female patients, aged 18-45, diagnosed with PCOS and referred to the Obstetrics and Gynecology Clinic of Bezmi Alem Vakıf University, were included in the study. The patients used three combined oral contraceptive groups differentiated by estrogen dose (low, medium, and high). The quality of life was assessed after treatment using the PCOSQ-50 and Ferriman-Gallwey scoring system. Surveys were collected via Google Forms, and descriptive statistics, chi-square, and t-tests were analyzed using SPSS 28V.

**Results:** The high-dose group demonstrated significant improvements in quality of life (QoL) scores ( $p=0.015$ ), whereas no significant differences were found between the low- and medium-dose groups ( $p=0.054$ ). Hyperandrogenism-related symptoms, such as excessive hair growth, were significantly reduced in the high-dose group ( $p=0.023$ ). High estrogen doses strongly correlated with improved physical and psychological symptoms ( $p<0.001$ ).

**Conclusion:** High-dose estrogen effectively improves QoL, particularly for hyperandrogenism symptoms in women with PCOS. These findings highlight the importance of personalized treatments and encourage further research to confirm these results.

**Key words:** Polycystic ovary syndrome, combined oral contraceptive, quality of life, estrogen, treatment strategies



PP-29

## Development of Glutathione Peroxidase Enzyme Activity Measurement Kit Control Material

Mustafa Gökhan GÜNGÖR<sup>1</sup>, Ömer FARUK ÖZER<sup>2</sup>, Tuğçe YILDIZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Biochemistry, İstanbul, Türkiye

**Introduction:** This study aims to investigate the preservability and activity of the enzyme glutathione peroxidase using the lyophilization technique.

**Method:** Samples from 5 EDTA tubes and 5 serum separator tubes, classified as medical waste after hematological and biochemical analyses, and commercially purchased bovine blood, were included in this study. Whole blood samples were analyzed for enzyme activity and subsequently centrifuged to separate the plasma. The separated samples were then washed three times with 0.9% saline solution through centrifugation. Prepared samples including whole blood, plasma, and serum were mixed with CPDA, sucrose, and distilled water at 1:2 and 1:10 dilutions. Enzyme activities were assessed using assays. Following lyophilization, the samples were reconstituted with the same materials, and enzyme activities were re-evaluated daily.

**Results:** In studies conducted on human whole blood, enzyme activity exhibited stability for 3 to 4 days in all samples, depending on concentration and the solvent used. However, serum and plasma samples were not stable. In studies on animal whole blood, CPDA and sucrose samples at a 1/2 dilution, as well as sucrose samples at a 1/10 dilution, demonstrated stability for one month. In animal serum samples, the 1/1 dilution samples, along with the sucrose and CPDA samples at a 1/2 dilution, exhibited stability for 11 days. Stability was maintained for a shorter duration in the remaining samples.

**Conclusion:** Products derived from human whole blood exhibited a shorter stability duration compared to those from animal whole blood. Given that prolonged stability is more advantageous for control materials, whole blood and serum samples obtained from animals would be more suitable for the preparation of control kits.

**Key words:** Glutathione peroxidase enzyme activity, lyophilization, control material

PP-30

## Evaluation of Electrocardiography in Patients Admitted to Emergency Service with Drug Intoxication

Merve İBRAHİMOĞLU<sup>1</sup>, Bahadır TAŞLIDERE<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Emergency Medicine, İstanbul, Türkiye

**Introduction:** Intoxications, caused by toxic substance intake, represent 0.8-5% of emergency admissions and significantly contribute to mortality and morbidity. Continuous monitoring and electrocardiography (ECG) assessments are crucial as toxic agents can impact cardiovascular function. ECG evaluation aids in the detection of electrolyte disturbances and involves analyzing heart rate, QRS duration, sodium channel block, QT duration, and the presence of ischemia. This study aims to enhance the follow-up and treatment of intoxicated patients in emergency services through ECG evaluations, shedding light on their importance and documenting previously unrecorded ECG similarities in such cases.

