

EAACI Fellowship 2025 Report

Title of Project: Utility of Cellular and Genetic tests in the diagnosis of inborn errors of immunity.

Name and Country: Ahmed Elmazaly, Egypt.

Type, Duration, and Location: Clinical Fellowship, Three Months, London, UK.

Host Institution and Supervisor: King's College Hospital NHS Trust, Denmark Hill, Department of Clinical Immunology & Allergy, King's Heath Partner, London SE5 9RS, UK, Dr. Mohammad Ibrahim.

Project Summary

I was honoured to be awarded the 2025 Clinical Fellowship by the European Academy of Allergy & Clinical Immunology (EAACI). I had the unique opportunity to observe the clinical activities at a prestigious institution during my stay at King's College Hospital, with active participation in research projects related to the field of cellular and molecular immunology. This approach helped me broaden my knowledge in the field of Inborn Errors of Immunity (IEIs). I also had the opportunity to witness the weekly challenge clinic related to food and drug allergy, which significantly expanded my knowledge and experience in such a field.

Clinic Schedule

Allergy Clinic: I've attended three allergy clinics on a weekly basis with three different consultants, with an average of 6 patients per clinic, observing various case presentations such as: Allergic Rhinitis, Bronchial Asthma, Atopic Eczema, and Urticaria. I've engaged with a wide range of clinical discussions of patients' history and symptoms with interpretation of the allergy testing, either in vivo (Skin Prick Tests) and in vitro (ImmunoCAP testing), which was an important tool that expanded my knowledge in that field.

Immunology Clinic: I shadowed three immunology clinics weekly, averaging 5 patients per clinic. This involved interacting with patients exhibiting symptoms and signs of immunodeficiency, employing a stepwise approach to distinguish between primary and secondary causes, and discussing various treatment options, including antibiotic/antiviral/anti-fungal prophylaxis versus immunoglobulin replacement. I've come across many cellular and genetic testing, learning when to request and how to interpret them.

Challenge Clinic: A Friday morning clinic with an average of 3-4 patients per clinic, offering skin testing and allergen provocation challenges for food or drug allergies. I've witnessed skin prick tests, intradermal skin tests, and challenges using either oral or parenteral routes to many foods and drugs. I've learned the systematic approach to manage such cases and how to counsel patients for future encounters.

Joint Respiratory Clinic: Every three months, there is a joint clinic with the chest medicine team dealing with patients with immunodeficiency complicated with lung disease.

MDT meetings

On Monday afternoons, we convened a meeting to discuss challenging allergy and immunology cases, making decisions on new treatment recommendations, including the initiation of immunotherapy or immunoglobulin replacement.

Transitional care meetings

Every third Tuesday of the month, our department has a joint transitional care meeting with the pediatric allergy department for cases transferring from pediatric services to adult ones, sharing all milestones in history and treatment options provided, including hereditary angioedema, immunodeficiency, and atopic patients.

Research Journal Club

We had a monthly meeting with laboratory colleagues discussing one of the interesting research articles published. I had the pleasure of presenting an interesting paper by Voyer et al., "Autoantibodies against type I IFNs in humans with alternative NF- κ B pathway deficiency".

Specific Projects

I had the opportunity to work on two projects related to the utility of cellular and genetic testing in our speciality. The first one was a service quality improvement project related to monogenic atopic disorders. Our objectives were to set an algorithm for how to improve the diagnosis of primary atopic disorders, to identify monogenic variant mutations associated with atopic disorders, and to improve the quality and accuracy of diagnoses of allergic diseases, thus paving the way for targeted therapies as a precision medicine approach. The second one was a literature review on autoimmunity as a phenocopy of IEIs. Our central hypothesis was to search for autoimmunity in forms other than autoantibodies and against antigens other than cytokines, aiming to identify phenocopies beyond those mentioned in the International Union of Immunological Societies 2024 paper.

Personal Reflection

During my clinical fellowship, my main objective was to extend my knowledge and understanding of cellular and genetic testing, especially in the field of immunodeficiency. My period in King's College Hospital has been crucial for enriching my understanding of the approach, assessment, and planning of treatment of patients with such diagnoses. I have learned the importance of a multidisciplinary approach to providing the best care under safe conditions for all patients.

Acknowledgement

I want to express my gratitude to the department of Clinical Immunology and Allergy at King's College Hospital for making me feel part of their team, especially my mentor, Dr. Mohammad Ibrahim, who showed a huge passion to teach and sharing every piece of information and continuous support during my stay starting with helping with my accommodation through arranging my schedule and assigning project ideas. Last but not least, I extend my sincere gratitude to the EAACI for making this possible.