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Post-Infectious Autoimmune Syndrome (PIFAS) as an integrated and combinatorial biomarker to monitor autoimmune myocarditis and thus the chronification of post-infectious diseases of autoimmune origin

Sergey Suchkov[1,2,5-7], **Natalie Cherepahina**[3], **Murat Agirov**[4], **Trevor Marshall**[8], **Kusum Ah-medilova**[4] and **Jamiliya Tabaksoeva**[4]
[1]I.M.Sechenov First Moscow State Medical University, Russia
[2]A.I.Evdokimov Moscow State Medical & Dental University, Russia
[3]Central Clinical Hospital No 85, Russia
[4]Moscow Municipal Clinical Hospital No 83, Russia
[5]EPMA, EU
[6]ISPM, Japan
[7]PMC, USA
[8]Autoimmunity Foundation, USA

Development of PIFAS as a Post-Infectious Autoimmune Syndrome (PIFAS) to illustrate a new combinatorial and integrated biomarker of the immune-mediated (including latent) disorders is featured with a progression of chronic relapsing diseases of post-infectious origin. We have investigated the syndrome-like immunopathology as applicable to chronic inflammatory processes including chronic myocarditis.

In view of the structural homology immune response caused by a microbial pathogen to balance between two categories of epitopes (self-epitopes and microbial epitopes) is being developed through both autoreactive T-cells and auto-Abs. The identification of such pathogen is restricted by some difficulties. Thus, for Auto Immune Myocarditis (AIM) to make a bridging link with the infection is established for two-thirds of all patients, and transformation of primary (infectious) phase into PIFAS is initiated by mimicking epitopes of, for instance, Coxsackievirus (CVB3) and/or Herpesviridae (CMV), herewith presence of cardiomyosine autoreactive CTLs (CM-auto reactive CTLs) and anti-CM auto-Abs, damaging myocardium to release sequestered autoAgs and to facilitate the induction and/or development of PIFAS is required.

We can stress that a tandem of two mutually mimicking epitopes (microbial and self-epitopes) is implicated in the pathogenesis of PIFAS. The therapeutic strategy for such patients should be different. And the identification of the primary pathogen or microbial associate is no less important part of the protocol being used, for what we applied immunodiagnostic screening combined with molecular diagnostics.

There are no obvious clinical and laboratory criteria to get the syndrome validated. An application of transgenic models to suit the aims of clinical practice will give an opportunity to reveal the events gapped between induction and progressing of PIFAS and will allow to pre-select specific targets to control induction and progression of PIFAS and thus chronification of the clinical illness to prevent the latter in time.

Biography

Sergey Suchkov, MD, PhD researcher-immunologist, clinician, graduated from School of Medicine, A.V.Lunacharskii Astrakhan State Medical University, Russia, in 1980. Suchkov has been trained at the Institute for Medical Enzymology, The USSR Academy of Medical Sciences, National Center for Immunology (Russia), National Institutes of Health Bethesda, USA and British Society for Immunology to cover 4 British university facilities. Suchkov worked for the Central Laboratory at Lenin's Mausoleum, then at the Institute for Medical Enzymology, The USSR Academy of Medical Sciences, for the Institute of Developmental Biology, Russian Academy of Sciences (RAN), Helmholtz Institute of Eye Diseases, and for Moscow Regional Clinical Research Institute including a position of the Immunologist-in-Chief of the Health Services of the Moscow Region. Since 2005, he has been working as Professor of A.I.Evdokimov Moscow State Medical & Dental University and I.M.Sechenov First Moscow State Medical University. From 2007, Suchkov was the First Vice-President and Dean of the School of Preventive and Personalized Medicine of the University of World Politics and Law. In 1991-1995, Suchkov was a Chief Scientific Secretary of the Editorial Board of the International Journal "Biomedical Science" (issued by the Russian Academy of Sciences and Royal Society of Medicine, UK). In 1995-2005, Suchkov was a Director of the Russian-American Program in Immunology of the Eye Diseases. Suchkov is a member of the Advisory Board, EPMA (European Association of Predictive, Preventive and Personalized Medicine), Brussels, EU; member of the Editorial Boards, Open Journal of Autoimmunity, EPMA J., Personalized Medicine Universe, American Journal of Cardiovascular Res. He has also published more than 500 papers. He is known as an author of the concept of postinfectious clinical and immunological syndrome, co-author of the concept of abzymes and their impact into the pathogenesis of autoimmunity conditions, and as one of the pioneers in promoting the Concept of Predictive, Preventive and Personalized Medicine.

ssuchkov57@gmail.com