**Method:** The study examined patients aged 18 and older admitted to emergency services from 01.01.2020 to 31.12.2023, following ethical committee approval and adherence to the Declaration of Helsinki. Intoxicated patients were identified using ICD codes and hospital database reviews. Exclusions included patients under 18, those without poisoning, those lacking ECGs, incomplete data, and referrals from other hospitals. Data on demographics, admission details, interventions, poisoning routes, chronic illnesses, medication history, substance use, ECG interpretation, lab results, consultations, and outcomes were systematically recorded for evaluation.

**Results:** Among 72 patients, 38 were female and 34 male, (average age  $56.6 \pm 9.8$ ). While the QRS duration was normal, a significant gender difference was noted ( $p=0.001$ ). QT durations differed based on whether medications were taken knowingly or accidentally ( $p=0.045$ ). There was a significant relationship between certain medications and QT duration ( $p<0.05$  for antidepressants and  $p=0.007$  for paracetamol).

**Conclusion:** Evaluation of our research results found that although intoxication with antidepressants created a difference in QT duration, knowingly taking the medication also caused a significant difference. In cases of patients admitted for intoxication to the emergency service, it should be considered whether the patient knowingly used the medication when assessing QT duration. Our results need to be validated through further experimental and clinical studies.

**Key words:** Electrocardiography, intoxication, emergency, QT, QRS

PP-31

# The Impact of the COVID-19 Pandemic on Bezmialem Vakıf University Medicine Students' Attitudes Towards Influenza Vaccination

Eda Nur TOPALCIK<sup>1</sup>, Zeyneb İrem YÜKSEL SALDUZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Family Medicine, İstanbul, Türkiye

**Introduction:** Vaccines are crucial in the fight against infectious diseases, and the influenza vaccine is recognized as an important preventive measure, especially for individuals in high-risk groups. However, challenges such as vaccine hesitancy make this fight more difficult. The coronavirus disease-2019 (COVID-19) pandemic has influenced individuals' perceptions of health and vaccines. This study aims to evaluate medical students' attitudes toward the influenza vaccine and the impact of the pandemic on these attitudes.

**Method:** This study was conducted among medical students enrolled at Bezmialem Vakıf University through a web-based survey. The survey included questions about demographic information and attitudes, knowledge, and behaviors related to influenza and COVID-19 vaccines. Data were analyzed using descriptive statistics, chi-square tests, and independent t-tests ( $p=0.05$ ).

**Results:** A total of 105 students participated in the study; 65.71% were female, and 34.29% were male. Among the participants, 45.71% had received at least one influenza vaccine in their lifetime. While 66.67% of females believe in the necessity of the influenza vaccine, only 47.22% of males share this belief ( $p=0.054$ ). Reasons for not believing that the influenza vaccine protects against the flu include "lack of sufficient knowledge", (51.85%). A statistically significant relationship was found between students who received the influenza vaccine during the COVID-19 pandemic and those who reported that the pandemic influenced their influenza vaccination decisions ( $p<0.0001$ ).

**Conclusion:** The COVID-19 pandemic positively impacted individuals' attitudes toward influenza vaccination. However, doubts about the necessity of the vaccine and insufficient knowledge indicate that vaccine hesitancy persists. These findings emphasize the importance of future educational programs to raise awareness and reduce vaccine hesitancy.

**Key words:** COVID-19, influenza vaccine, vaccine hesitancy, medical students, pandemic impact

PP-32

## Relationship Between Vitamin D Level and Graves' Disease

Ceren AÇBAY<sup>1</sup>, Mehmet Umut ÇAPAR<sup>2</sup>, Özer AÇBAY<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of Endocrinology, İstanbul, Türkiye

**Introduction:** It is suggested that vitamin D deficiency is a contributing factor in the pathogenesis of many autoimmune diseases. There are only a few studies investigating the relationship between vitamin D deficiency and Graves' disease (GD), which is an autoimmune thyroid disease. Therefore, in this study, we compared the vitamin D levels in patients with GD and healthy controls and examined whether there were correlations between vitamin D levels and laboratory and clinical parameters.

