Desa Lilic and Mario Abinun

Trust Fund for the advancement of Clinical Immunology in Serbia

https://www.ncl.ac.uk/medical-sciences/research/serbian-clinical-immunology-fund/

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The Purpose:

The Gift Donation made to Newcastle University will enable and enhance the practice and advancement of clinical immunology in Serbia, specifically:

- adult and paediatric clinical immunology
- clinical immunology diagnostic services
- clinical immunology research.

This will be achieved by supporting reciprocal exchange of knowledge, visits, interactions and forging of contacts between candidates from Serbia and candidates from Newcastle, UK.

Background - Why have Desa & Mario set up this donation?

DL and MA qualified as medical doctors at Belgrade and Sarajevo University respectively (former Yugoslavia).

Prior to moving to the UK in 1992, DL worked at the Military Medical Academy (MMA) where she specialised in Clinical Immunology and conducted research under the guidance of Col Dr Aleksandar Dujic. MA specialised as a paediatrician at the Institute of Mother and Child Health Care under Dr Mirko Mikuska.

From the very beginning, both DL and MA focused their clinical and research interests on immunology and were active participants of the then (and now) prestigious Yugoslav Immunology Society led by Professors Mirko Simic and Mija Lukic. and were founding members of the newly formed European Society for Immune Deficiency (ESID) which is now internationally renowned.

Prior to moving to the UK, MA and his team conducted the first bone marrow transplantation (BMT) in a child with primary immune deficiency (PID) where the bone marrow

was prepared by DL and her team at the MMA. In 1992, they were invited by Professor Roland Levinsky to come to Newcastle, MA to the newly set up NHS paediatric BMT Unit with Professor Andrew Cant, while DL set up her research at Newcastle University with the help pf Dr Gavin Spickett and Professor Jane Calvert. DL also set up and headed Clinical Immunology Diagnostic Laboratories at the James Cook University Hospital in Middlesbrough and University Hospital of North Durham and set up specialised Candidiasis clinics at the Royal Victoria Infirmary in Newcastle for patients with Chronic Candidiasis which were the focus of her academic research.

In addition to significant achievements in the treatment and diagnosis of PIDs, MA set up BMT in children with juvenile arthritis and other systemic autoimmune diseases.

- DL's most important research findings were the identification of underlying mechanisms in the 2 largest cohorts of patients with the PIDs presenting as Chronic Mucocutaneous Candidiasis (CMC): in one cohort, the identification of an underlying mutation of the STAT1-gain of function gene (van de Veerdonk FL, Plantinga TS, HoischenA, Smeekens SP, Joosten LAB, Gilissen C, Arts P, Rosentul DC, Carmichael AJ, van der Graaf CAA, Kullberg BJ, van der Meer JWM[#], Lilic D[#], Veltman JA[#], Netea MG[#] **(#shared co-senior authorship)**: Mutations in the CC-domain of STAT1 in Autosomal Dominant Chronic Mucocutaneous Candidiasis. New Engl J Med 2011,365 (1):54-61; Toubiana J, Okada S, Hiller J, Oleastro M, Gomez ML, Becerra JCA, Bousfiha A, Rodriguez-Gallego C, Meyts I, Kisand K, Reichenbach J, Renner ED, Rosenzweig S, Grimbacher B, van de Veerdonk FL, Traidl-Hoffmann C, M[5,6,#], Capucine Picard, Laszlo Marodi, Morio T, Kobayashi M, Lilic D, Milner JD, Holland S, Casanova J-L, Puel A, on behalf of the International STAT1-GOF study group: STAT1 gain of function mutations underlie an unexpectedly broad clinical phenotype: an international survey of 274 patients. Blood 2016 127(25):3154-3164); in a second cohort of CMC patients with the AIRE gene mutation, the existence of anti-IL-17 antibodies which explained the link between autoimmunity and immune deficiency in these patients (Puel A, Natividad A, Chrabieh M, Döffinger R, Barcenas-Morales G, Picard C, Ouachée-Chardin M, Toulon A, Bustamante J, Al-Muhsen S, Arkwright PD, Costigan C, McConnell V, Cant AJ, Abinun M, Polak M, Bougnères PF, Kumararatne D, Blanche S, Fischer AM, Bodemer C, Abel L, Lilic D*, Casanova J-L* **(*shared co-senior authorship);** Auto-antibodies to IL-17A, IL-17F and IL-22 in patients with chronic muco-cutaneous candidiasis and auto-immune polyendocrine syndrome type I. J Exp Med 2010; 207:291-297; **Editorial:** Maxmen A. Antibodies attack IL-17. J Exp Med 2010; 2010;207(2):264-5; Kisand K, Lilic D, Casanova JL, Peterson P, Meager A, Willcox N. Mucocutaneous candidiasis and autoimmunity against cytokines in APECED and thymoma patients: clinical and pathogenic implications. Eur J Immunol 2011, 41:1517-1527. These findings enabled identification of disease, novel diagnostic approaches and new treatments in these patients (Higgins E*, Al-Shehri T*, McAleer MA, Feighery C, Lilic D#, Irvine AD#. Successful treatment of a patient with Chronic Mucocutaneous Candidiasis due to a gain-of-function STAT1 mutation with the JAK1/2 inhibitor ruxolitinib. JACI 2015,135 (2):551-553; **(#shared co-senior authorship);** Jakinibs for the Treatment of Immunodysregulation in Patients with Gain of Function STAT1 or STAT3 Mutations. Forbes LR, Vogel TP, Cooper MA, Castro-Wagner J, Schussler E, Weinacht KG, Plant AS, Su HC, Allenspach EJ, Slatter M, Abinun M, Lilic D, Cunningham-Rundles C, Eckstein O, Olbrich P, Guillerman RP, Patel NC, Demirdag YY, Zerbe C, Freeman AF, Holland SM, Szabolcs P, Gennery A, Torgerson TR, Milner JD, Leiding JW. J Allergy Clin Immunol 2018, 142(5):1665-1669;

Given their careers, commitments and enduring passion to understand immune mechanisms in clinical practice and PIDs, DL and MA were keen to contribute and support further advancement of all aspects of Clinical Immunology in Serbia where they trained and initiated their interests in this exciting field.

Desa Lilic MD MSc DSc/PhD FRCPath
Clinical Senior Lecturer / Associate Professor
Hon Consultant Clinical Immunologist (rtrd)

Mario Abinun MD MSc DSc/PhD FRCP, FRC
Hon Clinical Senior Lecturer / Associate Professor
Consultant Paediatric Immunologist (rtdr)

Institute for Translational and Clinical Research
Newcastle University
desa.lilic@ncl.ac.uk mario.abinun@ncl.ac.uk