**Method:** The medical records of 92 patients with GD aged between 18-75 and 223 healthy controls, matched according to age and gender from Cerrahpaşa Adult Endocrinology Clinic, were examined retrospectively, and the laboratory and clinical data for the study were obtained.

**Results:** Patients with GD had significantly lower vitamin D levels compared to controls ( $19.08 \pm 7.53$  vs.  $21.98 \pm 10.02$  ng/mL,  $p=0.02$ ). The prevalence of vitamin D deficiency ( $<20$  ng/mL) and insufficiency ( $20-30$  ng/mL) was higher in GD (57.6% vs. 48.4%,  $p<0.001$ , and 38% vs. 30.5%,  $p<0.001$ , respectively) compared to that in controls. In patients with GD, there were no correlations between the levels of vitamin D and thyrotropin receptor antibodies (TRab), free triiodothyronine (FT3), and free thyroxine (FT4). There was no difference in the vitamin D levels between the Graves ophthalmopathy-positive and-negative patient groups ( $18.39 \pm 6.8$  vs.  $18.58 \pm 6.8$  ng/mL,  $p=0.79$ ).

**Conclusions:** Patients with GD had lower vitamin D levels compared to healthy controls; but, there was not any effect of the vitamin D levels on the laboratory or clinical parameters of GD.

**Key words:** Vitamin D, Graves disease, Graves ophthalmopathy

## PP-33

## The Positivity of The Direct Antiglobulin Test and CD38 Expression in Patients with Chronic Lymphocytic Leukemia and Their Relationship Between The Rate of Developing Autoimmune Hemolytic Anemia

Beyza Nur SOYDAN<sup>1</sup>, Güven ÇETİN<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Internal Medicine, Division of Hematology, İstanbul, Türkiye

**Introduction:** During the course of CLL, approximately 35% of cases are observed with a positive direct antiglobulin test (DAT), and 7-10% of patients with a positive DAT develop autoimmune hemolytic anemia (AIHA). Studies have shown that DAT and CD38 positivity cause a negative outcome in patients with CLL. This study aims to examine the relationship between CD38 expression and DAT positivity and their association with the development of AIHA.

**Method:** This study was designed retrospectively and included 74 patients. Patients' clinical findings (age, gender, lymphadenomegaly, hepatomegaly, splenomegaly), hematological profiles, CD38, DAT, and AIHA positivity and negativity during the diagnosis and treatment process were examined. Diseases that patients had in the previous period and during treatment were included. Statistical analysis was calculated.

**Results:** The number of patients who met inclusion and exclusion criteria was 74. CD38 levels were positive in 23 (31.1%) patients. DAT levels were positive in 22 (29.7%) patients. 6 patients developed AIHA. The number of cases showing both DAT and CD38 positivity, was 3 (4%,  $p=0.035$ ). There were no patients who were either CD38 or DAT positive and developed AIHA. The frequency of developing AIHA was significantly higher in male patients (6/6, 100%) compared to female patients (0/6, 0%) ( $p=0.03$ ). Nine patients developed secondary cancer. Hypothyroidism was detected in 5 patients.

**Conclusion:** We could not find a significant relationship between positive DAT and CD38 expression in relation to AIHA development. This result could be related to the number of the studied cases. In order to make a conclusion about their value as prognostic parameters, a larger series should be investigated.

**Key words:** Chronic lymphocytic leukemia, direct antiglobulin test, CD38, autoimmune hemolytic anemia

PP-34

## Association Between Serum Uric Acid and Lipid Profile in Type 2 Diabetic Patients

Beyza ÖZDEMİR<sup>1</sup>, Aclan ÖZDER<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Family Medicine, İstanbul, Türkiye

**Introduction:** Diabetes mellitus (DM) is a systemic disease primarily characterized by imbalances in substances affecting multiple systems. The most common cause of death is cardiovascular disease, with dyslipidemia being the greatest risk factor for cardiovascular disease. Also, hyperuricemia shows a correlation with dyslipidemia. In our country, there are insufficient data about this association. Our goal is to epidemiologically investigate this relationship and thereby minimize potential complications that may arise due to diabetes.

**Method:** Patients diagnosed with type 2 DM who visited the Family Medicine outpatient clinics at Bezmialem Vakıf University Faculty of Medicine Hospital between January 2014 and January 2024 were included in this study. The patients' demographic data (age, gender, comorbidities, medications used) and fasting blood glucose, HbA1c, triglycerides, HDL, LDL, and uric acid levels were retrospectively collected from the hospital database.  $P < 0.05$  was considered statistically significant.

**Results:** We evaluated clinical and laboratory findings in 234 patients with type 2 DM. In this study, 50% (117) were females and 50% (117) were males. Two hundred nine patients (89.3%) had high HbA1c values and 90 patients (38.5%) had hyperuricemia. Sixty of the hypertriglyceridemic patients (43.1%) also had hyperuricemia.

**Conclusion:** Results of this study showed that there was a significant weak positive correlation between uric acid levels and triglyceride levels in type 2 diabetic patients, indicating that high uric acid may contribute to elevated triglycerides. There was no significant correlation between serum uric acid and other lipids. These results suggest that monitoring uric acid levels in diabetic patients, especially with hypertriglyceridemia, may help identify individuals at higher cardiovascular risk. Further research is needed to explore this connection.

**Key words:** Type 2 diabetes mellitus, uric acid, lipid profile

PP-35

## Determination of Blood Culture Positivity Times for the Purpose of Reducing the Standard Incubation Period in Blood Cultures

Mahmut Enes Yiğit<sup>1</sup>, Mehmet Ziya DOYMAZ<sup>2</sup>

<sup>1</sup>Bezmialem Vakıf University, Faculty of Medicine, İstanbul, Türkiye

<sup>2</sup>Bezmialem Vakıf University, Faculty of Medicine, Department of Microbiology, İstanbul, Türkiye

**Introduction:** Blood culture remains the gold standard for diagnosing bloodstream infections, yet prolonged incubation times delay clinical decision-making. Automated blood culture systems have reduced time-to-positivity (TTP), raising the question of whether the standard 120-hour incubation period can be shortened. This study aimed to analyze positivity distributions across different pathogens and evaluate the feasibility of reducing the standard incubation time.

**Method:** This retrospective study analyzed 5,156 positive blood cultures collected at Bezmialem Vakıf University Hospital between April 2022 and April 2024. Pathogens were categorized, and cumulative positivity distributions were calculated. Kaplan-Meier survival analysis, log-rank testing, and Cox proportional-hazards modeling were used to determine the positivity trends. Sensitivity and specificity analyses were conducted to assess the impact of TTP reduction.

**Results:** The cumulative positivity analysis showed that 99.1% of cultures turned positive within the first 48 hours, suggesting a strong early detection capability. Kaplan-Meier analysis revealed that most bacterial infections reached positivity by 85 hours, with *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus aureus* exhibiting rapid detection. However, a significant proportion of clinically critical pathogens, including fungi (*Candida* spp.), fastidious bacteria (*Brucella* spp.), and certain anaerobes, required extended incubation of 105-120 hours. Reducing the TTP below 120 hours would risk missing these pathogens, compromising patient safety.

**Conclusion:** Although most bacterial pathogens are detected within 85-90 hours, the presence of highly clinically relevant pathogens requiring 105-120 hours necessitates maintaining the standard 120-hour incubation period. Reducing TTP is not feasible without risking false negatives in slow-growing pathogens, which are critical for patient management.

**Key words:** Blood cultures, incubation time, time-to-positivity, bloodstream infections, clinical microbiology